STOMACH

S1585 Outstanding Research Award in the Stomach Category

Combining Surgical Pyloroplasty and Gastric Electrical Stimulation in Gastroparetic Patients Is Superior to Pyloroplasty Alone: A Randomized Double Blind Placebo Control Trial

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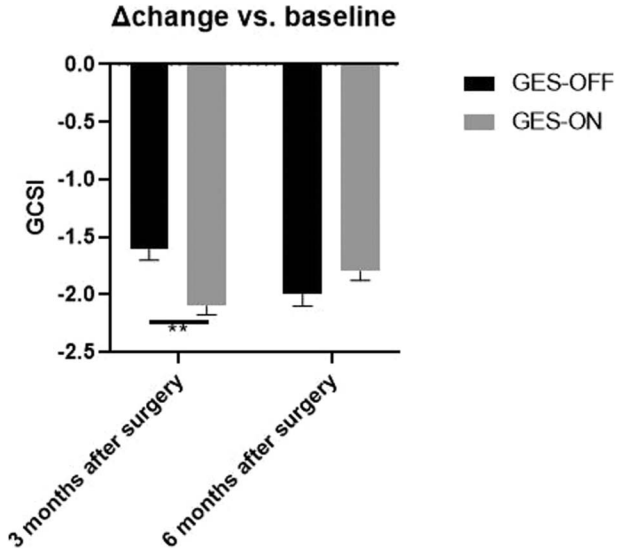
Introduction: Pathophysiology of gastroparesis (GP) is related to the depletion of interstitial cells of Cajal in the stomach and suspected pathology of the pyloric smooth muscle. Pyloroplasty (PP) accelerates gastric emptying (GE), while gastric electrical stimulation (GES) improves GP symptoms. Our double-blind randomized clinical trial investigated if combining surgical PP and GES is more effective than PP alone.
Methods: Drug refractory GP patients underwent simultaneous surgical implantation of the GES system with PP. Scintigraphic GE was performed at baseline (all participants were delayed at 4 h with >10 % retention), and 3 months after surgery. Patients were randomized to 3 months of active GES stimulation (ON group with default setting of GES parameters), or no stimulation (OFF group). All patients then had GES turned ON for another 3 months. GP Cardinal Symptom Index (GCSI) with 6-points scale (0- none; 5-very severe) was recorded at baseline, 3 and 6 months after the surgery. Delta changes of GCSI and individual GP symptoms in ON and OFF groups at 3 and 6 months versus their baseline were calculated and compared using 2-way ANOVA followed by Tukey's post-hoc analysis.
Results: 30 GP patients (18F; mean age 46 (21-72); 6 idiopathics; 24 diabetics with mean duration of DM 24 years (3-50); mean duration of GP 5.6 (1-18) years met criteria for the trial. The mean baseline 4 h GE retention was not different in GES-OFF and -ON group. GE was significantly accelerated at 3 months in GES-OFF (46%) and GES-ON (62%) groups (*$P<$ 0.05), and 39% patients normalized their 4h GE. Patients were randomized to GES-OFF or ON (15 patients per group). GP etiologies were similar in both groups. Baseline GCSI in GES-OFF (3.5±0.2) was comparable to GES-ON (3.7±0.2) group, and significantly improved in 3 months compared to baseline ($P<$ 0.01) in both groups. However, mean GCSI score was significantly better ($P<$ 0.05) in GES-ON than GES-OFF group (Figure). When GES was turned ON in GES-OFF group at 3 months their GSCI significantly improved at 6 months. The frequency of hospitalizations due to vomiting was significantly reduced in GES-ON vs OFF group (P=0.02). There were no post-surgical complications or technical dysfunctions recorded during this trial.
Conclusion: Our randomized, double-blind study has revealed for the first time that combining GES with pyloroplasty is statistically more effective than PP alone in controlling GP symptoms and GE is similarly accelerated following PP in both groups.



[1585] **Figure 1.** Changes of Gastroparesis Cardinal Symptom Index (GCSI) at 3 and 6 months in GES-ON versus GES-OFF group compared to baseline. **P<0.01

S1586

Prognostic Value of Systemic Inflammatory Markers in Patients With Gastric Adenocarcinoma

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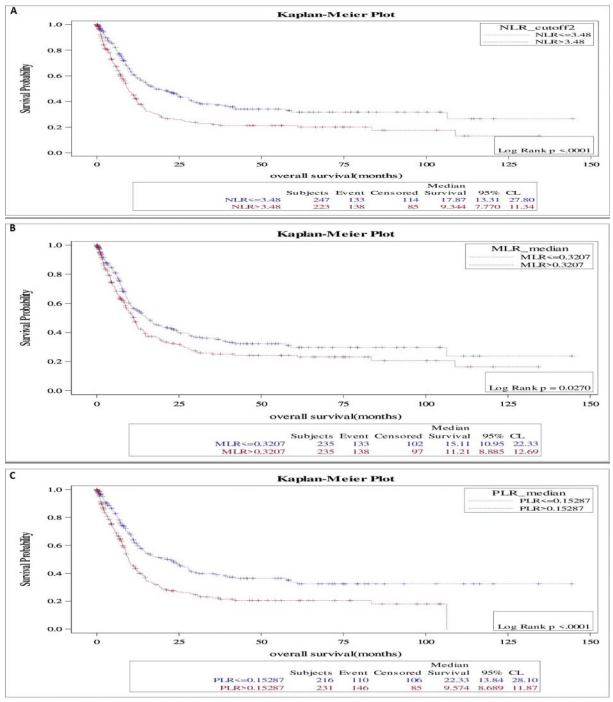
Introduction: Recent studies have shown the role of inflammatory markers, especially the neutrophil-to-lymphocyte Ratio (NLR), as indicators of poor prognosis in various gastrointestinal malignancies. We aimed to examine the prognostic value of NLR, among other markers, and their relationship with the presence of baseline distant metastasis in patients with gastric adenocarcinoma.
Methods: We retrospectively reviewed the charts of 502 patients with gastric adenocarcinoma treated at a tertiary care cancer center from 2012 to 2018. We examined the relationship between absolute eosinophilic count (AEC), absolute lymphocyte count (ALC), absolute monocytic count (AMC), absolute neutrophil count (ANC), monocyte to lymphocyte ratio (MLR), NLR, and platelet to lymphocyte ratio (PLR) with the presence distant metastases, and overall survival (OS). We used multivariable logistic regression analyses to test the association between the variables and the presence of baseline distant metastases.
Results: The median age was 54 years, and males comprised 56% of the patients. The ROC value of 3.9 was determined as the cutoff value for NLR. High NLR (NLR > 3.9 μL) was significantly associated with the presence of distant metastasis at diagnosis (P-value: 0.0001, OR: 0.5, 95% CI: 0.3–0.7). High ANC (≥6015/μL), AEC (≥215 /μL), and PLR (≥0.15) were significantly associated with baseline distant metastases (P-value: 0.024, 0.001, and 0.001 respectively). Multivariable analysis showed that high NLR (P-value, 0.0005, OR: 0.5, CI: 0.32–0.74) was an independent risk factor for distant metastasis at presentation. High baseline ANC, NLR, MLR, and PLR were associated with poor OS (P-value: 0.0455, 0.0003, 0.0270, and < 0.0001, respectively) (Table, Figure).
Conclusion: High systemic inflammatory markers are associated with poor prognosis (the presence of distant metastasis) and poor OS in patients with gastric cancer. Simple laboratory tests such as complete blood counts can be used as markers of poor prognosis and poor OS in patients with gastric cancer.



[1586] **Figure 1.** A) Kaplan Meier curve for overall survival with NLR. B) Kaplan Meier curve for overall survival with MLR. C) Kaplan Meier curve for overall survival with PLR

Table 1. The association between systemic inflammatory markers with the presence of distant metastases

	Baseline distant metastases				
	Present	Absent	*P*- value	OR	95% CI
ANC ≥ 6000	97 (39%)	154 (61%)	0.024	0.65	(0.4-0.9)
ANC < 6000	73 (29%)	178 (71%)			
ALC ≥ 2000	83 (33%)	168 (67%)	0.7	1.0	(0.7-1.6)
ALC < 2000	87 (34%)	164 (66%)			
AMC ≥ 660	92 (37%)	159 (63%)	0.19	0.8	(0.5-1.1)
AMC < 660	78(31%)	173 (69%)			
AEC ≥ 215	98(67.6%)	151 (61%)	0.001	0.5	(0.3-0.8)
AEC < 215	47(25%)	142 (75%)			
NLR ≥ 3.9	86 (44%)	110 (56%)	0.0001	0.5	(0.3-0.7)
NLR< 3.9	84 (27%)	222 (73%)			
MLR ≥ 0.3	89 (35%)	162 (65%)	0.45	0.9	(0.6-1.3)
MLR< 0.3	81(32%)	170 (68%)			
PLR ≥ 0.15	98 (40%)	150 (60%)	0.001	0.5	(0.3-0.8)
PLR < 0.15	57 (25%)	171 (75%)			

S1587

Early vs Delayed Feeding After Percutaneous Endoscopic Gastrostomy Tube Placement—Systematic Review and Meta-Analysis

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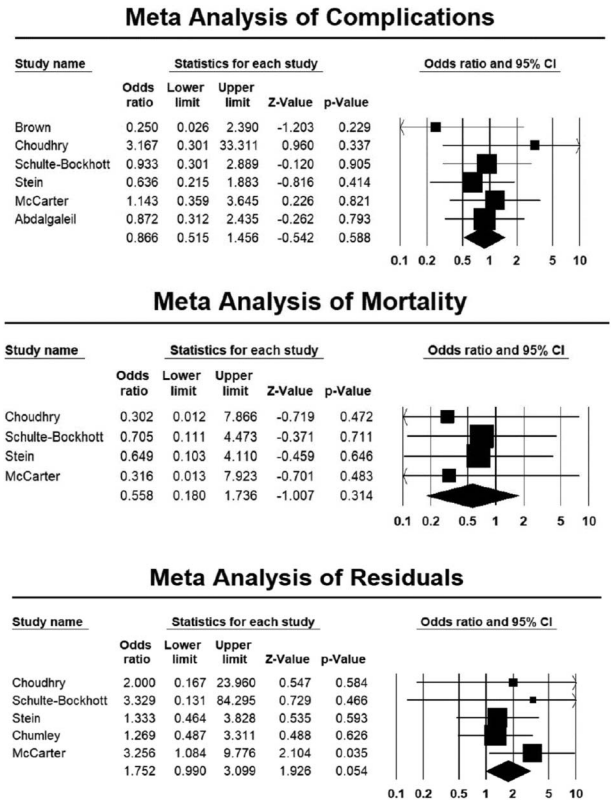
Introduction: In clinical practice, tube feedings have been delayed after the percutaneous endoscopic gastrostomy (PEG) tube placement. Previous studies including a meta-analysis in 2008 showed that it is safe to start tube feeding within 4 hours of PEG tube placement. However, it is still a common practice to delay initiation of tube feeding up to 24 hours after PEG tube placement. We have performed an updated analysis of studies comparing early and late tube feedings.
Methods: Major databases like PubMed, EMBASE, and Web of Science were searched in June 2022 for randomized controlled trial (RCT) studies reporting on outcomes comparing early (< or = 4 hours) vs delayed (>4 hours) feeding after PEG tube placement in adult patients. The primary outcomes in our study include complication rates and mortality rates within 72 hours of procedure. The outcomes were reported as pooled odds ratio (95% confidence interval [CI], *P*-value, I^2).
Results: Seven RCT's that included 507 patients were analyzed. The pooled complication rate as 0.87 (95% CI 0.52 – 1.46, *P*= 0.57, I^2 = 0%). The pooled mortality rate was 0.58 (95% CI 0.19–1.74, *P*-0.33, I^2 = 0%). The pooled gastric residuals was 1.75 (95% CI 0.99 – 3.09, *P* = 0.05, I^2 = 0%), with more gastric residuals in the early feeding group (Figure). Of note, one study found that hospital stay was significantly decreased in early feeding (27 vs 33 hours, *P*< .001).
Conclusion: This meta-analysis supports that the early feeding after PEG tube placement is as safe as delayed feeding and may shorten hospital stay.



[1587] **Figure 1.** Forest Plots

S1588 Presidential Poster Award

Pooled Efficacy Analysis of Tradipitant in Idiopathic and Diabetic Gastroparesis Study VP-VLY-686-3301 and VP-VLY-686-2301

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Introduction: Tradipitant is a novel NK-1 receptor antagonist studied in diabetic and idiopathic gastroparesis for short-term relief of nausea. This report presents the pooled analysis from 2 multicenter, randomized, double-blind, placebo-controlled studies (VP-VLY-686-3301 and VP-VLY-686-2301) assessing the efficacy of tradipitant in relieving symptoms of gastroparesis.
Methods: N=342 idiopathic and diabetic gastroparesis patients with delayed gastric emptying, moderate to severe nausea were included in the pooled ITT (Intent-to-Treat) population. Subjects were randomized to 85mg tradipitant twice a day (n=175) or placebo (n=167) and endpoints were assessed at Week 4. Nausea was assessed with the 5-point Gastroparesis Core Symptom Daily Diary (GCSDD). Overall gastroparesis symptom improvement was evaluated with the Patient Global Impression of Change (PGI-C) and Overall Patient Benefit (OPB) scales. Sensitivity analyses were performed to control for confounders.
Results: In a pooled analysis of double-blind subjects in the ITT population of Study 1 and Study 2, tradipitant demonstrated a clinically meaningful and statistically significant improvement in average nausea at week 4 (-1.15 for tradipitant v. -0.85 for placebo, P=0.0138). Significant improvement was seen in the number of nausea free days (20.96% improvement for tradipitant v. 12.52% for placebo, P=0.0085). Tradipitant also showed improvement in other gastroparesis symptoms as measured by the GCSI total score (-0.99 for tradipitant v. -0.76 for placebo, P=0.0265). Responder rates for PGI-C were 79.3% on tradipitant versus 69% on placebo at week 4 (P value = 0.036). For the Overall Patient Benefit, more patients improved on tradipitant versus placebo with 85.3% v. 71.2% at week 4 (P= 0.002). Sensitivity analysis adjusting for drug compliance confirmed the PK population (tradipitant blood levels ≥ 140ng/mL) in the pooled data set (n=284). In the pooled PK Population, tradipitant significantly improved average nausea at week 4 with -1.38 for tradipitant v. -0.85 for placebo (P=0.0001).
Conclusion: Pooling the data provided an opportunity to analyze a much larger data set, increase statistical power, and confirm results and subpopulations from the 2 separate studies. In the pooled analysis, we observed a clinically meaningful and significant effect on change of nausea severity at week 4. Improvements were also seen across core gastroparesis symptoms and overall measures of gastroparesis.

S1589 Presidential Poster Award

Effects of Surgical Pyloroplasty on Pyloric EndoFLIP Measurements and Gastric Emptying in Patients With Refractory Gastroparesis and Identification of Pyloric Sphincter Smooth Muscle Pathology

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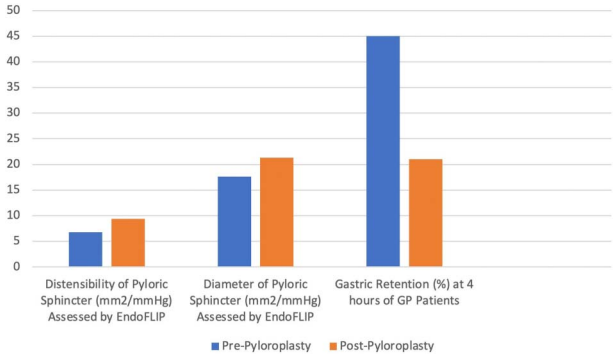
Introduction: Gastroparesis (GP) is defined as delayed gastric emptying in the absence of mechanical obstruction. While medical therapies of GP are the first step. 30% or more of patients may require surgical or endoscopic interventions if GP is refractory to medications. EndoFLIP (Endoluminal Functional Lumen Imaging Probe) provides real-time measurements of cross-sectional area, pressure, and distensibility of various gastrointestinal (GI) sites. However, there have been limited applications to the pyloric sphincter (PS) where EndoFLIP could provide crucial investigative data to help determine the pathophysiological characteristics of the PS in refractory GP patients. Our study investigated (1) the effects of surgical pyloroplasty (PP) on EndoFLIP and gastric emptying (GE) outcomes and (2) whether there is PS pathology by comparing the number of interstitial cells of Cajal (ICC) between GP and control patients.
Methods: Eight patients with refractory GP (mean age: 50.5) failing medical therapies underwent laparoscopic robotic PP accompanied by gastric stimulator placement. Pyloric EndoFLIP was performed before and after PP at an inflated volume of 50mL of saline. A scintigraphic gastric emptying assessment was performed before and during follow-up to assess changes in GE. At surgery, pyloric biopsies were obtained from these refractory GP patients and compared to 8 controls (non-GP autopsy specimens) regarding the number of ICC present per high power field (HPF). A T-test was used for the comparisons.
Results: Pre-PP pyloric distensibility and diameter at 50mL were 6.79 mm^2/mmHg and 17.6 mm^2/mmHg, respectively, with a mean pre-PP gastric retention of an isotope-labeled meal of 45% at 4 hours. Pyloric distensibility post-PP improved to 9.4 mm^2/mmHg (P=0.28) with a significant pyloric diameter increase to 21.3 mm^2/mmHg (P=0.05) (Figure). After PP, mean GE was 53% faster at 4 hours with gastric retention of 21% compared to the baseline. PS biopsy in GP patients had a mean ICC of 7.41 (SD: 2.3) per HPF, which was 36% lower than the ICC mean of 10.1 (SD:2.01) per HPF (P=0.09) present in the controls.

Conclusion: 1) Pyloric EndoFLIP is an important new modality providing real-time data about the effectiveness of PP in medication refractory GP patients. 2) Our EndoFLIP findings indicate a significant improvement of diameter post-PP accompanied by a marked acceleration of GE. 3) There is pathology of the pyloric smooth muscle in GP as shown by a reduction in the number of ICC compared to controls.



[1589] **Figure 1.** Measurements and comparisons of distensibility, diameter, and gastric retention pre and post-pyloroplasty using EndoFLIP

S1590 Presidential Poster Award

Gastroparesis Is Associated With More Psychiatric Disorders Than Functional Dyspepsia

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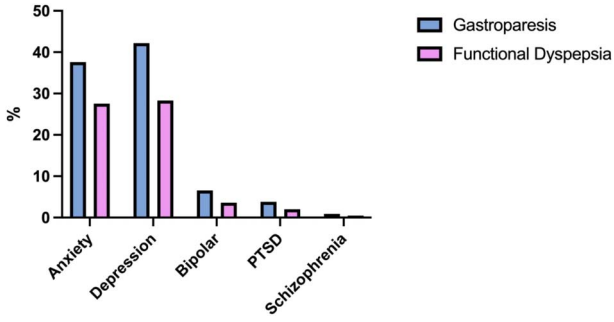
Introduction: Gastroparesis (GP) and functional dyspepsia (FD) consist of a similar spectrum of upper gastrointestinal disorders differentiated by delayed gastric emptying in GP. Both GP and FD are associated with significant psychiatric disorders, including anxiety and depression. The goal of the study was to compare the prevalence of psychiatric disorders and prescription of psychotropic medications between GP and FD.
Methods: A cohort analysis was performed using IBM Explorys database (1999-2022), which contained de-identified healthcare information from over 300 hospitals across the United States. Explorys included information regarding medications, diagnosis, and procedures. We selected adult patients who have completed a gastric emptying study in the past and further divide them into GP and FD cohort groups. Cyclical vomiting syndrome, psychoactive substance abuse, eating disorder, factitious disorder, chemotherapy, malignant tumor of esophagus and stomach, neoplasm of abdomen, gastric or intestinal obstruction, IBD, adhesion of intestine, carcinomatosis, perforation of intestine, Roux-en-Y gastrojejunostomy, and gastrectomy were excluded. Exclusion criteria of FD are the same as gastroparesis cohort with additional exclusion criteria: gastroparesis, gastrointestinal ulcer, brain neoplasm and pancreatitis. Psychiatric disorder diagnosis and psychotropic medications were collected. The number of patients and respective percentages were obtained. Odds ratios (OR) with 95% confidence interval were used to compare the cohorts.
Results: We identified 17570 patients with GP and 60230 patients with FD (Table). There was a higher prevalence of psychiatric disorders in GP compared with FD, including anxiety (37.62% vs 27.56%), depression (42.17% vs 28.32%), bipolar disorders (6.55% vs 3.62%), posttraumatic stress disorders (PTSD, 3.81 % vs 2.01%) and schizophrenia (0.91% vs 0.48%) (all P value < 0.0001) (Figure). A significant proportion of patients with GP and FD were on selective serotonin reuptake inhibitors (SSRI, 47.58% vs 34.19%) and benzodiazepines (BZ, 68.13 vs 55.24%). Psychotropic medications were more commonly prescribed for patients with GP than FD, including tricyclic antidepressants, SSRI, serotonin–norepinephrine reuptake inhibitor, Mirtazapine, Buspirone, antipsychotic agents and BZ (combined OR range 1.65-2.41, $P< 0.0001$).
Conclusion: GP is associated with more psychiatric disorders than FD. Psychotropic medications are more commonly prescribed for patients with GP compared with FD.



[1590] **Figure 1.** Comparison of Psychiatric Disorders In Gastroparesis and Functional Dyspepsia

Table 1. Psychiatric Disorders and Psychotropic Medications in Gastroparesis and Functional Dyspepsia

		Gastroparesis (N=17,570)	%	Functional dyspepsia (N=60,230)	%	OR	P
Psych	Anxiety	6610	37.62%	16600	27.56%	1.53-1.64	< 0.0001
	Depression	7410	42.17%	17060	28.32%	1.78-1.91	< 0.0001
	Bipolar	1150	6.55%	2180	3.62%	1.73-2.01	< 0.0001
	PTSD	670	3.81%	1210	2.01%	1.76-2.13	< 0.0001
	Schizophrenia	160	0.91%	290	0.48%	1.56-2.31	< 0.0001
Medication	TCA	3400	19.35%	7360	12.22%	1.65-1.80	< 0.0001
	SSRI	8360	47.58%	20590	34.19%	1.69-1.81	< 0.0001
	SNRI	3140	17.87%	6430	10.68%	1.74-1.91	< 0.0001
	Mirtazapine	1410	8.03%	2250	3.74%	2.10-2.41	< 0.0001
	Buspirone	1430	8.14%	2990	4.96%	1.59-1.81	< 0.0001
	Antipsychotic agents	5360	30.51%	10360	17.20%	2.03-2.20	< 0.0001
	Benzodiazepine	11970	68.13%	33270	55.24%	1.67-1.79	< 0.0001

S1591 Presidential Poster Award

The Epidemiology of Gastric Cancer in the United States: A Population-Based Study

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[1]Cleveland Clinic, Cleveland, OH; [2]Cleveland Clinic Foundation, Cleveland, OH; [3]Royal Jordanian Medical Services, Amman, Al Karak, Jordan; [4]Digestive Disease and Surgery Institute, Cleveland Clinic, Cleveland, OH.

Introduction: Gastric cancer is the third leading cause of cancer-related mortality in the world. Although various epidemiologic and clinical characteristics are reported to be associated with the development of gastric cancer, there are no large studies that demonstrate their relative risk of gastric malignancy. Our study describes the prevalence of gastric cancer in the US population and quantifies the risk factors associated with the development of gastric cancer.
Methods: We used a multi-institutional database (Explorys Inc, Cleveland, OH) which includes electronic health record data from 26 major integrated US healthcare systems. Based on Systematized Nomenclature of Medicine – Clinical Terms (SNOMED-CT), we identified all patients (age >18 years) with a diagnosis of primary malignant neoplasm of the stomach and compared them with individuals without a diagnosis of gastric cancer. Epidemiologic characteristics and risk factors for the development of gastric cancer were recorded for each group and compared. A univariate binary logistic model was constructed using gastric cancer as the dependent variable.
Results: Of the 70, 301,380 individuals in the database between 1999 to 2022, we identified 34,370 (0.04%) patients with primary malignant neoplasm of the stomach. Demographic characteristics such as elderly (>65 years), male gender, Asian, African American, and White races were at higher odds of gastric cancer when compared with controls ($P < 0.0001$). Risk factors such as hypertension, diabetes mellitus, obesity, coronary atherosclerosis, end-stage renal disease, cirrhosis, congestive heart failure, alcohol abuse, tobacco use, family history of gastrointestinal cancer, *H. pylori* infection, history of gastritis, history of gastric ulcer, history of pernicious anemia and history of chronic atrophic gastritis were all associated with higher odds of gastric cancer ($P < 0.0001$). Finally, patients with history of intestinal polyposis syndrome were more likely to have gastric cancer ($P = 0.0001$) (Table).
Conclusion: In our large cohort of patients with primary malignant neoplasm of the stomach, we demonstrate an increased association of gastric cancer with several epidemiological and clinical risk factors. In the absence of screening practices, our study can help guide decision-making and facilitate the early diagnosis of gastric cancer.

Table 1. Comparison of baseline characteristics and outcomes Primary malignant neoplasm of the stomach patients

	Gastric cancer n=34,370 (%)	No Gastric cancer n=70,306,690 (%)	OR (CI)	*P*-value
Demographics				
Age >65	24,160 (70%)	47,922,349 (68%)	1.11 (1.08-1.13)	< 0.0001
Male	20,780 (60%)	31,380,250 (45%)	1.89 (1.86-1.94)	< 0.0001
Caucasian	22,780 (66%)	37,812,540 (54%)	1.69 (1.65-1.73)	< 0.0001
African American	5,560 (16%)	7,014,930 (10%)	1.74 (1.69 to 1.79)	< 0.0001
Asian	1,430 (4%)	1,119,980 (2%)	2.68 (2.54 to 2.83)	< 0.0001
Comorbidities				
T2DM	9,570 (28%)	5,637,530 (8%)	4.43 (4.32-4.53)	< 0.0001
HTN	7,290 (21%)	3,493,560 (5%)	5.15 (5.02-5.28)	< 0.0001
Obesity	5,170 (15%)	5,431,330 (8%)	2.12 (2.05-2.18)	< 0.0001
Tobacco use	6,610 (2%)	6,481,490 (9%)	2.35 (2.28-2.41)	< 0.0001
Cirrhosis	7,290 (21%)	3,493,500 (5%)	5.15 (5.02-5.28)	< 0.0001
Coronary atherosclerosis	8,920 (26%)	3,724,220 (5%)	6.27 (6.12-6.42)	< 0.0001
CHF	5,030 (15%)	1,829,140 (3%)	6.42 (6.23-6.61)	< 0.0001
ESRD	910 (3%)	416,780 (1%)	4.56 (4.27-4.87)	< 0.0001
Alcohol abuse	1,500 (4%)	1,088,380 (2%)	2.87 (2.73-3.02)	< 0.0001
Risk factors of Gastric cancer				
Family history of GI cancer	1,880 (6%)	593,480 (1%)	6.79 (6.49-7.12)	< 0.0001
H. pylori infection	430 (1%)	92,720 (0.13%)	9.59 (8.72-10.55)	< 0.0001
History of gastritis	9,520 (28%)	3,322,240 (5%)	7.72 (7.54-7.91)	< 0.0001
History of gastric ulcer	4,580 (13%)	354,050 (1%)	30.38 (29.44-31.34)	< 0.0001
History of pernicious anemia	680 (2%)	81,310 (0.12%)	17.43 (16.15-18.81)	< 0.0001
History of chronic atrophic gastritis	2,380 (7%)	261,220 (0.4%)	19.95 (19.13-20.80)	< 0.0001
History of intestinal polyposis syndrome	10 (0.03%)	6,060 (0.01%)	3.38 (1.82-6.28)	= 0.0001

Univariate analysis used to calculate OR, OR; odds ratio, CI; confidence interval, T2DM; type 2 diabetes mellitus, HTN; Hypertension, ESRD; end stage renal disease, CHF; congestive heart failure. GI; Gastrointestinal.

S1592

Efficacy Analysis of Tradipitant in Idiopathic and Diabetic Gastroparesis in Study VP-VLY-686-3301

Jesse L. Carlin, PhD, Christos Polymeropoulos, MD, Michaela Fisher, BS, Darby Madonick, BA, Caleigh Kupersmith, BA, Paula Moszczynski, MS, Changfu Xiao, PhD, Gunther Birznieks, MS, Mihael H. Polymeropoulos, MD.
Vanda Pharmaceuticals, Inc., Washington, DC.

Introduction: This report presents the results of a multicenter, randomized, double-blind, placebo-controlled phase 3 study (VP-VLY-686-3301) assessing the efficacy of tradipitant, a novel NK-1 receptor antagonist, in relieving symptoms of gastroparesis.
Methods: N=201 idiopathic and diabetic gastroparesis patients with delayed gastric emptying, moderate to severe nausea, and at least 1 vomiting episode were included in the ITT (Intent-to-Treat) population. Subjects were randomized to 85 mg tradipitant twice a day (n=102) or placebo (n=99) for 12 weeks. Nausea was assessed using a 5-point Gastroparesis Core Symptom Daily Diary (GCSDD). Overall gastroparesis symptom improvement was evaluated using the Patient Global Impression of Change (PGI-C) and the Overall Patient Benefit (OPB) scales. Sensitivity analyses were performed to control for confounders that may have masked true treatment effect size.
Results: At the primary endpoint of change in nausea from baseline as measured by the GCSDD at week 12, both tradipitant and placebo showed significant and similar reductions from baseline at 1.55 and 1.49 respectivelyand did not reach statistical significance. However, in the PGI-C scale, more tradipitant treated patients demonstrated response as compared to placebo both at week 2 (74% v. 58%, $P=0.019$) and at week 12 (78% v. 66%, $P=0.065$). Similarly, in the OPB scale, more tradipitant treated patients demonstrated response as compared to placebo both at week 2 (81% v. 62%, $P=0.0003$) and week 12 (86% v. 71%, $P=0.011$). Sensitivity analysis adjusting for PK compliance, rescue medication use, and baseline severity inflation further confirmed the ITT findings in both the PGI-C and OPB analysis at both week 2 and week 12. The large placebo effect observed may have been driven by Baseline Severity Inflation (BSI) especially on parameters which patients are selected for inclusion into the study. Tradipitant treatment in the BSI analysis subpopulation resulted in improvements in Nausea, PGI-C, and OPB Score both the earliest (Week 2) and last (Week 12) timepoints.

Conclusion: Significant but similar improvements from baseline for tradipitant and placebo may have masked the true treatment effect size at the primary endpoint of the study of change in nausea severity as measured by daily diary at week 12 leading to no statistically significant difference between treatments.

S1593 Outstanding Research Award in the Stomach Category (Trainee)
Presidential Poster Award

Does Aortic Stenosis Impact the Prevalence and Outcomes of Gastric Antral Vascular Ectasia? A Retrospective Study of 85,000 Patients

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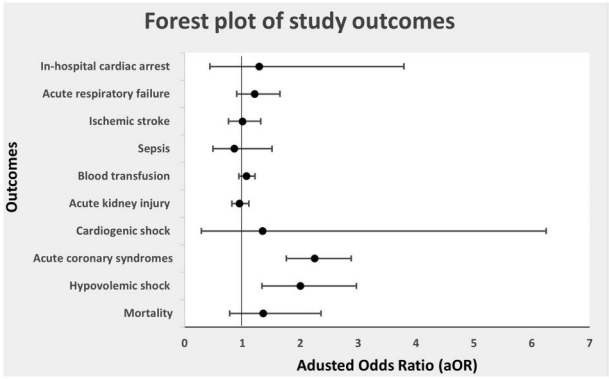
Introduction: While Aortic stenosis (AS) is associated with gastrointestinal arteriovenous malformations, it's association with Gastric Antral Vascular Ectasia (GAVE), as a rare cause of upper gastrointestinal bleeding (UGIB), remain unknown. Therefore, authors aim to investigate outcomes of hospitalized GAVE patients in the setting of AS, in terms of mortality and in-hospital complications.
Methods: Using *International Classification of Diseases Tenth Revision (ICD-10)* codes, the National Inpatient Sample database of the years 2016 through 2019 was searched for patients admitted with a primary diagnosis of GAVE, with and without history of AS. Univariate and Multivariate logistic regression analysis was performed to determine the risk of mortality and in-hospital complications in GAVE/AS group compared to GAVE-only group. Patients and facilities characteristics, as well as comorbidities, were incorporated into the analysis.
Results: Among 85,090 adults' patients were hospitalized with a primary diagnosis of GAVE from 2016 - 2019, 5315 (6.2%) had a secondary diagnosis of AS. Patients baseline characteristics are listed in the Table. Patients with AS had a 2-folds increase in risk of GAVE (OR 2.08, 95% CI 1.94 – 2.22, $P< 0.001$), with no difference in inpatient mortality between the study groups (OR 1.36, 95% CI 0.78 – 2.36, $P=0.268$). GAVE-AS patients had higher risk of hypovolemic shock (OR 2.00, 95% CI 1.34 – 2.97, $P= 0.001$), acute coronary syndromes (OR 2.25, 95% CI 1.76 – 2.88, $P< 0.001$) with no difference in risk of cardiogenic shock (OR 1.35, 95% CI 0.29 – 6.25, $P= 0.695$), acute kidney injury (OR 0.95, 95% CI 0.82 – 1.11, $P= 0.550$), blood transfusion (OR 1.07, 95% CI 0.94 – 1.22, $P= 0.270$), sepsis (OR 0.86, 95% CI 0.49 – 1.51, $P= 0.598$), ischemic stroke (OR 1.00, 95% CI 0.76 – 1.32, $P=0.981$), respiratory failure (OR 1.21, 95% CI 0.90 – 1.65, $P= 0.200$) or in-hospital cardiac arrest (OR 1.29, 95% CI 0.44 – 3.79, $P= 0.638$). Cost of care in GAVE-AS patients was increased by a mean of 4729$ (95% CI 694– 8764, $P= 0.022$), with no increase in length of stay (95% CI -0.13 – 0.42, $P=0.320$) when compared to GAVE-only patients (Figure).
Conclusion: Our study is a first to demonstrate that patients with history of AS have 2-fold increase in risk of development of GAVE. Admitted GAVE-AS patients are at increased risk of hypovolemic shock, acute coronary syndrome and higher resources utilization when compared to GAVE-only patients.



[1593] **Figure 1.** Forest plot of outcomes in patient hospitalized for GAVE with history of AS

Table 1. Baseline characteristics of GAVE hospitalizations stratified by presence or absence of AS

Variable	GAVE %, NO.	WITHOUT AS %, NO.	WITH AS %, NO.	P value
	(100.0) 85,090	(93.8) 79,775	(6.2) 5315	
Patient's characteristics				
Age, mean years	73.0	72.6	78.0	< 0.001
Female	52.0 (44247)	52.0 (41483)	51.0 (2711)	0.652
Racial distribution				< 0.001
White	70.0 (59563)	69.0 (55045)	81.0 (4305)	
Black	18.0 (15316)	19.0 (15157)	18.0 (957)	
Hispanic	7.00 (5956)	8.00 (6382)	8.00 (425)	
Others	2.00 (1702)	2.00 (1596)	2.00 (106)	
Insurance type				< 0.001
Medicaid	81.0 (68923)	81.0 (64618)	91.0 (4837)	
Medicare	6.00 (5105)	6.00 (4787)	2.00 (106)	
Private	12.0 (10211)	12.0 (9573)	6.00 (319)	
Uninsured	1.00 (851)	1.00 (798)	1.00 (53)	
Charlson comorbidity index score				0.036
1	13.0 (11062)	13.0 (10371)	12.0 (638)	
2	15.0 (12764)	15.0 (11966)	16.0 (850)	
≥3	65.0 (55309)	65.0 (51854)	67.0 (3561)	
Median annual income, us$				< 0.001
1–43,999	30.0 (25527)	31.0 (24730)	25.0 (1329)	
44,000–55,999	26.0 (22123)	26.0 (20742)	26.0 (1382)	
56,000–73,999	24.0 (20422)	24.0 (19146)	27.0 (1435)	
≥74,000	19.0 (16167)	19.0 (15157)	23.0 (1222)	
Hospital characteristics				

Table 1. (*continued*)

Variable	GAVE %, NO.	WITHOUT AS %, NO.	WITH AS %, NO.	P value
Hospital region				< 0.001
Northeast	21.0 (17869)	21.0 (16753)	25.0 (1329)	
Midwest	26.0 (22123)	26.0 (20742)	26.0 (1382)	
South	39.0 (33185)	40.0 (31910)	33.0 (1754)	
West	14.0 (11913)	14.0 (11169)	17.0 (904)	
Hospital bed size				0.001
Small	17.0 (14465)	17.0 (13562)	20.0 (1063)	
Medium	29.0 (24676)	29.0 (23135)	32.0 (1701)	
Large	53.0 (45098)	54.0 (43079)	48.0 (2551)	
Hospital location				0.282
Rural location	5.00 (4255)	5.00 (3989)	4.00 (213)	
Urban location	22.0 (18720)	22.0 (17551)	20.0 (1063)	
Teaching hospital	74.0 (62967)	73.0 (58236)	76.0 (4039)	0.039
Comorbidities				
Hypertension	31.0 (26378)	31.0 (24730)	28.0 (1488)	0.033
Diabetes mellitus	44.0 (37440)	44.0 (35101)	47.0 (2498)	0.074
Smoking history	50.0 (42545)	49.0 (39090)	54.0 (2870)	0.002
Hyperlipidemia	52.0 (44247)	52.0 (41483)	63.0 (3348)	< 0.001
Obesity	15.0 (12764)	15.0 (11966)	16.0 (850)	0.280
Chronic kidney disease	44.0 (37440)	44.0 (35101)	46.0 (2445)	0.162
Coronary artery disease	45.0 (38291)	44.0 (35101)	59.0 (2445)	< 0.001
Chronic obstructive lung disease	30.0 (25527)	30.0 (23933)	34.0 (1807)	0.004
Chronic liver disease	20.0 (17018)	21.0 (16753)	14.0 (744)	< 0.001

GAVE=gastric antral vascular ectasia, AS=Aortic Stenosis.

S1594 ACG/Radhika Srinivasan Gender-Based Research Award Presidential Poster Award

Females May Be at Higher Risk of Severe and Dysplastic Fundic Gland Polyposis: An 844-Patient Analysis

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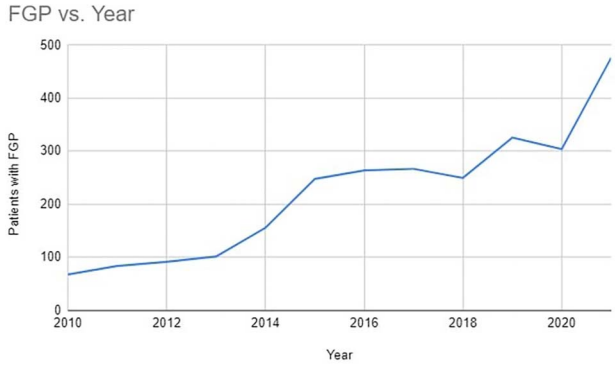
Introduction: The risk of gastric cancer is increasing in the western world for unknown reasons. Fundic gland polyps (FGP) are common. In many cases, the burden of gastric polyps is high making management challenging and causing anxiety among patients. We compared patients with and without FGP to determine potential risk factors associated with severe FGP.
Methods: In this retrospective, single-center study, all patients with a diagnosis of histologically confirmed fundic gland polyps between January 1, 2021, and December 31, 2021 were included. Controls were defined as patients without FGP during an upper endoscopy, selected randomly in a ratio of 1:1 to cases. Cases and controls were identified by using a specialized text-based search of the pathology and endoscopy reporting software. Upper endoscopies done for suspected or established reflux and/or dyspepsia were included. A structured RedCap electronic database was created to systematically abstract data about demographics, endoscopies, and histology. Severe FGP was defined by the presence of endoscopic descriptors such as "innumerable", "diffuse", "numerous", "many", " >50 polyps" etc., and confirmed by endoscopic pictures. Patients with a known inherited gastrointestinal syndrome were excluded. Multivariate logistic regression was performed.
Results: The prevalence of FGP has increased over the past decade (Figure). Eight hundred and forty-4 patients (422 with FGP and 422 without FGP) were included (68% female, mean age 56, SD 15.4 years). Increasing age (1.02 (1.01, 1.04)) and >2 years of PPI use [3.01 (1.84, 4.98)] were associated with increased risk of FGP; all $P < .05$ (Table). Of the 422 patients with FGP; 95.5% had mild polyposis and 4.5% had severe polyposis. Most of the patients with moderate to severe polyposis were post-menopausal females (87.5%). Low-grade dysplasia (LGD) within FGP was found in 25 (5.5%) patients (77% were female) and high-grade dysplasia (HGD) within FGP was found in 5 (1.1%) patients (80% were female).
Conclusion: Longer than 2 years of PPI use is associated with FGP. Post-menopausal females were at the highest risk for severe polyposis. Further research into long-term outcomes is needed to determine which patients could benefit from surveillance.



[1594] **Figure 1.** Temporal trends of fundic gland polyps

Table 1.

	Control (N = 422)	Cohort (N = 422)	Total (N = 844)	*P*-value
Age, Mean (SD)	53.3 (16.6)	58.8 (13.8)	56.1 (15.5)	< 0.01
Sex, Male (%)	148 (35)	126 (30)	274 (32.5)	0.13
PPI, Use (%)	243 (57.6)	316 (75.2)	559 (66.8)	< 0.01
Smoking (%)				< 0.01
Current	54 (12.8)	12 (2.9)	66 (7.8)	
Former	141 (33.4)	122 (29)	263 (31.2)	
Never	227 (53.8)	286 (68)	513 (60.9)	
HRT, Use (%)	184 (43.5)	216 (51.3)	400 (47.7)	0.03
Alcohol use (%)	312 (95.7)	271 (94.7)	583 (95.1)	0.59
Calcium use (%)	358 (84.6)	336 (79.8)	694 (82.2)	0.09
Vit. D use (%)	173 (41)	192 (45.8)	65 (43.4)	0.18
PPI Length (%)				< 0.01
< 1 year	63 (24.1)	40 (11.6)	103 (17)	
1-2 years	35 (13.4)	31 (8.7)	66 (10.9)	
³ 2 years	163 (62.4)	273 (79.4)	436 (72)	
PPI Dose, Mean (SD)	46.6 (22.2)	40.9 (18.9)	43.4 (20.6)	< 0.01

All percentages are based on the total non-missing sample for that variable.
P-values are based on t-tests for continuous variables, tests of proportions of dichotomous variables and chi-square tests for categorical variables with more than 2 categories.

S1595

Misdiagnosis of Gastroparesis Is Common: A Retrospective Review of Patients Referred to a Tertiary Gastroenterology Practice for Gastroparesis

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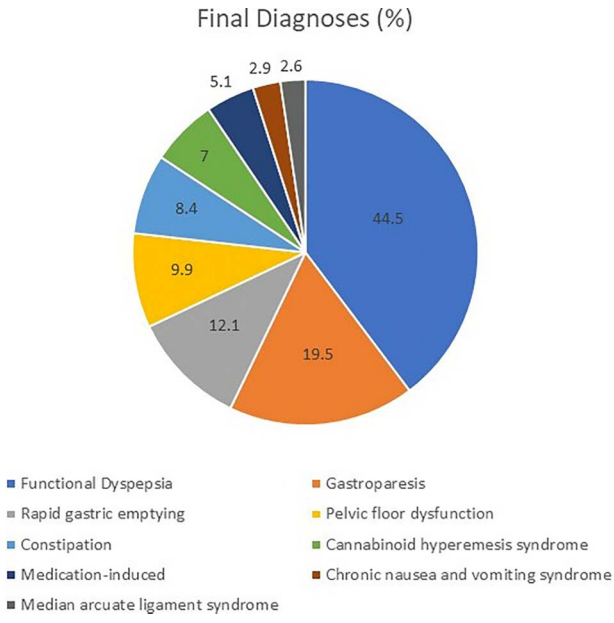
Introduction: Gastroparesis (GP) is a disorder defined by delayed gastric emptying, though diagnosing GP can be challenging for many clinicians. There is a paucity of data describing diagnostic outcomes of patients referred to a tertiary gastroenterology (GI) practice for GP. We hypothesize that the majority of patients referred for GP ultimately receive alternative diagnoses, namely functional dyspepsia (FD).
Methods: A retrospective cohort population consisting of adult patients (18-90 years old) who were referred to Mayo Clinic Florida for the evaluation of GP between January 2019 and July 2021 was reviewed. Basic demographic information, medical comorbidities, medications, diagnostic tests, and labs were collected. A final diagnosis was determined by review of clinical notes and tests by experts in the field (BEL, DJC). Continuous variables were summarized with median and range, and categorical variables were summarized with frequency and percentage. Differences between misdiagnoses and correct diagnoses of GP were evaluated using the Kruskal-Wallis Rank Sum test for continuous measures and the Fisher Exact test for categorical measures.
Results: 339 patients were evaluated; the mean age was 46 [range: 18-90]; 278 (82%) were female. Overall, 66 (19.5%) patients were diagnosed with GP after evaluation, whereas 273 (80.5%) patients received an alternative diagnosis (Figure); 151 (44.5%) were diagnosed with FD. Compared to GP patients, patients with alternative diagnoses were significantly younger [median age 44 vs 52, $P=0.001$] and had significantly lower median BMI [median 24.9 vs 28.5, $P=0.017$; Table]. Patients correctly diagnosed with GP were more often diabetic [40% vs 17.2%, $P < 0.001$), had Barrett's esophagus [12.1% vs 4.8%, $P=0.042$], had undergone cholecystectomy [56.1% vs 37.7%, $P=0.008$], appendectomy [24.2% vs 13.6%, $P=0.038$] or fundoplication [13.6% vs 5.1%, $P=0.025$], were taking a PPI [71.2% vs 48.7%, $P< 0.001$], were less likely to use cannabis [9.1% vs 22.1%, $P=0.034$], and more often had retained food in the stomach on upper endoscopy [22.7% vs 8.8%, $P=0.004$]. There was no difference in GI symptoms on presentation between the patient groups.
Conclusion: The vast majority of patients referred to a tertiary GI practice for evaluation of GP receive alternative diagnoses, most commonly FD. Presenting GI symptoms do not distinguish GP from alternative diagnoses, though a prior surgical history and findings of retained food on upper endoscopy may help predict a true diagnosis of GP.



[1595] **Figure 1.** Final Diagnoses Among Patients Referred for Evaluation of Gastroparesis

Table 1. Demographics and Relevant Historical Data of Patients Referred for Evaluation of Gastroparesis

	Misdiagnosis (N=273)	Gastroparesis (N=66)	Total (N=339)	*P*-value
Age				0.001
Median (Range)	44.00 (18-83)	52.00 (18-90)	46.00 (18-90)	
BMI				0.017
Median (Range)	24.89 (13.1-51.3)	28.52 (15.7-42.8)	25.34 (13.1-51.3)	
Sex				1.000
Female	224 (82.1%)	54 (81.8%)	278 (82.0%)	
Male	49 (17.9%)	12 (18.2%)	61 (18.0%)	
Race				0.842
White	231 (85.6%)	57 (87.7%)	288 (86.0%)	
Non-White	39 (14.4%)	8 (12.3%)	47 (14.0%)	
Diabetes				< 0.001
Type I	18 (6.7%)	11 (16.9%)	29 (8.7%)	
Type II	28 (10.5%)	15 (23.1%)	43 (13.0%)	
GERD	195 (71.4%)	48 (72.7%)	243 (71.7%)	0.880
Barret's Esophagus	13 (4.8%)	8 (12.1%)	21 (6.2%)	0.042
H.pylori	17 (6.2%)	2 (3.0%)	19 (5.6%)	0.549
Depression	110 (40.4%)	21 (31.8%)	131 (38.8%)	0.208
Anxiety	157 (57.5%)	36 (54.5%)	193 (56.9%)	0.680
Cholecystectomy	103 (37.7%)	37 (56.1%)	140 (41.3%)	0.008
Fundoplication	14 (5.1%)	9 (13.6%)	23 (6.8%)	0.025
Appendectomy	37 (13.6%)	16 (24.2%)	53 (15.6%)	0.038
PPI	133 (48.7%)	47 (71.2%)	180 (53.1%)	< 0.001
NSAIDs	50 (18.4%)	11 (16.7%)	61 (18.0%)	0.859
Opioids	41 (15.0%)	8 (12.1%)	49 (14.5%)	0.697
Cannabis use (current)	59 (21.7%)	6 (9.1%)	65 (19.2%)	0.034
Alcohol use (current)	103 (37.7%)	19 (28.8%)	122 (36.0%)	0.256
Tobacco use (current)	37 (13.6%)	4 (6.1%)	41 (12.1%)	0.241
Nausea	241 (88.3%)	61 (92.4%)	302 (89.1%)	0.388
Vomiting	174 (63.7%)	49 (74.2%)	223 (65.8%)	0.114
Satiety	98 (35.9%)	19 (28.8%)	117 (34.5%)	0.314
Abdominal pain	209 (76.6%)	50 (75.8%)	259 (76.4%)	0.873
Bloating	104 (38.1%)	23 (34.8%)	127 (37.5%)	0.672
Prior EGD Normal	107 (39.2%)	21 (31.8%)	128 (37.8%)	0.322
Retained Food on Prior EGD	24 (8.8%)	15 (22.7%)	39 (11.5%)	0.004

S1596

Immune Checkpoint-Inhibitors Are Associated With a Higher Risk of Gastritis: A Nationwide Population-Wide Study

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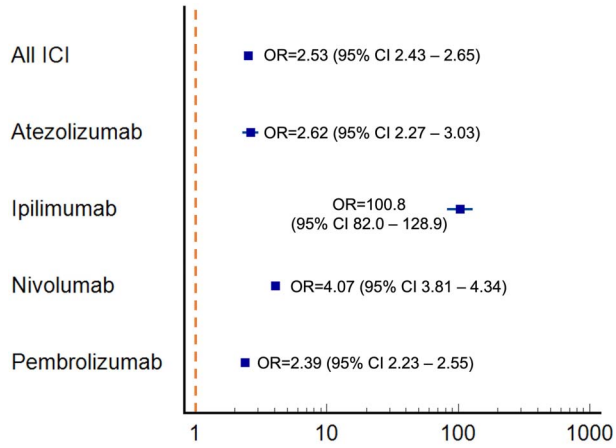
Introduction: Immune checkpoint-inhibitors (ICIs) improve the survival in certain cancers. Side effects of ICIs might limit its use, and little is known about gastric toxicity. Accordingly, we used a large database to investigate the epidemiology of ICI-induced gastritis and describe underlying associations.
Methods: A multi-institutional database (Explorys Inc, Cleveland, OH, USA), an aggregate of electronic health record data from 26 US healthcare systems was surveyed. A cohort of patients who were on ICIs (atezolizumab, ipilimumab, nivolumab and pembrolizumab) between 2011 and 2022 was identified. Subsequently, patients who developed new Systematized Nomenclature of Medicine-Clinical Terms diagnosis of gastritis after taking ICIs were selected. The prevalence of ICI-induced gastritis was calculated, and underlying associations were described.
Results: Of more than 70 million patients in the database, we identified 20,200 (0.03%) with history of ICI use (Table). There were 2260 (11.2%) patients who developed a new diagnosis of ICI-induced gastritis after at least 1 day of starting ICI therapy. Patients who developed ICI-induced gastritis were more likely to be female [OR: 1.18; 95% CI 1.08–1.29] and more likely to be White [OR: 1.27; 95% CI 1.12–1.44] compared to all the patients who took ICIs and didn't develop gastritis. There were no statistically significant age-based differences. Overall, patients who received any ICI had a significantly higher risk of gastritis compared to the general population [OR: 2.53; 95% CI 2.43–2.65]. Patients who received ipilimumab had the highest odds of developing ICI-induced gastritis (Figure).
Conclusion: In this large retrospective study, we found that patients taking ICI have a higher risk of gastritis compared to the general population. In particular, Ipilimumab is associated with a disproportionally high risk of gastritis. The risk of gastritis should be discussed with all patients prior to initiating an ICI, as it may be a factor in choosing among ICIs.



[1596] **Figure 1.** Odd Ratio with 95% Confidence Interval of Immune Checkpoint Inhibitor-Induced gastritis

Table 1. Baseline Characteristics of Patients Receiving ICIs

Variable	Patients who received ICI		Patients with Gastritis who did not receive ICI
	ICI without Gastritis	ICI-Induced Gastritis	
Age			
18 -65	5,670 (38%)	830 (37%)	2,084,920 (63%)
>65	9,380 (63%)	1,450 (64%)	1,233,140 (37%)
Female	6,140 (41%)	130 (50%)	2,024,260 (61%)
Race			
Caucasian	12,460 (83%)	1,950 (86%)	2,358,850 (71%)
Others	2,510 (17%)	310 (14%)	974,020 (29%)
Co-morbidities:			
Hypertension	10,370 (69%)	1,760 (78%)	1,683,440 (51%)
T2DM	4,060 (27%)	750 (33%)	746,180 (22%)
Hyperlipidemia	8,700 (58%)	1,550 (69%)	1,479,420 (44%)
Obesity	3,180 (21%)	670 (30%)	814,320 (24%)
CAD	4,250 (28%)	770 (34%)	561,050 (17%)
GERD	5,210 (35%)	1,240 (55%)	1,451,590 (44%)

T2DM; type 2 diabetes mellitus, CAD; coronary artery disease, GERD; gastro-esophageal reflux disease.

S1597

Modeling Gastric Luminal Rifabutin Concentrations: RHB-105 (Rifabutin 50 mg Q8H) Provides More Favorable Exposure for *Helicobacter pylori* Eradication Than Generic Rifabutin 150 mg BID or 300 mg QD

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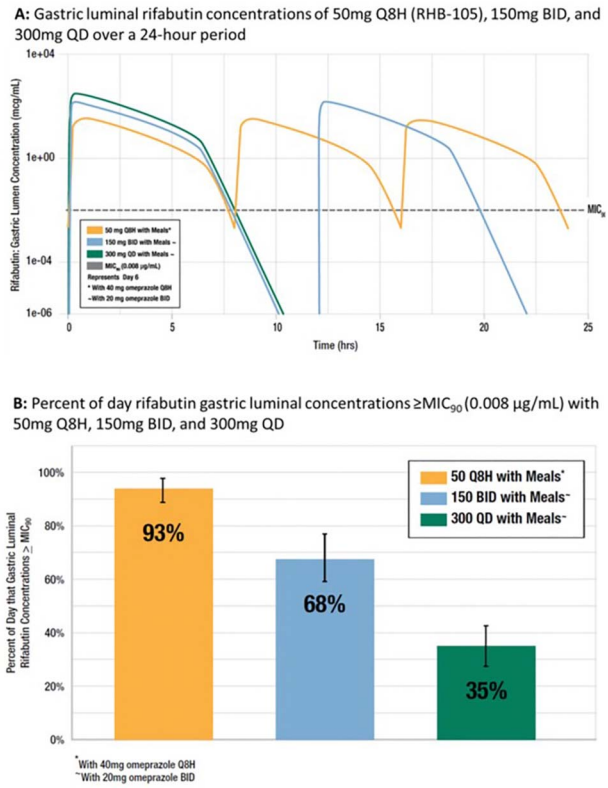
Introduction: *Helicobacter pylori* infection is a major risk factor for peptic ulcer and gastric cancer. Since the infection is predominantly extracellular, achieving and maintaining gastric luminal antibiotic concentrations above the relevant MIC_{90} for *H. pylori* are important for successful eradication. RHB-105 is administered as 50mg rifabutin, 1000mg amoxicillin, and 40mg omeprazole, each dosed Q8H for 14 days. In 2 phase 3 clinical trials (NCT03198507/ NCT01980095), eradication rates were 89.4% (modified intention-to-treat) and 90.3% (in confirmed adherent subjects), respectively. In physiologically-based pharmacokinetic (PBPK) modeling, 50mg rifabutin Q8H provided ~3-fold longer time when gastric luminal concentration exceeded its MIC_{90} (~93% of the day) compared to 150mg QD (~35% of the day). We have now applied this modeling to assess gastric luminal rifabutin concentrations with higher dose generic rifabutin regimens.
Methods: Plasma rifabutin pharmacokinetic (PK) data were obtained from published literature and clinical RHB-105 PK data. Chemical, biological, and formulation properties were obtained from literature or were calculated. The remaining parameters were estimated by fitting model predictions to a subset of the plasma PK data. The model was then used to simulate steady state gastric luminal rifabutin concentrations when dosed at 150mg BID or 300mg QD (each with omeprazole 20mg BID), compared to RHB-105, to predict the time above rifabutin's MIC_{90} for *H. pylori* (0.008 μg/ml).
Results: Time with gastric luminal concentration above MIC_{90} was 16.32±2.25 h for rifabutin 150mg BID (68% of day), and 8.51±1.86 h (35% of the day) for 300mg QD. Although both generic regimens contain twice the daily dose of rifabutin than RHB-105, both failed to achieve the prolonged gastric luminal rifabutin concentration time (22.25±1.08 h; 93% of the day) seen with RHB-105 (50mg Q8H; Figure).
Conclusion: We previously showed that rifabutin 50mg Q8H (as in RHB-105) maintains gastric luminal concentrations above the MIC_{90} nearly 3-times longer than 150mg QD. The current analysis further demonstrates that rifabutin dosed at 50mg Q8H provides more prolonged gastric luminal exposure (93% of the day) than dosing at 150mg BID (68% of the day) or 300mg QD (35% of the day). Rifabutin dosed 50mg Q8H (as in RHB-105) avoids unnecessarily high rifabutin doses that provide shorter periods of gastric luminal rifabutin exposure for successful *H. pylori* eradication.



[1597] **Figure 1.** Intragastric Rifabutin Concentration over 24 Hours with 50mg Q8H (RHB-105), 150mg BID and 300 mg QD

S1598

Inpatient Mortality of PEG Tube Placement in High-Risk Patients

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Introduction: Percutaneous endoscopic gastrostomy (PEG) tubes are used as access for long-term enteral feedings in many clinical situations. Some are predisposed to poorer clinical outcomes especially in high in-house mortality. The purpose of this investigation was to use a nationwide sample of inpatients with PEG tubes to identify comorbidities associated with in-hospital mortality.
Methods: We conducted a retrospective cohort study identifying patients with PEG tube placement registered in the Nationwide Inpatient Sample (NIS) database from 2009-2014. Patient records with ICD-9-CM code for PEG placement were identified. The Elixhauser Comorbidity Index (ECI) was applied to each patient record to group patients by the Index's common comorbidities. Demographic analysis included age, race, sex, income, and hospital. Frequently associated diagnoses in the records were identified and used as proxy to suggest PEG tube placement purpose.
Results: 1,087,994 patients with PEG tube placement were examined. The mean age was 67.7 years. Fifty-4 percent were male, and 46% were female. 51% presented to urban non-teaching institutions, 43% to urban teaching institutions, and 6% to rural institutions. The majority of patients were identified as White (63%). Common diagnoses, aside from PEG tube placement, included neurologic infarct or hemorrhage (25.8%), hearing loss (14.7%), food/vomit pneumonitis (11.6%), acute respiratory failure (5.4%), acute kidney failure (3.7%), pneumonia (2.6%), UTI (2.4%), dysphagia (1.9%), and dehydration (1.9%). Respiratory failure (OR 3.3, $P< .0001$), kidney failure (1.87, $P < .0001$), and food/vomit pneumonitis (OR 1.5, $P< 0.0001$) were most highly associated with mortality on adjusted multivariate logistic regression analysis. Using the ECI, inpatient mortality was significantly increased for patients with concomitant congestive heart failure (OR 1.68, $P< 0.0001$), pulmonary circulation disease (1.60, $P< 0.0001$), renal failure (1.63, $P< 0.0001$), liver disease (1.46, $P< 0.0001$), metastatic cancer (1.48, $P< 0.0001$), and coagulopathy (1.80, $P< 0.0001$).
Conclusion: The results indicate that individual organ failure portends a worse prognosis in patients undergoing PEG tube placement with high inpatient mortality. Isolated CVA does not appear to be an independent risk for high inpatient mortality. Thus, a robust informed consent process is required in the presence of one or more organ system failure. Further research may better correlate these comorbidities with longer-term outcomes.

S1599

Diagnostic Performance of Linked Color Image (LCI) and Blue Laser Imaging (BLI) for the Diagnosis of Early Gastric Cancer: A Systematic Review and Meta-Analysis

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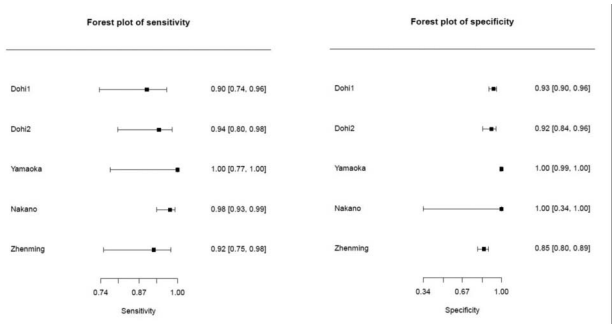
Introduction: Overall prognosis of gastric cancer (GC) remains poor in the United States, and this may be because GCs are not diagnosed at an early stage where curative therapeutic options are available. Esophagogastroduodenoscopy (EGD) is the gold standard diagnostic tool; however, it is often difficult to detect early GC even with high definition while light (HDWL) imaging because of its subtle mucosal changes seen on early neoplastic changes in the stomach. Using a combination of an optimal light spectrum with advanced signal/image processing and high-intensity contrast imaging allows for superior visualization of superficial vascular and mucosal patterns than HDWL imaging. Such newer generation image-enhanced endoscopy systems with linked color image (LCI) and blue laser imaging (BLI) has been reported to improve the visibility of superficial neoplastic changes in the stomach. We aimed to conduct a systematic review and meta-analysis to evaluate the diagnostic utility of LCI and BLI for detecting early GC.
Methods: Electronic literature search was conducted from inception through May 2022 for articles reporting the diagnostic yield of LCI or BLI for the diagnosis of early GC. The primary outcome of interest was sensitivity and specificity, and we calculated the proportion of patients who met the outcomes of interest in each study. In the meta-analysis, outcomes were documented by weighted pooled rates with 95% confidence intervals (CI) and corresponding forest plots were constructed. They were analyzed using a random-effect model.
Results: Five studies reporting the outcomes on a total of 1296 patients (mean age 68.5 years) were included in the final analysis. Pooled estimated rate of sensitivity and specificity of LCI or BLI in the diagnosis of early GC were 95.8 % (95% CI 88.9-98.5) and 97.8% (95% CI 84.2-99.7%), respectively (Figure). The diagnostic accuracy was also favorably high (range 86.0-97.5%).
Conclusion: The results of our meta-analysis demonstrated that LCI and BLI are highly sensitive and specific in the diagnosis of early GC. With higher diagnostic performance profiles, LCI and BLI are promising as a screening endoscopic modality for early GC. Further studies in a larger number of patients are warranted to validate the diagnostic performance of LCI and BLI in screening population.



[1599] **Figure 1.** Sensitivity and Specificity for the Diagnosis of Early Gastric Cancer (Forest Plot)

S1600

Demographic Comparison of Gastroparesis and Functional Dyspepsia

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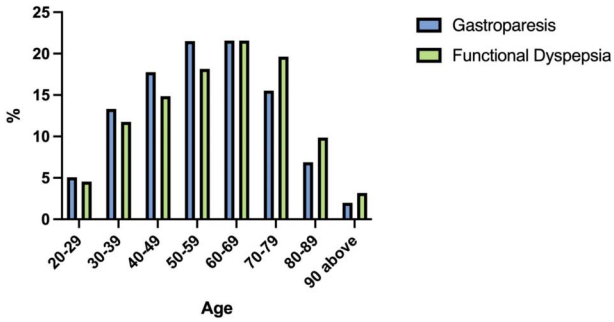
Introduction: Gastroparesis (GP) and functional dyspepsia (FD) are a similar spectrum of upper gastrointestinal disorders. There is a lack of large-scale studies to compare the epidemiology of GP and FD. The goal of the study was to delineate the demographic information of GP and FD using a large deidentified database in the US.
Methods: Patients who had gastric emptying studies from January 1999 to April 2022 were identified using the nationwide database IBM Explorys. Those patients were further divided into GP and FD cohorts. Exclusion criteria for GP are cyclical vomiting syndrome, psychoactive substance abuse, eating disorder, factitious disorder, chemotherapy, malignant tumor of esophagus and stomach, neoplasm of abdomen, gastric or intestinal obstruction, IBD, adhesion of intestine, carcinomatosis, perforation of intestine, Roux-en-Y gastrojejunostomy, and gastrectomy. Exclusion criteria of FD are the same as gastroparesis cohort with additional exclusion criteria: gastroparesis, gastrointestinal ulcer, brain neoplasm and pancreatitis. Demographic information, comorbidities and gastrointestinal symptoms were collected. Number of patients were obtained. Chi square tests and odds ratios (OR) with a 95% confidence interval were used to compare the cohorts.
Results: A total of 157,650 adult patients had completed gastric emptying study. Among those patients, a total of 17570 (11%) patients fulfilled the criteria of GP and 60230 (38%) patients were included into the FD cohort (Table). From age 20-69, the prevalence of GP and FD increased with age; however, the prevalence of GP and FD decreased with age for patients who were age 70 and above (Figure). In the younger age group from 20-59, the prevalence of GP was higher than that of FD; In the elderly population (Age 70 and above), the prevalence of FD was higher than that of GP. Our data revealed a female predominance in both GP and FD (74.5% and 70.75%). The percentage of female was higher in GP cohort compared to FD cohort (OR 1.21;1.16-1.26, $P< 0.0001$). Most patients with GP and FD were Caucasians (75.64% and 76.69%), followed by African American (13.26% and 10.91%).
Conclusion: The prevalence of GP and FD increases with age up until age 69 and then decreases. GP is more prevalent in the younger age group and FD is more prevalent in the elderly pullulation above age 70. There is a female predominance in both GP and FD.



[1600] **Figure 1.** Age Distribution of Gastroparesis and Functional dyspepsia

Table 1. Demographic comparison of gastroparesis and functional dyspepsia

		Gastroparesis (N=17570)	%	Functional dyspepsia (N=60230)	%	OR	P
Age	20-29	890	5.07%	2740	4.55%	1.04-1.21	0.0043
	30-39	2340	13.32%	7080	11.75%	1.10-1.21	< 0.0001
	40-49	3120	17.76%	8950	14.86%	1.18-1.29	< 0.0001
	50-59	3780	21.51%	10930	18.15%	1.19-1.29	< 0.0001
	60-69	3790	21.57%	12990	21.57%	0.96-1.04	0.992
	70-79	2730	15.54%	11830	19.64%	0.72-0.79	< 0.0001
	80-89	1210	6.89%	5940	9.86%	0.63-0.72	< 0.0001
	90 above	350	1.99%	1910	3.17%	0.55-0.70	< 0.0001
Gender	Female	13090	74.50%	42610	70.75%	1.16-1.26	< 0.0001
Race	Caucasian	13290	75.64%	46190	76.69%	0.91-0.98	0.0039
	AA	2330	13.26%	6570	10.91%	1.19-1.31	< 0.0001
	Asian	160	0.91%	730	1.21%	0.63-0.89	0.0010
	Hispanic/Latino	160	0.91%	600	1.00%	0.77-1.09	0.3106
	Unknown/Other	1630	9.28%	6140	10.19%	0.85-0.95	0.0004

S1601

Peptic Ulcer Bleeding in End-Stage Renal Disease Hospitalizations: A Comparative Analysis in the United States

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Introduction: Peptic ulcer bleeding (PUB), a life-threatening complication of peptic ulcer disease, has been regarded as a leading cause of upper gastrointestinal bleeding globally. Studies have reported higher rates of PUB in patients with end-stage renal disease (ESRD) secondary to a cluster of complex pathophysiological mechanisms. In this study, we aimed to assess the influence of ESRD on PUB hospitalizations in the United States (US).
Methods: We utilized the National Inpatient Sample to identify all adult hospitalizations of PUB in the US between 2007–2014. The study population was subdivided based on the presence or absence of ESRD. Hospitalization characteristics and outcomes were compared. Predictors of inpatient mortality were also identified. P-values ≤0.05 were statistically significant.
Results: Between 2007–2014, there were 351,965 and 2,037,037 PUB hospitalizations with and without ESRD, respectively, in the US (Table). PUB hospitalizations with ESRD had a higher mean age (71.6 vs 63.6 years, $P< 0.001$), and proportion of males (55.5 vs 44.2%, $P< 0.001$) compared to non-ESRD PUB hospitalizations. Additionally, PUB hospitalization with ESRD had a higher proportion of ethnic minorities such as Blacks (20.2 vs 12.4%, $P< 0.001$), Hispanics (9.2 vs 8.5%, $P< 0.001$), and Asians (4.5 vs 3.3%, $P< 0.001$) compared to the non-ESRD PUB cohort. However, non-ESRD PUB hospitalizations had a higher proportion of Whites (72.2 vs 63.2%, $P< 0.001$) compared to the ESRD cohort. Interestingly, rates of *Helicobacter pylori* infection were lower (3.8 vs 5.7%, $P< 0.001$) for PUB hospitalization with ESRD compared to the non-ESRD PUB cohort. Furthermore, we noted higher inpatient mortality (5.4% vs 2.6%, $P< 0.001$), mean length of stay [LOS] (8.2 vs 6 days, $P< 0.001$), and rates of esophagogastroduodenoscopy (EGD) (20.9 vs 19.1%, $P< 0.001$) for PUB hospitalizations with ESRD compared to the non-ESRD PUB cohort. After multivariate logistic regression analysis, whites with ESRD had higher odds of inpatient mortality from PUB compared to other races. To our surprise, the odds of inpatient mortality from PUB decreased by 0.6% for every one-year increase in age for patients with ESRD. Compared to the 2011–2014 study period, the 2007–2010 period had 43.7% higher odds of inpatient mortality for PUB hospitalizations with ESRD.
Conclusion: Despite accounting for only 1.7% of all PUB hospitalizations in the US, PUB hospitalizations with ESRD had higher inpatient mortality, mean LOS, and EGD utilization compared to the non-ESRD PUB cohort.

Table 1. Comparative analysis of hospitalization characteristics and clinical outcomes for peptic ulcer bleeding (PUB) hospitalizations with and without end-stage renal disease (ESRD) from 2007-2014 in the United States

Variable	PUB with ESRD	PUB without ESRD	P-value
Total Hospitalizations	351,965	2,037,037	
Mean Age (years)	71.6	63.5	$P< 0.001$
Gender			$P< 0.001$
Male	196,360 (55.8%)	997,936 (49%)	
Female	155,605 (44.2%)	1,039,101 (51%)	
Race			$P< 0.001$
White	198,644 (63.2%)	1,297,454 (72.4%)	
Black	63,585 (20.2%)	221,799 (12.4%)	
Hispanic	28,831 (9.2%)	152,650 (8.5%)	
Asian	14,125 (4.5%)	59,707 (3.3%)	
Native American	1,677 (0.5%)	10,830 (0.6%)	
Others	7,648 (2.4%)	49,999 (2.8%)	
H. Pylori Infection	13,527 (3.8%)	116,849 (5.7%)	$P< 0.001$
Inpatient Mortality	18,949 (5.4%)	53,352 (2.6%)	$P< 0.001$
Length of Stay (LOS)	8.2 days	6 days	$P< 0.001$
Esophagogastroduodenoscopy (EGD)	72,840 (20.7%)	389,784 (19.1%)	$P< 0.001$
Hospital Bed Size			$P < 0.001$
Large	219,322 (62.7%)	1,230,296 (60.7%)	
Medium	89,445 (25.6%)	533,817 (26.3%)	
Small	41,301 (11.8%)	262,116 (12.9%)	
Hospital Location			$P< 0.001$
Urban Teaching	167,709 (47.9%)	924,791 (45.6%)	
Urban Non-Teaching	150,220 (42.9%)	871,869 (43%)	
Rural	32,139 (9.2%)	229,569 (11.3%)	
Hospital Region			$P< 0.001$
Northeast	60,192 (17.1%)	368,414 (18.1%)	
Midwest	86,813 (24.7%)	481,810 (23.7%)	
South	131,181 (37.3%)	786,158 (38.6%)	
West	73,779 (21%)	400,654 (19.7%)	
Primary Payer			$P< 0.001$
Medicare	269,817 (76.8%)	1,073,633 (52.8%)	
Medicaid	23,821 (6.8%)	204,515 (10.1%)	
Private	45,460 (12.9%)	534,371 (26.3%)	
Self-pay	6,585 (1.9%)	141,970 (7%)	

S1602

The Disproportionate Rise of Non-Cardia Primary Gastric Cancer Incidence Rates in Younger Women Is Driven by Black and White Race but Not Asian Race: A Population-Based Time-Trend Analysis Using the USCS Database

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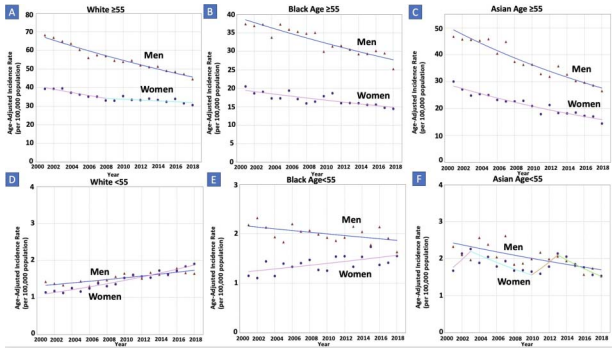
Introduction: Recent population-based time-trend analysis of US nationwide databases showed a disproportional increase in non-cardia gastric cancer (NCGC) incidence rates in younger women (< 55 years) compared to counterpart men. However, the impact of race on the increasing trend in younger women has not been evaluated. Therefore, the aim of this study was to conduct sex and age-specific analysis of NCGC incidence rates among different race groups in a nationally representative US database.
Methods: NCGC incidence rates per 100,000 population were obtained from the United States Cancer Statistics (USCS) database and were age-adjusted to the 2000 US population using SEER*Stat software (v8.4.1, NCI) between 2001-2018. The rates were stratified by age and sex and evaluated in patients of White, Black, and Asian races. Time trends of incidence rates were computed using Joinpoint Regression Software (v4.9.0.1, NCI) utilizing Monte Carlo Permutation analysis to identify the simplest segmented trend. Annual percentage change (APC) and average APC (AAPC) were estimated. Sex-specific pairwise

comparison was conducted to assess identicalness and parallelism between the trends and the absolute AAPC difference was evaluated. Further age and sex-specific analysis was conducted in older (≥55 years) and younger adults (< 55 years). A *P*-value cutoff of 0.05 was utilized.

Results: A total of 169,517 patients were diagnosed with NCGC between 2001-2018 (45.4% women). Among Whites (11,991 patients; 47.4% women), incidence rates were decreasing in the overall age group and in older adults in both sexes. However, in younger White adults (17,790 patients; 49.9% women), incidence rates were increasing in women (AAPC=3.19, *P*< 0.001) at a significantly greater rate than in men (AAPC=1.58, *P*< 0.001) with an absolute AAPC difference of 1.60, *P*< 0.001. Similar results were seen in Black patients with a greater absolute AAPC difference between younger Black women and men (2.23, *P*< 0.001). Among Asian adults (16,132 patients; 46.4% women), there was no statistical difference in trends between women and men in all age groups (Table and Figure).

Conclusion: Nationwide data from the USCS database, covering ≈100% of US population, showed a greater increase in NCGC incidence among younger White and Black women compared to counterpart men. However, this disproportionate increase was not seen in the Asian race. Future research should aim to evaluate risk factors for the increasing trend in younger women.



[1602] **Figure 1.** Sex-specific Trends and Age-Adjusted Incidence Rates Per 100,000 Population for Non-Cardia Gastric Cancer Among Different Age and Race-Specific Groups. A: The average annual percentage change (AAPC) is decreasing in older White men at a significantly greater rate than older White women (-1.31 vs -2.23, *P*=0.002). B: The average annual percentage change (AAPC) is increasing in younger White women at a significantly greater rate than younger White men (3.19 vs 1.58, *P*<0.001). C: The average annual percentage change (AAPC) is decreasing in older White women and men without a significant difference (1.57 vs 1.92, *P*=0.27). D: The average annual percentage change (AAPC) is increasing in younger Black women at a significantly greater rate than younger Black men (1.40 vs -0.83, *P*<0.001). E: The average annual percentage change (AAPC) is decreasing in older Asian women and men without a significant difference (-3.36 vs -3.34, *P*=0.97). F: The average annual percentage change (AAPC) is decreasing in younger Asian men but not in younger Asian women without a significant difference (-2.07 vs -0.87, *P*=0.48)

Table 1. Sex-Specific Trends for Non-Cardia Gastric Cancer Incidence Among Different Age and Race-Specific Groups

Age group, y	Cancer cases (N=169,517)[a]	Trends[b]			Sex-specific AAPC difference (95% CI)[c]	Pairwise comparison P-values[d]		
		Time period	APC (95% CI)	AAPC (95% CI)		Sex-specific AAPC difference	Coincidence[e]	Parallelism[f]
White								
All ages								
Women	53,115 (31.3%)	2001-2006 2006-2018	-1.85 (-3.56 to -0.12) 0.13 (-0.33 to 0.59)	-0.46 (-1.01 to 0.10)	-1.29 (-1.93 to -0.65)	< 0.001	< 0.001	< 0.001
Men	58,876 (34.7%)	2001-2006 2006-2018	-2.75 (-3.76 to -1.73) -1.32 (-1.59 to -1.05)	-1.74 (-2.07 to -1.42)				
Aged ≥55								
Women	44,199 (26.1%)	2001-2008 2008-2018	-2.21 (-3.34 to -1.08) -0.68 (-1.34 to -0.01)	-1.31 (-1.86 to -0.76)	-0.91 (-1.50 to -0.32)	0.002	< 0.001	< 0.001
Men	49,953 (29.5%)	2001-2018	-2.23 (-2.45 to -2.00)	-2.23 (-2.45 to -2.00)				
Aged < 55 #								
Women	8,882 (5.2%)	2001-2018	3.19 (2.75 to 3.62)	3.19 (2.75 to 3.62)	-1.60 (-2.23 to -0.97)	< 0.001	< 0.001	0.002
Men	8,908 (5.3%)	2001-2018	1.58 (1.06 to 2.11)	1.58 (1.06 to 2.11)				
Black								
All ages								
Women	14,945 (8.8%)	2001-2018	-1.04 (-1.50 to -0.57)	-1.04 (-1.50 to -0.57)	-0.73 (-1.32 to -0.14)	0.02	< 0.001	0.008
Men	18,118 (10.7%)	2001-2018	-1.77 (-2.20 to -1.34)	-1.77 (-2.20 to -1.34)				
Aged ≥55								
Women	11,969 (7.1%)	2001-2018	-1.57 (-2.08 to -1.05)	-1.57 (-2.08 to -1.05)	-0.36 (-0.98 to 0.27)	0.27	< 0.001	0.19
Men	14,494 (8.6%)	2001-2018	-1.92 (-2.36 to -1.48)	-1.92 (-2.36 to -1.48)				
Aged < 55 #								
Women	3,624 (2.1%)	2001-2018	1.40 (0.46 to 2.34)	1.40 (0.46 to 2.34)	-2.23 (-3.33 to -1.13)	< 0.001	< 0.001	0.02
Men	2,976 (1.8%)	2001-2018	-0.83 (-1.55 to -0.11)	-0.83 (-1.55 to -0.11)				
Asian								

Table 1. (*continued*)

Age group, y	Cancer cases (N=169,517)[a]	Trends[b]			Sex-specific AAPC difference (95% CI)[c]	Pairwise comparison P-values[d]		
		Time period	APC (95% CI)	AAPC (95% CI)		Sex-specific AAPC difference	Coincidence[e]	Parallelism[f]
All ages								
Women	7,480 (4.4%)	2001-2018	-2.90 (-3.73 to -2.43)	-2.90 (-3.73 to -2.43)	-0.29 (-0.93 to 0.35)	0.37	< 0.001	0.17
Men	8,652 (5.1%)	2001-2018	-3.19 (-3.70 to -2.68)	-3.19 (-3.70 to -2.68)				
Aged ≥55								
Women	5,785 (3.4%)	2001-2018	-3.36 (-3.88 to -2.83)	-3.36 (-3.88 to -2.83)	0.01 (-0.65 to 0.67)	0.97	< 0.001	0.97
Men	7,100 (4.2%)	2001-2018	-3.34 (-3.83 to -2.86)	-3.34 (-3.83 to -2.86)				
Aged < 55 #								
Women	1,694 (1.0%)	2001-2003	11.64 (-7.03 to 34.06)	-0.87 (-4.02 to 2.38)	-1.20 (-4.54 to 2.14)	0.48	0.07	0.24
		2003-2010	-4.81 (-7.50 to -2.04)					
		2011-2013	10.44 (-6.07 to 29.86)					
		2013-2018	-6.23 (-9.34 to -3.02)					
Men	1,550 (0.9%)	2013-2018	-2.07 (-3.09 to -1.05)	-2.07 (-3.09 to -1.05)				

[a]Data are presented as count numbers followed by percentages of the count numbers from the total cases of cancer in the database.
[b]Time-trends were computed using Joinpoint Regression Program (v4.9.0.1, NCI) with 3 maximum joinpoints allowed (4-line segments).
[c]A negative value indicates a greater AAPC in women compared to men.
[d]Tests whether sex-specific trends were identical. A significant P-value indicates that the trends were not identical (i.e., they had different mortality rates and coincidence was rejected).
[e]Tests whether sex-specific trends were parallel. A significant P-value indicates that the trends were not parallel (i.e., parallelism was rejected).
#Primary outcomes.

S1603

Anatomic Distribution of Gastric Adenocarcinoma Varies Among Patients of Different Gender, Ethnicity, and Race in the U.S.

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Introduction: Although incidence of gastric adenocarcinoma (GAC) has been declining overall, incidence rate of esophagogastric junction, or cardia, cancer is rising. However, this change in GAC anatomical distribution has not been explored through the lens of gender, race, and ethnicity in recent years.
Methods: All persons with GAC recorded in the SEER database from 2000-2019 were characterized according to gender, race (White, Black, American Indian/Alaska Native or AI, and Asian/Pacific Islander or API) and ethnicity (Hispanic, non-Hispanic or NH). Statistical significance was calculated with one-way ANOVA.
Results: Data from 17 cancer registries in the US reveal incidence of 100,014 cases of GAC, 63% of which occurred in men. As known previously, the cardia was the site of most frequent occurrence in men (39%). The antrum was the site of most frequent occurrence in women (24%). Gender distribution of GAC was similar in Hispanic vs non-Hispanic populations. However, the antrum was the predominant site of GAC occurrence in Hispanic men (20%), Hispanic women (24%), and non-Hispanic women (24%), as opposed to non-Hispanic men, for which the site was the cardia (43%). In looking more closely at anatomical distribution of GAC in non-Hispanic men, racially AI men (24%) as well as White men (55%) were most likely to have GAC in the cardia, while Black (26%) and API (29%) men were most likely to have GAC in the antrum. In Hispanic male patients, racially White (20%) and Black (24%) men were most likely to have GAC in the antrum, while AI (27%) and API (27%) men were most likely to have GAC in the cardia. Furthermore, non-Hispanic White (28%) women were also most likely to have GAC in cardia, whereas non-Hispanic women of other races, as well as Hispanic women overall, regardless of race, were all most likely to have GAC in the antrum. However, analysis of anatomical distribution of GAC among racial groups within both non-Hispanic and Hispanic women revealed statistically significant differences ($P< 0.001$ for both). This difference disappears when comparing the distribution of GAC in Hispanic vs non-Hispanic women overall ($P=0.208$) (Table).
Conclusion: Differences in distribution of GAC exist between genders, between ethnicities, and among races, and, in addition to non-Hispanic White men, other groups are also predisposed to developing GAC in the cardia in recent years.

Table 1. Frequency of GAC in patients from 17 cancer registries in the United States from 2000-2019 sorted by anatomic distribution of cancer within the stomach, gender, ethnicity, and race

	MALE AND FEMALE NONHISPANIC							MALE AND FEMALE HISPANIC						
	White	Black	American Indian/Alaska Native	Asian or Pacific Islander	Unknown	SUM	%	White	Black	American Indian/Alaska Native	Asian or Pacific Islander	Unknown	SUM	%
C16.0-Cardia, NOS	24,255	1,583	182	1,898	55	27,973	34.49%	2,945	32	14	30	31	3,052	16.13%
C16.1-Fundus of stomach	2,038	418	38	416	10	2,920	3.60%	762	11	0	3	4	780	4.12%
C16.2-Body of stomach	3,805	1,310	55	1,735	25	6,930	8.55%	2,291	17	13	20	27	2,368	12.52%
C16.3-Gastric antrum	7,141	3,274	145	4,568	41	15,169	18.71%	4,021	48	6	26	40	4,141	21.89%
C16.4-Pylorus	1,099	539	50	526	5	2,219	2.74%	693	5	4	10	7	719	3.80%
C16.5-Lesser curvature of stomach NOS	2,802	1,200	129	1,814	10	5,955	7.34%	1,681	14	4	15	27	1,741	9.20%
C16.6-Greater curvature of stomach NOS	1,544	481	49	673	4	2,751	3.39%	778	6	2	7	12	805	4.25%
C16.8-Overlapping lesion of stomach	3,196	1,036	76	1,304	8	5,620	6.93%	1,918	20	3	9	10	1,960	10.36%
C16.9-Stomach, NOS	7,051	2,177	168	2,102	59	11,557	14.25%	3,229	39	11	29	46	3,354	17.73%
SUM	52,931	12,018	892	15,036	217	81,094	100.00%	18,318	192	57	149	204	18,920	100.00%
													0.5846723044	

	MALE NONHISPANIC							MALE HISPANIC						
	White	Black	American Indian/ Alaska Native	Asian or Pacific Islander	Unknown	SUM	%	White	Black	American Indian/ Alaska Native	Asian or Pacific Islander	Unknown	SUM	%
C16.0-Cardia, NOS	19,444	1,104	131	1,423	42	22,144	42.51%	2,099	21	11	21	20	2,172	19.63%
C16.1-Fundus of stomach	1,252	242	20	233	7	1,754	3.37%	462	6	0	1	2	471	4.26%
C16.2-Body of stomach	2,043	720	29	934	16	3,742	7.18%	1,260	9	7	12	17	1,305	11.80%
C16.3-Gastric antrum	3,800	1,883	76	2,503	18	8,280	15.89%	2,187	25	6	11	20	2,249	20.33%
C16.4-Pylorus	602	304	35	329	3	1,273	2.44%	421	2	3	5	4	435	3.93%
C16.5-Lesser curvature of stomach NOS	1,705	760	85	1,040	6	3,596	6.90%	994	3	3	8	16	1,024	9.26%
C16.6-Greater curvature of stomach NOS	874	295	32	358	1	1,560	2.99%	468	4	2	2	4	480	4.34%
C16.8-Overlapping lesion of stomach	1,822	635	44	693	4	3,198	6.14%	1,099	12	3	2	6	1,122	10.14%
C16.9-Stomach, NOS	4,038	1,235	104	1,139	30	6,546	12.57%	1,738	23	6	17	20	1,804	16.31%
SUM	35,580	7,178	556	8,652	127	52,093	100.00%	10,728	105	41	79	109	11,062	100.00%

	FEMALE NONHISPANIC							FEMALE HISPANIC						
	White	Black	American Indian/ Alaska Native	Asian or Pacific Islander	Unknown	SUM	%	White	Black	American Indian/ Alaska Native	Asian or Pacific Islander	Unknown	SUM	%
C16.0-Cardia, NOS	4,811	479	51	475	13	5,829	20.10%	846	11	3	9	11	880	11.20%
C16.1-Fundus of stomach	786	176	18	183	3	1,166	4.02%	300	5	0	2	2	309	3.93%
C16.2-Body of stomach	1,762	590	26	801	9	3,188	10.99%	1,031	8	6	8	10	1,063	13.53%
C16.3-Gastric antrum	3,341	1,391	69	2,065	23	6,889	23.75%	1,834	23	0	15	20	1,892	24.08%
C16.4-Pylorus	497	235	15	197	2	946	3.26%	272	3	1	5	3	284	3.61%
C16.5-Lesser curvature of stomach NOS	1,097	440	44	774	4	2,359	8.13%	687	11	1	7	11	717	9.12%
C16.6-Greater curvature of stomach NOS	670	186	17	315	3	1,191	4.11%	310	2	0	5	8	325	4.14%
C16.8-Overlapping lesion of stomach	1,374	401	32	611	4	2,422	8.35%	819	8	0	7	4	838	10.66%
C16.9-Stomach, NOS	3,013	942	64	963	29	5,011	17.28%	1,491	16	5	12	26	1,550	19.73%
SUM	17,351	4840	336	6384	90	29,001	100.00%	7,590	87	16	70	95	7,858	100.00%

S1604

Prognostic Value of Systemic Inflammatory Markers in Gastric MALT Lymphoma

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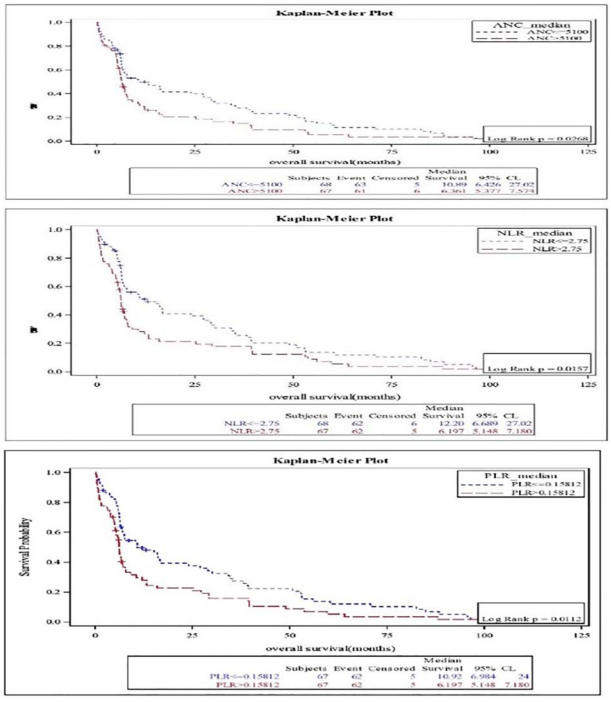
Introduction: Several studies have shown the role of inflammatory markers, especially the neutrophil-to-lymphocyte Ratio (NLR), as indicators of poor prognosis in various gastrointestinal malignancies. We aimed to examine the prognostic value of NLR, among other markers, and their relationship with the presence of baseline distant metastasis in patients with MALT Lymphoma.

Methods: We retrospectively reviewed the charts of 139 patients with Gastric MALT Lymphoma treated at a tertiary care cancer center from 2012 to 2018. We examined the relationship between absolute eosinophilic count (AEC), absolute lymphocyte count (ALC), absolute monocytic count (AMC), absolute neutrophil count (ANC), monocyte to lymphocyte ratio (MLR), NLR, and platelet to lymphocyte ratio (PLR) with the presence distant metastases, and overall survival (OS). We used multivariable logistic regression analyses to test the association between the variables and the presence of baseline distant metastases.

Results: The median age was 55 years, and males comprised 67.6% of the patients. The ROC value of 3.4 was determined as the cutoff value for NLR. High NLR (NLR > 3.4 μL) was significantly associated with the presence of distant metastasis at diagnosis (*P*-value, 0.02, Odds Ratio (OR): 2.4, CI: 1.14- 5.10). High ALC (>1819) was also associated with the presence of baseline distant metastasis (*P*-value, 0.04, OR: 0.46, CI: 0.22- 0.98). Multivariable analysis showed that high NLR (*P*-value, 0.02, OR 2.4 95% CI 1.1-5.1) was an independent risk factor for distant metastasis at presentation (Figure). High ANC, NLR, and PLR, were associated with poor OS, (*P*-value, 0.027, 0.016, and 0.011 respectively).

Conclusion: High systemic inflammatory markers are associated with poor prognosis (the presence of distant metastasis) and poor OS in patients with Gastric MALT Lymphoma. To our knowledge, this is the first study examining the association between these inflammatory markers and the presence of distant metastases in MALT Lymphoma. Whether these markers could predict the response to treatment is unknown (Table).



[1604] **Figure 1.** (Top)Kaplan Meier curve for overall survival of patients with ANC (Middle). Kaplan Meier curve for overall survival of patients with NLR (Bottom). Kaplan Meier curve for overall survival of patients with PLR

Table 1. The association between systemic inflammatory markers and overall survival

Parameter	Median OS	*P-value*	Hazard Ratio	95% Confidence Interval
ANC >5100 ANC≤5100	6.4 months 10.9 months	0.027	1.5	1.04–2.1
ALC >1819 ALC≤1819	7.6 months 6.7 months	0.19	0.80	0.55–1.1
AMC > 603 AMC≤ 603	6.3 months 7.8 months	0.66	1.1	0.76–1.6
NLR > 2.75 NLR ≤ 2.75	6.2 months 12.2 months	0.016	1.5	1.1–2.2
MLR >0.32 MLR≤0.32	6.3 months 10.5 months	0.36	1.2	0.83–1.7
PLR >0.16 PLR≤0.16	6.2 months 10.9 months	0.011	1.6	1.1–2.3

S1605

Comparable Outcomes of Endoscopic, Surgical, and Hybrid Resection of Gastric GIST

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Introduction: Gastrointestinal stromal tumors (GIST) are rare, comprising < 1% of all gastrointestinal tumors, and most commonly arise in the stomach (60%). Surgical resection (SR) has been the mainstay of therapy, however endoscopic resection (ER) is being performed for small lesions, while hybrid resection (HR) can be used for bigger lesions, both becoming a viable alternative to surgery. We aimed to analyze Gastric GIST (G-GIST) management trends, compare outcomes, and hospital resource utilization between ER, SR, and HR techniques in the USA.

Methods: Using *ICD-10* diagnosis code for G-GIST (C49.A2), we extracted adult (>20y) patients' data from Nationwide Inpatient Sample (2017-2019yy). We used the procedure codes for ER (0D568ZZ, 0DB68ZZ, 0DT78ZZ), open and laparoscopic SR(0D564ZZ, 0DB64ZZ, 0DB60ZZ, 0DT74ZZ,0DT70ZZ), and HR (endoscopic and laparoscopic codes combined), and defined technical procedural and systemic complications. Mortality, complications, length of stay (LOS), and hospitalization charges were used as outcomes. Statistical analysis was performed with SAS.

Results: A total of 145 ER, 7875 SR, and 70 HR procedures for G-GIST management was identified. According to different approaches, there was no difference in primary payer types or median household income. There was slight male to female predominance in ER and HR but not in the SR group. Racial disparities were noted in the ER >SR but not in HR (Figure). Most procedures were performed in teaching institutions: ER (93%), SR (86%), and HR (86%). Mortality for SR was 0.8%, and no inpatient deaths were recorded for ER or HR. Mean charges were highest for HR ($163,794) and lowest for ER ($86,811), with LOS highest for HR (10.7d), followed by ER (~7d) and SR (5.5d). More complications were noted in HR (43%, vs 28% in ER and 18% in SR) (Table). Most SR and HR patients were discharged home (94% and 93%, respectively); A lesser percentage of ER (72%) were discharged home with a relatively higher percentage of 28% sent to long-term care facilities compared to SR (5%) and HR (7%).
Conclusion: Minimally invasive management of G-GIST is evolving, with surgery still being most common. Both endoscopic and hybrid techniques are promising alternatives to surgery and show a lower mortality rate, however, with a higher percentage of non-fatal complications (both), increased cost (HR only), and increased LOS (both) compared to SR. Larger studies can help guide providers in choosing the optimal individual approach in G-GIST management.

Sociodemographic Characteristics of Gastric GIST resected with Endoscopic, Surgical and Hybrid approaches, NIS 2017-2019

		Endoscopic Resection	%	95% CI		Surgical Resection	%	95% CI		Hybrid Resection	%	95% CI	
Gastric GIST	Total	145	100.0	100.0	100.0	7,875	100.0	100.0	100.0	70	100.0	100.0	100.0
Age	40-49	15	10.3	0.0	21.5	565	7.2	5.9	8.4	15	21.4	0.0	43.0
	50-59	30	20.7	7.5	33.9	1,445	18.3	16.4	20.3	10	14.3	0.0	32.7
	60-69	45	31.0	14.9	47.2	2,585	32.8	30.5	35.1	15	21.4	0.0	43.0
	>70	50	34.5	16.9	52.0	3,085	39.2	36.8	41.5	30	42.9	16.9	68.8
Gender	Male	85	58.6	40.4	76.8	3,860	49.0	46.5	51.5	40	57.1	31.1	83.2
	Female	60	41.4	23.2	59.6	4,015	51.0	48.5	53.5	30	42.9	16.8	68.9
Race	White	95	65.5	48.4	82.6	4,495	58.9	56.5	61.4	25	35.7	10.5	61.0
	Black	25	17.2	4.6	29.9	1,835	24.0	22.0	26.1	25	35.7	10.4	61.1
	Hispanic	15	10.3	0.0	21.5	555	7.3	5.9	8.6	20	28.6	4.9	52.3
Primary payer	Public	90	62.1	44.2	80.0	4,880	62.1	59.7	64.5	40	57.1	31.0	83.3
	Private	55	37.9	20.0	55.8	2,820	35.9	33.5	38.3	25	35.7	10.4	61.1
Median Household Income Quartiles	Q1	45	31.0	14.5	47.5	1,980	25.4	23.3	27.6	20	30.8	5.7	55.8
	Q2	35	24.1	8.5	39.8	1,795	23.1	21.0	25.1	25	38.5	12.1	64.8
	Q3	35	24.1	7.0	41.3	2,010	25.8	23.7	28.0	5	7.7	0.0	22.2
	Q4	30	20.7	5.9	35.5	1,995	25.6	23.3	27.9	15	23.1	0.1	46.1
Hospital Status	Teaching	135	93.1	86.3	99.9	6,795	86.3	85.5	87.0	60	85.7	67.9	100.0

[1605] **Figure 1.** Sociodemographic Analysis of Endoscopic, Surgical and Hybrid Gastric GIST Resection

Table 1. Hospital Resource Utilization and Complications for Endoscopic, Surgical and Hybrid Gastric GIST Resection

	Endoscopic Resection	95% CI	Surgical Resection	95% CI	Hybrid Resection	95% CI
Mean Charges	$86,811	$54,981-$118,641	$93,112	$87,943-$98,280	$163,794	$114,128-$213,461
Mean Length of Stay (days)	6.9	4.6-9.2	5.5	5.2-5.8	10.7	7.1-14.4
Complications	27.6%	11.2-44%	17.8%	15.9-19.7%	42.9%	16.8-68.9%

S1606

A Retrospective Study of Doxycycline-Based Quadruple Therapy versus Tetracycline-Based Quadruple Therapy for the First Line Treatment of *Helicobacter pylori*

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Introduction: The global prevalence of antimicrobial resistance has resulted in challenges with *H. pylori* eradication. Gastric acid suppression and antibiotic therapy are used to eradicate H. pylori. Cost and shortages inhibit use of tetracycline for first line treatment of H. pylori. Doxycycline represents a possible cost-effective alternative for treating H. pylori. We performed an analysis of first line doxycycline-based quadruple therapy in comparison to tetracycline-based quadruple therapy in the eradication of H. pylori.
Methods: A retrospective chart review was conducted using the Advocate Aurora Health database, a multi-hospital community-based system consisting of sixteen hospitals and over 500 sites of care. All patients age 18 and older with documented *H. pylori* infection treated with either a first line doxycycline-based regimen (DOX) or tetracycline-based regimen (TCN) from January 2012 to April 2022 were included. In total, 3,384 patients were identified. Patients who received prior first-line treatment with other regimens were excluded. All cases were reviewed for confirmation of infection (either by biopsy, breath test or stool antigen testing), the treatment regimen used, and confirmation of H. Pylori eradication (either by biopsy, breath test, or stool antigen). Patients without confirmation of eradication or with pending eradication test results were excluded. Patient demographics were summarized and eradication rates determined.
Results: Of the 3,384 reviewed cases, 628 cases met inclusion and exclusion criteria. Of these, 305 patients were treated with DOX and 323 patients were treated with TCN. Based on these numbers, a posteriori non-inferiority calculation with an assumed 85% eradication rate for the TCN and 80% for DOX and 90% power suggested 100 patents were needed per group (HyLown Consulting LLC, Statistical Calculators). The average age for DOX was 57 years and 193/305 (60%) were female. The average age for TCN was 58.5 years and 210/323 (69%) were female. Eradication rates were 87.6% for DOX and 88.2% for TCN (Table).
Conclusion: Doxycycline-based quadruple therapy regimen is effective and appears to be non-inferior to tetracycline-based quadruple therapy regimens for first line treatment of H. pylori.

Table 1. The number of patients with tetracycline or doxycycline antibiotic regimens and the eradication rate

Doxycycline Regimen	**# of Patients**	**% of Patients**
Successful Eradication	283	87.6%
Failed Eradication	40	12.4%
Total	323	
Tetracycline Regimen	**# of Patients**	**% of Patients**
Successful Eradication	269	88.2%
Failed Eradication	36	11.8%
Total	305	

S1607

The Efficacy of Bismuth Based Quadruple Therapy Compared With Clarithromycin-Based Triple Therapy for *Helicobacter pylori* in a Predominantly Hispanic Population: A Retrospective Cohort Study

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Introduction: *Helicobacter pylori* has a prevalence of approximately 35% in the United States. Infection rates and antibiotic resistance are reported to be higher in immigrants from endemic areas such as Latin America. Clarithromycin based triple therapy had been used as the first line treatment; however, the updated ACG *H. pylori* guidelines in 2017 recommends bismuth based quadruple therapy as the first line treatment in a population with suspected clarithromycin resistance. The aim of this study was to evaluate the effectiveness of bismuth quadruple therapy compared with clarithromycin triple therapy in a predominantly Hispanic population on the US- Mexico border, as well as to assess the impact of insurance status and the 2017 ACG guidelines on the choice of treatment regimen.

Methods: A retrospective cohort study of adult patients with *H. pylori* infection treated with clarithromycin triple therapy or bismuth quadruple therapy at a tertiary care county hospital on the US-Mexico border from January 2009 to March 2022 was conducted. Patients with unknown treatment regimens or an absence of an eradication test were excluded from the analysis. A logistic regression model adjusting for propensity scores using the inverse probability treatment weighting method was used to determine the relationship between eradication status and the treatment regimen. The analyses were adjusted for, age, gender, ethnicity, insurance, diabetes, smoking, illicit drug use, and PPI use.
Results: A total of 938 patients were included, 201 patients (21.4%) in the quadruple regimen group and 737 patients (78.6%) in the triple regimen group. Mean age was 51 years, female (70.8%), Hispanic (90.4%), and non-insured patients (29.4%). The *H. pylori* eradication rate with quadruple therapy was significantly higher compared with triple therapy (91.5% vs 83.2% $P=0.004$) in unadjusted analysis and after adjusting for propensity scores (OR 2.43; 95% CI: [1.38 - 4.27], $P=0.002$). Following the 2017 ACG guidelines, the rate of using quadruple as the first line therapy increased from 11.1% to 24.6% ($P< .0001$). Furthermore, quadruple regimen therapy was more likely to be prescribed for insured (79.1%) compared with non-insured (20.9%) patients ($P< 0.001$) (Table).
Conclusion: In a predominantly Hispanic population, bismuth quadruple therapy is more effective in *H. pylori* eradication compared with clarithromycin triple regimen. However, insurance status seems to influence the choice of recommended regimen in this high-risk population.

Table 1. Comparisons of characteristics between initial treatment regimens

	Initial Treatment Regimens		
Factor	**Bismuth Quadruple**	**Clarithromycin Triple**	***P*-value**
N	201	737	
Age (years)			0.017
Age at testing, mean (SD)	53.92 (13.44)	51.33 (13.66)	
Gender			0.080
Female	132 (65.67%)	532 (72.18%)	
Male	69 (34.33%)	205 (27.82%)	
Ethnicity			0.54
Non-Hispanic	16 (7.96%)	69 (9.36%)	
Hispanic	185 (92.04%)	668 (90.64%)	
Insurance status			0.003
No	42 (20.90%)	234 (31.75%)	
Yes	159 (79.10%)	503 (68.25%)	
Diabetes			0.93
No	151 (75.12%)	550 (74.63%)	
Yes	50 (24.88%)	187 (25.37%)	
Smoking history			0.76
No	165 (82.09%)	594 (80.82%)	
Yes	36 (17.91%)	141 (19.18%)	
Illicit drug use			0.58
No	195 (97.50%)	718 (98.09%)	
Yes	5 (2.50%)	14 (1.91%)	
PPI use before diagnosis			1.00
No	149 (75.63%)	547 (75.66%)	
Yes	48 (24.37%)	176 (24.34%)	
Type of eradication test			< 0.001
Endoscopic biopsy	25 (12.44%)	69 (9.39%)	
Stool test	120 (59.70%)	302 (41.09%)	
Breath test	56 (27.86%)	364 (49.52%)	
Result of eradication test			0.004
Positive (failure of eradication)	17 (8.46%)	123 (16.73%)	
Negative (successful eradication)	184 (91.54%)	612 (83.27%)	
Gastric cancer			1.00
No	198 (99.50%)	725 (99.04%)	
Yes	1 (0.50%)	7 (0.96%)	

SD: standard deviation; PPI: proton pump inhibitor.

S1608

The Risk of Gastric Cancer (Overall and Cardia Only) With the Use of Proton Pump Inhibitors in Observational Studies: A Systematic Review and Meta-Analysis

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Introduction: There are a number of reports that raise safety concerns on the association between proton pump inhibitors (PPIs) and the risk of gastric cancer both overall as well as isolated gastric cardia.
Methods: We performed an updated systematic review and meta-analysis of observational studies published through January 2022 that examined the association between > 6 months PPI use and the risk of gastric cancer overall and gastric cardia cancer specifically. The inclusion criteria were classification as either a case-control or cohort study, participants 18 years or older, long-term (> 6 months) PPI use, and gastric cancer as a specified outcome. Excluded studies were case reports, interventional studies, conducted in the pediatric population and used animal models. Study quality was evaluated using the Risk Of Bias In Non-randomized Studies of Interventions (ROBINS-I) tool. Pooled adjusted risk estimates were calculated using random effects model, and heterogeneity among studies was examined as I^2 statistic.
Results: We identified 15 publications with 16 studies fulfilling inclusion and exclusion criteria: 6 reported nested case-control studies, 1 case-control, 1 prospective cohort, 6 retrospective cohort, and 1 paper with both case-control and prospective cohort studies. Only 8 studies accounted for *Helicobacter pylori*. Most studies (5 of 8) that examined gastric cardia risks reported no significant association. Pooled unadjusted odds ratios from case control studies were 1.73 (95% CI: 1.43, 1.85) from the 5 overall gastric studies, and 1.26 (95% CI: 0.58, 2.72) from the 6 gastric cardia studies. Most (12 of 15) reported a statistically significant adjusted risk estimate of the association of PPI usage and overall gastric cancer risk, and 3 studies reported no association. Pooled unadjusted risk ratios from cohort studies were 2.57 (95%

CI: 2.01, 3.28) from the 8 overall gastric cancer studies, and 1.61 (95% CI: 0.93-2.78) from the 3 gastric cardia studies. The I^2 ranged between 23 and 88%. Most (15 of 16) had at least moderate risk of bias on the ROBINS-I tool with 1 study with a serious risk of bias (Table).

Conclusion: Observational studies show inconsistent and mostly non-significant (individual or pooled) association between PPI and gastric cardia. For overall gastric, pooled results show a modest statistical association, but considerable heterogeneity among studies, study design limitations and at least moderate risk of bias do not support an etiological relationship between PPI and gastric cancer.

Table 1. Fifteen observational studies that examined the association between PPIs and risk of gastric cancer (GC)

Paper (Year of Publication)	Area	Study design	Gastric cancer (GC) site	Patient source	Adjusted risk estimate (95% CI)	ROBINS-I Score
Garcia Rodriguez et. al (2006)	United Kingdom	Nested case-control	Overall (any gastric site) Gastric cardia	General Practitioners Research Database	Adjusted OR for Cardia: 1.06 (CI 0.57-2.00)	Moderate risk
Duan et. al (2008)	United States	Case-control	Overall (any gastric site) Gastric cardia	University of Southern California Cancer Surveillance Program	Adjusted OR for Cardia with PPI use for < 1year: 0.65 (0.31-1.37) 1-3 years: 0.70 (CI 0.32-1.49) > 3 years: 1.29 (CI 0.70-2.36)	Moderate risk
Tamim et. al (2008)	Canada	Nested case-control	Overall (any gastric site) Gastric cardia	Quebec health insurance plan databases	Adjusted OR for overall GC: 1.46 (CI 1.22-1.74) Cardia: 0.58 (CI 0.26-1.32)	Moderate risk
Poulsen et. al (2009)	Denmark	Prospective cohort	Overall (any gastric site)	Danish Civil Registration System	Adjusted IRR for overall GC: 1.2 (CI 0.8-2.0)	Moderate risk
Wennerstrom et. al (2017)	Netherlands	Nested case-control	Overall (any gastric site) Gastric cardia	Danish Civil Registration System	Adjusted HR for Cardia: 2.51 (CI 2.26-2.79)	Moderate risk
Brusselaers et. al (2017)	Sweden	Retrospective cohort	Overall (any gastric site) Gastric cardia	The Swedish Cancer Registry	Adjusted SIR for overall GC: 3.38 (CI 3.25-3.53) Cardia: 3.55 (CI 3.27-3.86)	Moderate risk
Lai et. al (2018)	Taiwan	Case-control	Overall (any gastric site)	Taiwan National Health Insurance Program	Adjusted OR for overall GC: 2.00 (CI 1.36-2.95)	Moderate risk
Peng et. al (2018)	Taiwan	Nested case-control	Overall (any gastric site) Gastric cardia	National Health Insurance Research Database; Registry of Catastrophic Illness	Adjusted OR for overall GC: 2.48 (CI 1.38-4.38) Cardia: 2.58 (CI 1.38-4.83)	Moderate risk
Cheung et. al (2018)	Hong Kong	Retrospective cohort	Overall (any gastric site) Gastric cardia	Clinical Data Analysis and Reporting System of Hong Kong Hospital Authority	Adjusted HR for overall GC: 2.19 (CI 1.31-3.66) Cardia: 1.24 (CI 0.35-4.34)	Moderate risk
Niikura et. al (2018)	Japan	Retrospective cohort	Overall (any gastric site)	University Tokyo Hospital database	Adjusted HR for overall GC: 3.61 (CI 1.49-8.77)	Serious risk
Brusselaers et. al (2019)	Sweden	Retrospective cohort	Overall (any gastric site)	The Swedish Cancer Registry	Adjusted SIR for overall GC: 2.97 (CI 2.83-3.10)	Moderate risk
Lee et. al (2020)	United States	Nested case-control	Overall (any gastric site) Gastric cardia	Kaiser Permanente Northern California	Adjusted OR for overall GC: 1.07 (CI 0.81-1.42) Cardia: 0.98 (CI 0.68-1.40)	Moderate risk
Liu et. al (2020)	United Kingdom	Nested case-control	Overall (any gastric site)	Primary Care Clinical Information Unit	Adjusted OR for overall 1.49 (CI 1.24-1.80)	Moderate risk
Liu et. al (2020)	United Kingdom	Prospective cohort	Overall (any gastric site)	UK BioBank	Adjusted HR for overall GC: 1.28 (CI 0.86-1.90) Cardia: 0.81 (CI 0.40-1.64)	Moderate risk
Ng et. al (2021)	Hong Kong	Retrospective cohort	Overall (any gastric site)	PCI Registry and Clinical Data and Analysis Reporting System	Adjusted HR for overall GC: 2.06 (CI 1.01-4.18)	Low risk
Seo et. al (2021)	South Korea	Retrospective cohort	Overall (any gastric site)	National Health Insurance Service-National Sample Cohort (old version); Observational Medical Outcomes Partnership-Common Data Model	Adjusted HR for overall GC: 2.37 (CI 1.56-3.68)	Moderate risk

S1609

Utility of Surveillance Endoscopy for Gastric Ulcers: Are We Scoping Too Much?

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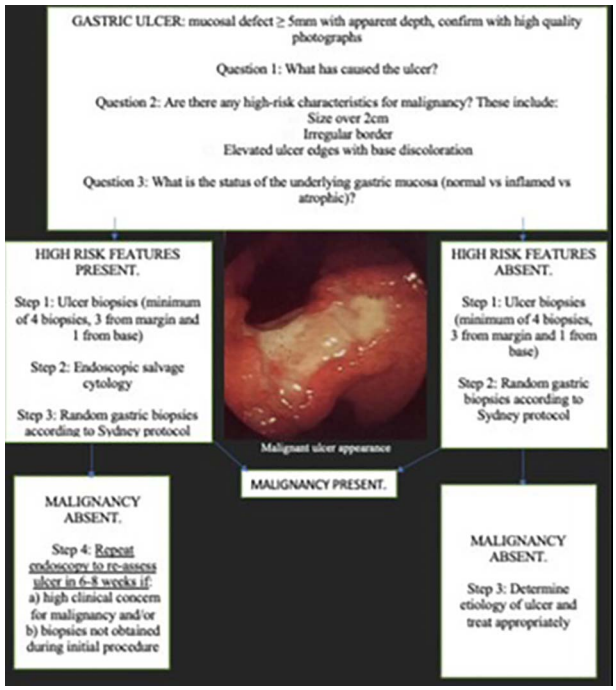
Introduction: After diagnosing a gastric ulcer, it has become routine practice to perform a repeat endoscopy several weeks later to ensure ulcer healing and to rule out malignancy. Current guidelines for surveillance endoscopy (SE) are based on little to no evidence. We suspected that the majority of these ulcers were benign and did not need SE, and that most malignant ulcers are apparent at index endoscopy and diagnosed by biopsies. As a quality improvement (QI) initiative, we sought to develop a more precise algorithm for determining the need for SE. We anticipated this would reduce cost and endoscopy burden while preventing missed cancer diagnoses.

Methods: Using the Plan-Do-Study-Act QI methodology, local and national recommendations were evaluated for current practice. Pre-intervention data was collected from February 2019 to July 2021 using endoscopy software from 2 tertiary care institutions in Houston, TX. This data was reviewed to determine risk factors for gastric cancer. An expert panel (D.G., M.T., R.S., G.K.) then developed an algorithm for SE incorporating these and other published risk factors, as well as expert opinion.

Results: There were 198 patients in our cohort (Table), and 147 were men. The average age and overall ulcer size were 61.1 years and 14.5mm, respectively. Malignant ulcers were found in 16 patients (8%), as follows: 11 gastric, 4 lymphoma, and 1 lung. Most patients were male (10), and the average age was 54.4 years. The average ulcer size was 25.6mm. Importantly, the majority were biopsied on index endoscopy (15, 94%). One patient not initially biopsied was diagnosed with gastric cancer on SE. Upon review of endoscopic images, 14 (87.5%) had malignant features defined as: size over 2cm, irregular borders, and elevated ulcer edges with base discoloration. For the 182 patients without malignancy, 61 (33.5%) had malignant ulcer features. Of these, 40 (65.6%) were biopsied on index endoscopy. Given that some ulcers would not have been diagnosed as cancer as they had no malignant features at index endoscopy, the expert panel felt that all ulcers should be biopsied initially. Those with high-risk features would then need surveillance. An algorithm was established from this pre-intervention data (Figure).

Conclusion: The pre-intervention data establishes a baseline for our QI project and helped us create a more precise algorithm for SE. Most importantly, we have incorporated biopsies for all ulcers at index endoscopy.



[1609] **Figure 1.** Gastric ulcer biopsy and surveillance algorithm

Table 1. Gastric ulcer characteristics. Note: 40 of 61 ulcers with malignant features were biopsied on initial EGD

	Number	Male/Female	Average Age (years)	Ulcer Size (mm)	Malignant Features (%)	Biopsied on Initial EGD (%)
Malignant Ulcer	16	10/6	54.4	25.6	14 (87.5%)	15 (94%)
Non-malignant Ulcer	182	137/45	61.7	13.5	61 (33.5%)	40 (65.6%)[1]
Total	198	147/51	61.1	14.5	37.9%	67.9%

S1610

Obesity as a Risk Factor for Gastric Cancer in a Diverse Population: Investigating the Multiethnic Cohort

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Introduction: Gastric cancer is the fifth most common and third deadliest cancer worldwide. The rate of cardia gastric cancer is on the rise, possibly due to obesity. Literature exploring the association between obesity and gastric cancer has focused primarily on White populations. Therefore, an assessment of obesity and gastric cancer risk in ethnically diverse populations is needed.
Methods: The Multiethnic Cohort (MEC) is a population-based prospective study that has followed ~215,000 participants since the early 1990s. Gastric cancer (GC) cases were identified from linkages to tumor registries in California and Hawaii. Self-reported body mass index (BMI), weight, smoking, alcohol consumption, and family history of GC were obtained from the baseline questionnaire. Hazard ratios (HR) and 95% confidence intervals (CI) were calculated via Cox proportional hazards models to estimate the association between anthropometric variables and GC incidence by tumor site.
Results: During an average 19.4 years of follow-up, 1,458 GC cases (192 cardia, 779 non-cardia) were identified among 166,505 participants. Amongst cases, mean age at cohort entry was 63.8 years and at time of diagnosis was 75.6 years. Most gastric cancer patients were male (59.7%), Japanese (47.6%) or Latino (22.1%), former smokers (44.5%), without family GC history (89%), and with no daily alcohol intake (52.1%). In this population, we did not find statistically significant trends in overall GC incidence based on weight or BMI. Significant associations were observed for cardia cancer: increased BMI at age 21 (HR 1.41, 95% CI 1.14-1.75), BMI at baseline (HR 1.29, 95% CI 1.1-1.52), weight at age 21 (HR 1.11, 95% CI 1.04-1.17), and weight at baseline (HR 1.08, 95% CI 1.03-1.13) were each associated with an higher risk of cardia gastric cancer. Higher weight at age 21 (HR 0.95, 95% CI 0.91-0.99), weight at baseline (HR 0.96, 95% CI 0.94-0.99), BMI rate of change (HR 0.44, 95% CI 0.22-0.92), and a weight rate of change (HR 0.86, 95% 0.77-0.97) were each associated with decreased NCGC risk. Results were similar in a sensitivity analysis that excluded cases diagnosed within 3 years of cohort entry (Table).
Conclusion: In this ethnically diverse cohort study, we showed an association between increasing BMI or weight and risk of cardia gastric cancer. Given the increasing incidence of cardia gastric cancer and obesity, understanding the relationship between the 2 is imperative and could be used to guide future risk stratification and screening guidelines.

Table 1. Association between BMI and weight change and cardia/non-cardia

	Cardia		Non-cardia	
	Cases	HR (95% CI)	Cases	HR (95% CI)
BMI at age 21 per 5 kg/m^2	192	**1.41 (1.14, 1.75)**	779	0.92 (0.81, 1.05)
BMI at baseline per 5 kg/m^2	192	**1.29 (1.10, 1.52)**	779	0.93 (0.85, 1.02)
BMI change per 5 kg/m^2	192	1.10 (0.91, 1.32)	779	0.96 (0.88, 1.06)
BMI change				
> -5 kg/m^2	0	0	7	1.65 (0.78, 3.49)
-5 to 5 kg/m^2	119	1.0	491	1.0
5 to 10 kg/m^2	58	1.07 (0.78, 1.48)	226	1.00 (0.85, 1.17)

Table 1. (*continued*)

	Cardia		Non-cardia	
	Cases	HR (95% CI)	Cases	HR (95% CI)
10 to 15 kg/m^2	10	1.01 (0.52, 1.95)	40	0.86 (0.62, 1.20)
>15 kg/m^2	5	2.12 (0.85, 5.32)	15	1.15 (0.68, 1.94)
BMI rate of change (kg/m^2 per year)	192	1.65 (0.42, 6.52)	779	**0.44 (0.22, 0.92)**
Weight at age 21 per 10 lbs	192	**1.11 (1.04, 1.17)**	779	**0.95 (0.91, 0.99)**
Weight at baseline per 10 lbs	192	**1.08 (1.03, 1.13)**	779	**0.96 (0.94, 0.99)**
Weight change per 10 lbs	192	1.03 (0.97, 1.09)	779	0.98 (0.95, 1.01)
Weight change				
> -10 lbs	5	0.52 (0.21, 1.31)	30	1.04 (0.70, 1.54)
-10 to 10 lbs	47	1.0	151	1.0
10 to 30 lbs	58	0.57 (0.38, 0.83)	302	0.95 (0.78, 1.16)
30 to 50 lbs	52	0.78 (0.52, 1.17)	184	0.94 (0.75, 1.17)
>50 lbs	30	0.74 (0.46, 1.19)	112	0.91 (0.70, 1.18)
Weight rate of change (10lbs per year)	192	1.08 (0.87, 1.34)	779	**0.86 (0.77, 0.97)**

S1611

Autoimmune Gastrointestinal Dysmotility Associated Gastroparesis (AGID-G): Seropositive Versus Seronegative Phenotypes

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Introduction: Autoimmune gastrointestinal dysmotility (AGID) is a consequence of autoimmune autonomic neuropathy and is a known cause of gastroparesis. The diagnosis of AGID-associated gastroparesis (AGID-G) often includes the identification of a neuronal autoantibody in the presence of dysautonomia and gastroparesis (seropositive disease). However, there is growing awareness of seronegative AGID-G. The aim of this study is to explore differences in clinical presentation and response to treatment between seronegative and seropositive AGID-G patients.
Methods: A retrospective study was conducted of 2,729 adult patients who underwent paraneoplastic/neuronal antibody testing. Within this cohort, patients with gastroparesis were identified based on >10% retention of test meal at 4 hours during egg-toast meal gastric emptying study (GES). A diagnosis of AGID-G was confirmed by GI and/or neurology clinical documentation. Fischer's exact test and t-test were used. A *P*-value of ≤ 0.05 was considered statistically significant.
Results: Of 2,729 adult patients who underwent autoantibody testing at a tertiary care center, 172 (6.3%) patients had gastroparesis. Of the 172 patients, 20 had seropositive AGID-G and 20 had seronegative AGID-G (Table). Seronegative AGID-G patients were more likely to require nutritional support (PEG-J or TPN) compared to seropositive patients (55.0% vs 20%, $P = 0.048$) (Table). Notably, seronegative patients were more likely to fail PEG-J feeding and require TPN compared to seropositive patients (40% vs 5%, $P = 0.02$). There were no statistically significant differences regarding age at gastroparesis diagnosis, gender, % retained at 4 hours during GES, immunosuppressive treatments tried, or response to immunosuppressive treatments . There was no clear trend regarding specific antibodies within the seropositive AGID-G cohort.
Conclusion: Seronegative AGID-G patients were more likely to require nutritional support with either PEG-J enteral feeding or TPN, despite other clinical factors being similar. These results support: 1) a more severe disease course or more severe symptomatology for the seronegative phenotype or 2) treatment delay in seronegative disease until later in disease course when nutritional support is needed. Both possibilities have significant clinical implications and need to be investigated further. Providers need to be aware and vigilant of seronegative AGID-G, and this study provides evidence the approach to seronegative AGID-G may need to be revised.

Table 1. **Comparison of seropositive and seronegative gastroparesis patients with AGID (AGID-G)**

	Seropositive AGID-G (n=20)	Seronegative AGID-G (n=20)	*P* value
Gender			0.09
Female	14	19	
Male	6	1	
Age at gastroparesis diagnosis (mean years, SD)	43.7 (16.4)	37.7 (15.1)	0.24
GI dysmotility Dx			NS
Diarrhea	1 (5%)	1 (5%)	
Constipation	14 (70%)	15 (75%)	
Gastroparesis	20 (100%)	20 (100%)	
Rapid gastric emptying	1 (5%)	1 (5%)	
CIPO/SB dysmotility	2 (10%)	1 (5%)	
Accelerated SB transit	1 (10%)	0 (0%)	
% retained at 4hr on GES (mean %, SD)	34.6% (31.7)	29.0% (25.6)	0.54
Severe (>35% retained)	6 (30%)	5 (25%)	
Nutritional support needed			
PEG-J enteral feeding	4 (20%)	11 (55%)	0.048
TPN	1 (5%)	8 (40%)	0.02
Treatments tried			
At least 1 immunosuppressive	6 (30%)	12 (50%)	0.11
IVIG	5 (25%)	10 (50%)	

Table 1. (*continued*)

	Seropositive AGID-G (n=20)	Seronegative AGID-G (n=20)	*P* value
Steroid	3 (15%)	5 (25%)	
Rituximab	2 (10%)	4(20%)	
Cellcept	2 (10%)	2 (10%)	
Apheresis	0 (0%)	1 (5%)	

S1612

High Seroprevalence of *Helicobacter pylori* and CagA/VacA Virulence Factors in Northern Central America

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Introduction: *Helicobacter pylori* (Hp) infection is the leading cause of gastric cancer (GC). Northern Central America is the principal LMIC region in the Western Hemisphere and has among the highest GC incidence. We examined the Hp seroprevalence and active infection, and the Hp virulence factors VacA/CagA positivity of healthy individuals in the region using a novel validated Hp assay.
Methods: Healthy volunteers from Western Honduras and Central Guatemala were recruited. The novel Hp Multiplex assay was used to evaluate 13 Hp antigens (CagA, VacA, GroEl, UreA, HP0231, HP0305, NapA, HpaA, HcpC, HP1564, Catalase, Cad, HyuA). Per protocol, Hp positivity was defined as positivity for ≥4 antigens, and active infection was defined as positivity to a combination of 2 out of the 4 antigens (VacA, GroEl, HcpC, HP1564). Descriptive statistics for continuous variables and frequencies for categorical variables were computed. Categorical variables were compared using Chi2.
Results: Overall, 1,143 adults were tested with the multiplex assay (Guatemala n=444, Honduras=699). The mean age was 54.2±14.5 years, 46.2% were male, 60% of individuals were from rural settings and 56% lived above >1000 meters. Hp seropositivity was 87%, and 83% had active Hp infection. CagA and VacA seropositivity was 82% and 75% respectively. No significant differences were noted according to country, age group, gender, or rural/urban location. The most frequent occupations were domestic work and agriculture (40% and 19% respectively). Around half (53%) of individuals had a refrigerator, and 34% had an electric or gas stove. 44% and 16% were either current or former tobacco smokers in Guatemala and Honduras, respectively. 43% noted alcohol use (Table).
Conclusion: An extremely high seroprevalence of Hp and CagA/VacA is observed in Honduras and Guatemala and is representative of Northern Central America. This correlates with the high burden of GC in the region, and has implications for regional prevention programs as well as immigrant populations in the U.S.

Table 1. **General characteristics of population (N=1,143)**

	Total	Guatemala	Honduras
N	1143	444	699
Age, mean (SD)	54.2 (14.5)	55.4 (10.7)	53.4 (16.5)
Age, categories			
18-45	309 (27.0%)	90 (20.3%)	219 (31.3%)
45-54	297 (26.0%)	138 (31.1%)	159 (22.7%)
55-64	269 (23.5%)	122 (27.5%)	147 (21.0%)
>65	268 (23.4%)	94 (21.2%)	174 (24.9%)
Sex			
Female	615 (53.8%)	255 (57.4%)	360 (51.5%)
Male	528 (46.2%)	189 (42.6%)	339 (48.5%)
Rural setting	683 (59.8%)	272 (61.3%)	411 (58.8%)
Altitude (mamsl), mean (SD)	1087.9 (453.7)	1250.8 (644.6)	983.4 (209.2)
Altitude (>1000mamsl)	641 (56.4%)	272 (61.3%)	369 (53.3%)
Occupation			
Professional	38 (3.3%)	9 (2.0%)	29 (4.1%)
Technician	39 (3.4%)	2 (0.5%)	37 (5.3%)
Artisan or vendor	239 (20.9%)	182 (41.0%)	57 (8.2%)
Construction	44 (3.8%)	21 (4.7%)	23 (3.3%)
Agriculture	221 (19.3%)	54 (12.2%)	167 (23.9%)
Household/domestic work	457 (40.0%)	144 (32.4%)	313 (44.8%)
Other or not available	105 (9.2%)	32 (7.2%)	73 (10.4%)
BMI, median (IQR)	25.7 (22.7, 29.7)	27.4 (23.9, 30.7)	24.8 (21.9, 28.7)
BMI, categories			
Underweight	36 (3.2%)	5 (1.1%)	31 (4.5%)
Normal	471 (41.9%)	148 (33.6%)	323 (47.3%)
Overweight	352 (31.3%)	155 (35.2%)	197 (28.8%)
Obese	264 (23.5%)	132 (30.0%)	132 (19.3%)
Tobacco smoker	310 (27.1%)	196 (44.1%)	114 (16.3%)
Recent antibiotic use	78 (6.8%)	55 (12.4%)	23 (3.3%)
Refrigerator use	608 (53.2%)	200 (45.0%)	408 (58.4%)
Alcohol	488 (42.7%)	321 (72.3%)	167 (23.9%)
Electric or gas stove	387 (33.9%)	265 (59.7%)	122 (17.5%)
H. pylori serostatus (positive)	993 (86.9%)	387 (87.2%)	606 (86.7%)

Table 1. (*continued*)

	Total	Guatemala	Honduras
H. pylori active infection	949 (83.0%)	378 (85.1%)	571 (81.7%)
CagA status (positive)	941 (82.4%)	402 (90.7%)	539 (77.1%)
VacA status (positive)	861 (75.4%)	368 (83.1%)	493 (70.5%)

S1613

Short Term Outcomes of Gastric Per Oral Endoscopic Pyloromyotomy (GPOEM) Seven Years Ago and Now

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Introduction: Gastric per oral endoscopic pyloromyotomy (GPOEM) has been performed in the last 7 years or so. Many studies have shown that GPOEM is 80% effective in reducing nausea and vomiting in patients with refractory gastroparesis (Gp) with mean procedure time of about 1 hr. However, all reported outcomes of GPOEM were from the earlier stage of performed patients. In this study, we compare the short-term outcomes of our first and recent 16 patients.
Methods: Our first 16 patients who underwent GPOEM from 06/2015 to 07/2016 (Group A) and our recent 16 patients from 07/2021 to 01/2022 (Group B) were enrolled in the study. Patients' demographics, clinic outcomes of GPOEM and procedure time were compared between the 2 groups. Clinical success was defined as an improvement in symptoms as measured by a decrease in mean GCSI and a significant decrease in at least 2 subsets of cardinal symptoms. The procedure time was defined as the duration from scope in and scope out. All procedures were performed by QC (who performed a hundred POEM before his first GPOEM).
Results: The mean age for group A and group B were 44.8 ± 14.8 and 47.8 ± 18.8 years (Table). Group A had 13 female pts; group B had 12. The number of diabetic, idiopathic and post-surgical Gp were 9, 5, 2 for Group A and 8, 4 and 4 for Group B. All pts failed medical treatment. Four patients in Group A and one patient in Group B had gastric electrical stimulator. In Group A, 13 out of 16 pts (81%) had a significant improvement in the mean GCSI after GPOEM: 3.40 ± 0.50 before the procedure (n= 16) to 1.48 ± 0.95 ($P < 0.0001$) at 1 month (n= 16). In Group B, 14 out of 16 pts (88%) had significant improvement in the mean GCSI after GPOEM: 3.35 ± 0.70 before the procedure (n=16) to 1.51 ± 0.82 ($P < 0.0001$) at 56 ± 22.6 days (n=15; one pt had no follow up). There were no significant differences between the 2 group in terms of pts demographics and short clinical outcomes. There was a significant difference in procedure time and the length of hospital stay (LOS) between the 2 groups: the procedure times were 49.7 ± 22.1 and 29.6 ± 10.1 minutes for Group A and Group B respectively. The LOS were 2.47 ± 0.7 and 1.18 ± 0.4 days respectively. No adverse events were reported for both groups.
Conclusion: For an experienced submucosal endoscopist, there were no differences between the short- term clinical outcomes of GPOEM between 7 years ago and now. However, the procedure time and the length of hospital stay was significantly shorter after 7 years of practice.

Table 1. **Results for Group A and B**

	Group A	Group B
sample size (n)	16	16
mean age (yrs)	44.8 ± 14.8	47.8 ± 18.8
# of females	13	12
diabetes (# of pts)	9	8
idiopathic (# of pts)	5	4
post surgical gastroparesis (# of pts)	2	4
Gastric electrical stimulator (# of pts)	4	1
mean GCSI pre-GPOEM	3.40 ± 0.50	3.35 ± 0.70
mean GCSI post-GPOEM	1.48 ± 0.95 ($P < 0.0001$)	1.51 ± 0.82 ($P < 0.0001$)
mean procedure time (minutes)	49.7 ± 22.1	29.6 ± 10.1
length of hospital stay (days)	2.47 ± 0.7	1.18 ± 0.4

S1614

Lower Household Income Is Associated With Decreased Gastric Cancer Survival

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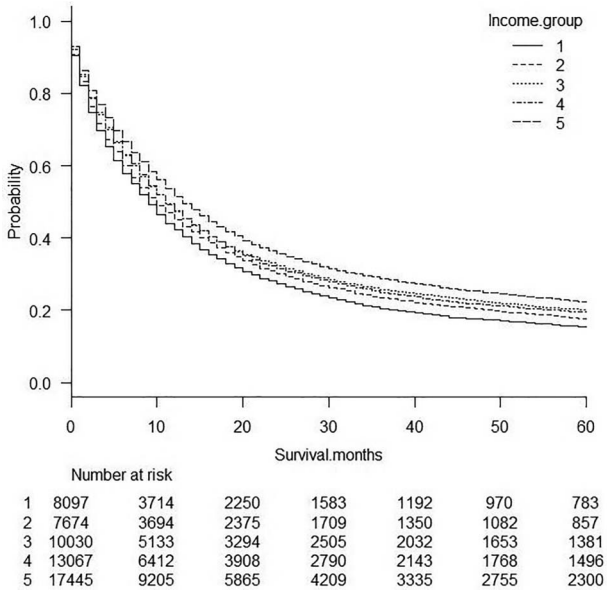
Introduction: Previous studies have suggested the presence of racial disparity in gastric cancer survival. However, there is a paucity of data evaluating the presence of disparities based on household income in gastric cancer survival. This study aimed to evaluate the survival of gastric cancer by household income in the United States.
Methods: This is a SEER database-based study to identify patients with gastric cancer diagnosed between 2007 and 2018 using ICD-O-3 site codes C16.0-16.9 and histology codes 8140/3, 8211/3, 8260/3, 8480/3, and 8490/3. We then divided patients into 5 groups based on household income: Group 1: < $50,000, 2: $50,000-59,999, 3: $60,000-64,999, 4: $65,000-74,999, and 5: ≥$75,000. Categorical and continuous variables were analyzed with the Chi-Square test and the Mann-Whitney U test. The Kaplan-Meier survival curve compared survival. A multivariate analysis was done with the Cox proportional hazard regression model.
Results: We identified 56,313 (Group 1: 8,097, 2: 7,674: 3: 10,030, 4: 13,067, 5: 17,445) patients with a median age of 67 years. For White and Asian and Pacific Islanders (API), more patients are classified as groups 4 and 5. Hispanic patients are classified as groups 3, 4, and 5. Black patients are classified as group 1. Alaskan Natives and American Indians (AIAN) patients are classified as groups 1, 2, and 5. Group 5 was more likely to undergo surgical treatment. Overall survival was 11 (95% CI: 11-11) months. The survival of each group is group 1: 9 (95% CI: 9-10), 2: 10 (10-11), 3: 11 (11-12), 4: 11 (11-12), and 5: 13 months (13-14) ($P< 0.001$). This trend was observed in stratified analysis based on race and cancer stages. Notably, API showed lower survival for groups 1: 13 (9-16) and 2: 10 (8-13) compared to groups 3: 15 (14-17), 4: 17 (15-19), and 5: 17 months (16-19). Contrary, Black showed a less pronounced difference by groups as follows: group 1: 9 (8-9), 2: 9 (8-11), 3: 9 (8-9), 4: 9 (9-11), and 5: 11 months (10-13). A multivariate analysis by Cox proportional hazard showed that the hazard ratio for group 2 was 0.95 (95% CI: 0.91-0.98), 3 was 0.88 (0.85-0.91), 4 was 0.89 (0.86-0.92), and 5 was 0.83 (0.81-0.86) in comparison to group 1.
Conclusion: This study showed a significant difference in survival based on household income (Figure). Black and AIAN had poorer survival regardless of household income than other races. Further studies are needed to elucidate the solutions to decrease survival differences by household income.



[1614] **Figure 1.** The Kaplan-Meier survival curve based on median household income groups. The survival of each group is group 1: 9 (95% CI: 9-10), 2: 10 (10-11), 3: 11 (11-12), 4: 11 (11-12), and 5: 13 months (13-14) (P<0.001).

S1615

Clinical Outcome of Endoscopic Submucosal Dissection for Early Gastric Cancer: A Retrospective Single Center Study

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Introduction: Endoscopic submucosal dissection (ESD) is a minimally invasive treatment for early gastric cancer without the risk of lymph node metastasis. However, the outcomes in the United States are not well studied because of the low prevalence of gastric cancer. We aimed to assess the efficacy and safety of ESD for early gastric cancer in the United States.
Methods: We performed a single-center retrospective analysis of patients who underwent gastric ESD between June 2018 and December 2021. The main outcome measures were en-bloc resection rate, R0 (complete) resection rate, procedure time, tumor size, hospital length of stay (LOS), histology, and complication rate.
Results: In total, 46 patients were included (Table). The median age was 71 years (range, 68.9-76.8 years). En-bloc and R0 resection rates were 94.5% and 81.8%, respectively. The median procedure time was 87.5 min (range, 69.3-118.8 min). The median tumor size was 26mm (range, 20-35 mm). The mean hospital length of stay was 1.87±1.38 days. The most common histologic type was pT1a (45.7%), followed by pT1b (26.1%), adenoma with low-grade dysplasia (13.0%), adenoma with high-grade dysplasia (10.9%), and neuroendocrine tumor (4.3%). There were 3 adverse events all of which were delayed bleeding and no perforations were reported.
Conclusion: Our study showed that gastric ESD is a safe and effective method for superficial gastric neoplasia. ESD should be considered for patients with suitable lesions in the U.S.

Table 1. **Baseline Characteristics and Outcomes of Gastric Endoscopic Submucosal Dissection ESD, endoscopic submucosal dissection; EMR, endoscopic mucosal dissection; LGD, low-grade dysplasia; HGD, high-grade dysplasia**

Baseline characteristics	Age, y, median (IQR)		71 (68.9-76.8)	
	Sex, men/women, n		30/16	
	ASA class, n (%)	I	0	0
		II	0	0
		III	5	10.9
		IV	41	89.1
	Lesion site, n (%)	Antrum	10	21.7
		Body	13	28.3
		Greater curvature	1	2.2
		Lesser curvature	5	10.9
		Cardia	12	26.1
		Incisura angularis	5	10.9
	Type of injection, n (%)	Eleview	11	23.9
		Orise	35	76.1
	Type of primary knife for ESD, n (%)	Dual knife	29	63.0
		ProKnife	17	37.0
	Anesthesia, n (%)	Propofol	7	15.2
		General anesthesia	39	84.8
	Interventions before ESD, n (%)	Tattoo underneath lesion	6	13.0
		Scar underneath lesion	10	21.7
		Radiofrequency ablation	1	2.2
		ESD	4	8.7
		EMR	4	8.7

Table 1. (*continued*)

Outcomes	En bloc resection, n (%)		43	93.5
	R0 resection, n (%)		36	78.3
	Procedure time, min, median (IQR)		87.5 (69.3 - 118.8)	
	Tumor size, mm, median (IQR)		26 (20 - 35)	
	Length of hospital stay, d, mean ± SD		1.8 ± 1.4	
	Histology, n (%)	Adenoma with LGD	6	13.0
		Adenoma with HGD	5	10.9
		pT1a	21	45.7
		pT1b	12	26.1
		Neuroendocrine tumor	2	4.3
	Adverse event, n (%)	Delayed bleeding	3	6.5
		Perforation	3	6.5
		Infection	0	0

S1616

Outcomes of Hospitalized Patients for Gastroparesis With History of Generalized Anxiety Disorder

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Introduction: Gastroparesis is a disease of delayed gastric emptying with symptoms of early satiety, nausea, and vomiting. Common causes include diabetes mellitus, surgery, and viral infections. Anxiety disorders can have somatic aspects such as nausea and vomiting. Generalized anxiety disorder (GAD) is a prevalent anxiety disorder. This study investigates how a history of GAD impacts the outcomes of hospitalized patients with gastroparesis.
Methods: Using the 2014 National Inpatient Sample database, hospitalized patients with a diagnosis of gastroparesis were selected based on *ICD-9* codes. Demographic data and outcomes were compared between hospitalized gastroparesis patients with GAD and without GAD. The outcomes assessed were inpatient mortality, perforation, obstruction, myocardial infarction (MI), hypotension/shock, hepatic failure, acute deep venous thrombosis (DVT), sepsis, respiratory failure, and acute renal failure (AKI). These outcomes were compared via chi-squared tests and independent t-tests. A multivariate logistic regression analysis was performed to assess if GAD is an independent predictor of the outcomes, after adjusting for age, sex, race, and Charlson Comorbidity Index (CCI).
Results: A total of 22,150 hospitalized patients with gastroparesis were identified during the year 2014. 4,196 had a comorbid diagnosis of GAD. Hospitalized patients with gastroparesis and GAD were noted to be younger (46.8 vs 48.1 years old, $P< 0.001$), more likely to be female (79.2% vs 66.1%, $P< 0.001$), more likely to be White (71.8% vs 55.9%, $P< 0.001$), had a lower CCI (2.25 vs 2.58, $P< 0.001$), and had an increased length of stay (4.7 vs 4.5 days, $P=0.024$). Total hospital charges were not significantly different ($P=0.696$) between patients with and without GAD. Notably, GAD is an independent risk factor for AKI (Adjusted odds ratio (aOR) 1.24, 95% confidence interval (CI) 1.11-1.39, $P< 0.001$). GAD was not found to be a risk factor for respiratory failure ($P=0.583$), sepsis ($P=0.455$), DVT ($P=0.259$), hypotension/shock ($P=0.808$), MI ($P=0.256$), obstruction ($P=0.928$), and inpatient mortality ($P=0.476$). Samples sizes for hepatic failure and perforation were too small to perform further analyses.
Conclusion: This study demonstrated that GAD is an independent risk factor for AKI in adults hospitalized for gastroparesis. This finding may be attributed to increased severity of gastroparesis associated with anxiety, likely leading to poor oral intake and AKI.

S1617

Incomplete Intestinal Metaplasia Is Rare in Autoimmune Gastritis

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Introduction: Incomplete intestinal metaplasia (IM) is reportedly associated with greater risk for gastric cancer (GC). AGA Guidelines recommend including IM type in pathology reports. In a long-term follow-up of a large cohort of patients with Helicobacter-naïve autoimmune atrophic gastritis (AIG), we did not detect any excess risk for CG (Rugge et al. Gut, In press). We hypothesized that if incomplete IM is a reliable harbinger of GC, it should be uncommon in patients with AIG.
Methods: We assessed the IM type in biopsies from 377 subjects with IM and one of the following gastric phenotypes: 1) minimal-change gastritis (MCG – 58 subjects); 2) reactive gastropathy (RG – 135 subjects); 3) *H. pylori* chronic active gastritis (Hp-CAG, 136 subjects); 4) AIG (48 subjects). To minimize inclusion of patients with previous *H. pylori* infection we used strict criteria for the diagnosis of AIG, (uninflamed antrum without IM; corpus-restricted atrophy; and ECL-cell hyperplasia). All biopsies were reviewed to confirm diagnosis and location and to categorize the type of IM (complete or incomplete). The prevalence of incomplete IM was compared across gastritis groups. Differences were evaluated using odds ratios (OR) and their 95% confidence intervals (95% CI).
Results: Table 1 summarizes the prevalence of incomplete IM in the 4 different groups. Compared to subjects with H. pylori-CAG, those with AIG were >4 times less likely to have the incomplete type of IM (OR 0.23; 0.08 – 0.70; $P < .01$)
Conclusion: Compared to subjects with *H. pylori* gastritis – a condition known to carry a high risk of GC – patients with AIG had a low prevalence of incomplete IM, providing further support to the concept that AIG, in the absence of previous or concurrent Helicobacter infection, is not associated with a high GC risk. Most studies suggesting a GC risk associated with AIG likely included patients from the pre-Helicobacter era, and the cancer risk may have been induced by unrecognized *H. pylori* infection.

Table 1. **Prevalence of incomplete IM in 4 gastric phenotypes**

Phenotype of the gastric mucosa	Total cases	Median Age (range)	Female (%)	Incomplete IM (%)
Atrophic autoimmune gastritis	48	68 (40 – 82)	33 (68.8)	4 (8.3)
H. pylori gastritis	136	66 (30 – 90)	78 (57.4)	53 (38.2)
Reactive gastropathy	135	61 (14 – 96)	86 (63.7)	7 (5.2)
Normal	58	59 (7 – 91)	37 (63.8)	0

S1618

In Patients With Limited Extent Intestinal Metaplasia the Determination of the Subtype May Be Crucial for Stratification of Their Gastric Cancer Risk

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Introduction: In patients with gastric intestinal metaplasia (IM), extensive intestinal metaplasia, which is defined as IM that involves the oxyntic mucosa, and the incomplete subtype of IM are 2 histologic findings that are associated with increased risk of developing gastric dysplasia and gastric cancer (GC). Secondary to a geometric correlation that has been detected between the extent of IM and proportion of incomplete-type IM, some experts argue that extent alone is a sufficient parameter for risk stratification in these patients. The aim of this study was to determine the proportion of complete and incomplete IM in patients with limited and extensive disease.

Methods: We prospectively analyzed the biopsies from 341 patients with IM and, at a minimum, biopsies of both antrum and oxyntic mucosa. Three gastrointestinal pathologists (RG, CR, KT) reviewed all cases and recorded the type and location of IM. In keeping with the recent AGA guidelines for the management of gastric IM, cases with IM in the oxyntic mucosa were classified as extensive; cases with mixed complete and incomplete IM were classified as incomplete IM. The percentage of incomplete IM in the 2 groups was compared by calculating odds ratios (OR with 95% CI).
Results: There were 199 (58.4%) patients with limited IM and 142 (41.6%) with extensive IM. Among those with limited IM, 146 (73.3%) had complete IM and 53 (26.6%) had incomplete IM (Table). Among those with extensive IM, 84 (59.2%) had complete IM and 58 (40.8%) had incomplete IM (OR 1.90; 1.20 – 3.01; $P< .01$).
Conclusion: Compared to patients with limited IM, patients with extensive IM had approximately twice the risk for incomplete IM. However, our study also shows that in patients with limited IM, who would not be considered at increased risk for dysplasia and GC by the AGA guidelines, over a quarter have incomplete IM, which would put them in the increased risk category. Therefore, relying solely on extent might result in the misclassification of patients who are at increased risk for dysplasia and GC. Until there are more robust methods to stratify risk in the evolving field of GC prevention, we suggest that optimal screening strategies can be substantially aided by reporting both extent and subtype of gastric IM.

Table 1. Proportions of complete and incomplete type intestinal metaplasia in patients with limited and extensive intestinal metaplasia

	Complete IM	Incomplete IM
Limited IM (199)	146 (73.3%)	53 (26.6%)
Extensive IM (142)	84 (59.2%)	58 (40.8%) (OR 1.90; 1.20 - 3.01)

S1619

Prevalence of Gastrointestinal Inflammation Beyond the Small Intestine in Celiac Disease

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Introduction: Celiac disease (CD) is an autoimmune-mediated sensitivity to gluten with a global prevalence of 1.4% based on serologic test results and 0.7% based on biopsy results. We hypothesize that CD is not a small bowel (SB) limited process but instead involves the pan-gastrointestinal tract. Therefore, we aim to determine the proportion of CD patients with gastrointestinal (GI) inflammation beyond the SB.
Methods: We identified 300 patients with CD seen at our institution from 2017-2021 using ICD codes. Chart review was performed and clinical information related to CD and endoscopic evaluation was entered into RedCap. Data were analyzed for descriptive statistics; categorical variables were compared with Chi-square or Fisher's exact test as appropriate.
Results: Of 300 patients with CD, 211 (70.3%) were females and 262 (87.3%) were Caucasians. The presenting symptoms were abdominal pain (126, 42.0%), abdominal distention/bloating (100, 33.3%), diarrhea (84, 28.0%), lethargy (53, 17.7%), nausea/vomiting (53, 17.7%), unintentional weight loss (42, 14.0%), constipation (30, 10.0%) and steatorrhea (1, 0.3%). Extra intestinal involvement included hematological (27%), mucocutaneous (14.3%), metabolic bone disease (20.3%) and neuropsychiatric (10%). Of 300 patients, 259 had serological testing and 80% were positive for at least one serological marker. Histological findings suggestive or diagnostic of CD on duodenal biopsy were found in 210 (70%). Amongst these patients, 74.7% (n=157) had gastritis (90%), lymphocytic predominance (32%), metaplasia (5%) and mucosal atrophy (5%). 33% (n=69) of the patients had findings on esophageal biopsies notable for esophagitis (70%), lymphocytic esophagitis (19%) and EOE (16%). Patients with positive SB biopsy findings had higher odds of having positive findings on esophageal and/or gastric biopsies (P=0.0001) (Table). Only 91 (30%) patients had colonoscopy at the time or during the diagnosis of CD, out of which random biopsies were obtained in 18 patients with 33% being abnormal in form of lymphocytic colitis (33.3%), ulceration (16%), and erosions (5%).
Conclusion: The results of this study suggest a broader GI process rather than enteropathy limited to the SB. Further studies are required to test the strength of association between the GI inflammatory disorders identified and CD.

Table 1. Association Between Small Bowel findings and Esophageal or Gastric Findings

	Small Bowel Positive Biopsy	Small Bowel Negative Biopsy	*P*-value
Esophageal biopsy			
Positive	69	3	
Negative	100	46	P=0.0001*
	169	49	
Gastric biopsy			
Positive	157	14	
Negative	53	36	P=0.0001
	210	50	

*Fischer's exact test.

S1620

Association of Insurance Status with Survival and Disease Stage at Presentation of Gastric Cancer: A National Cancer Database Analysis

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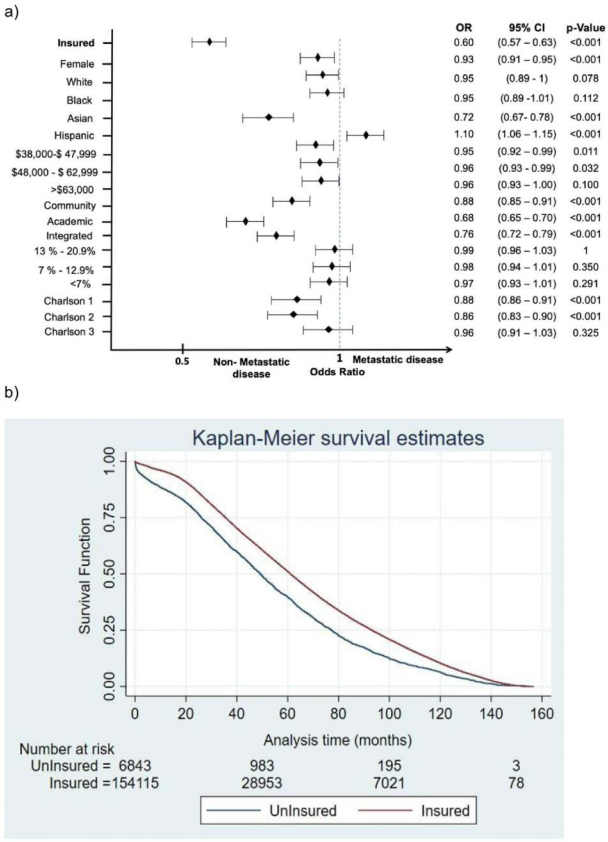
Introduction: In the US, 9.6% of the population (31 million people) do not have health insurance. Uninsured patients with cancer are more likely to present with advanced disease, not receive equal treatment, and display worse survival than those with insurance. Gastric cancer is one of the leading causes of death worldwide, and curative treatment depends on the disease stage at the time of diagnosis. The purpose of this study is to determine the association of insurance status with disease stage at presentation and survival among patients diagnosed with gastric cancer using the National Cancer Database (NCDB).
Methods: The analysis cohort included gastric cancer patients in the NCDB diagnosed from 2010 to 2015. Patients were excluded if no information was available regarding insurance status or cancer staging at the time of diagnosis. Multivariable logistic regression models were used to determine the association between insurance status and gastric cancer stage at diagnosis/presentation. Cox regression models were used to determine the association between insurance status and all-cause mortality.
Results: Following exclusions, 178,641 patients had gastric cancer during the study period. 171,199 patients (95.8%) had insurance in comparison to 7,442 patients (4.2%) who were uninsured. Univariate analysis between the groups demonstrated a statistically significant higher proportion of poor differentiation (53.2%), advanced disease (46.2%), and metastasis (41.9%) at diagnosis in the uninsured group (Table). After adjusting for demographic and socioeconomic variables, being insured was the main predictor for not having metastatic disease at diagnosis (OR = 0.60 [95% CI, 0.57-0.63]). Median time to all-cause mortality was estimated at 45 months for uninsured patients vs 60 months for insured patients (Figure).
Conclusion: There is an association between insurance status and disease stage at time of diagnosis for patients with gastric cancer. Patients without insurance present with advanced disease and have a lower survival rate compared to insured patients. Lack of insurance compromises a person's health because they are less likely to receive preventive care, are less able to afford prescription drugs, are more likely to be hospitalized for avoidable health problems, are more likely to be diagnosed in the late stages of disease, and once diagnosed tend to receive less therapeutic care.



[1620] **Figure 1.** a. Predictors of non-metastatic vs metastatic disease b. Kaplan-Meier Survival Estimates.

Table 1. Tumor Characteristics

	Insured (n= 171,199)	Uninsured (n= 7,442)	*P*-value
Tumor size, mean (standard deviation), cm	4.42 +/- 4.6	5.50 +/- 4.7	< 0.001
Differentiation grade, No. (%)			< 0.001
Well differentiated	12,244 (7.15)	384 (5.16)	
Moderately differentiated	36,394 (21.26)	1,230 (16.53)	
Poorly differentiated	78,541 (45.88)	3,960 (53.21)	
Undifferentiated, anaplastic	3,076 (1.80)	114 (1.53)	
Cell type not determined	40,944 (23.92)	1,754 (23.57)	
Tumor Stage at diagnosis, No. (%)			< 0.001
Stage 0	3,081 (1.80)	40 (0.54)	
Stage I	35,769 (20.89)	852 (11.45)	
Stage II	21,970 (12.83)	723 (9.72)	
Stage III	27,921 (16.31)	1,159 (15.57)	
Stage IV	51,726 (30.21)	3,436 (46.17)	
Not applicable	5,066 (2.96)	205 (2.75)	
Unknown	25,666 (14.99)	1,027 (13.80)	
Metastatic disease, No. (%)			< 0.001
No	115,122 (70.82)	3,815 (55.10)	
Yes	42,370 (26.07)	2,906 (41.97)	
Not Applicable	5,058 (3.11)	203 (2.93)	

S1621

Evaluating Knowledge and Approach Towards *Helicobacter pylori* Diagnosis and Management Among Primary Care Physicians in Cameroon, West Africa

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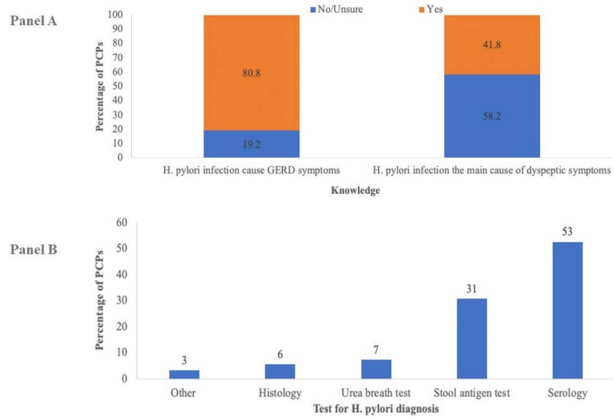
Introduction: Low-middle income countries have high *Helicobacter pylori* prevalence, with acquisition mostly in early childhood. Recent studies from Africa show especially high rates of resistance to first-line antibiotics used to treat *H. pylori*. We sought to assess the knowledge and practices of primary care physicians (PCPs) in the diagnosis and management of *H. pylori* infection in Cameroon.
Methods: A hospital-based cross-sectional study was conducted in 4 randomly selected regions of Cameroon, from November 2021 to June 2022. PCPs were recruited by non-probability convenience sampling and interviewed by pre-structured questionnaire on knowledge and approach to *H. pylori* diagnosis and management. Chi-square, Fisher exact, and Student's t-tests were performed for descriptive analyses. Multivariable logistic regression was used to examine associations between knowledge and practice, with the model adjusted by PCP age, geographic region, number of patients, and years in practice. Analysis was performed in SAS version 9.4.
Results: A total of 382 PCPs were included (Table). Most (60%) were males, between the ages of 26 – 30 years (60%). The majority had been 2 – 6 years in practice (57%), saw < 10 patients per day (54%), and had not attended postgraduate training on *H. pylori* (87%). About 80% of PCPs considered *H. pylori* the cause of GERD symptoms, and about 42% thought *H. pylori* the main cause of dyspepsia (Figure). The dominant diagnostic tests used were serology (53%) and stool antigen (31%). The most prescribed antibiotics for *H. pylori* eradication were Amoxicillin (AMX, 83%), Clarithromycin (CLA, 74%), and Metronidazole (MNZ, 65%). The most frequently used first-line therapies were AMX/CLA/MNZ & PPI concomitant (40%), AMX/CLA/PPI triple (22%), and AMX/MNZ/PPI triple (15%). Forty-eight percent of PCPs stated they treated *H. pylori* infection without a confirmed diagnosis; 38% reported not treating asymptomatic cases with a positive *H. pylori* test or referring such cases to a gastroenterologist; 52% request laboratory confirmation of *H. pylori* eradication, with the majority (58%) using serology. If first-line therapy fails, 54% of PCPs then refer to gastroenterologists. Large gaps exist between PCP perception of guidelines versus actual practice for *H. pylori* diagnostic tests: serology (75%), stool antigen (83%), or urea breath (87%).
Conclusion: The majority of PCPS lack the knowledge for adequate diagnosis and management of *H. pylori*. Strategies targeting PCP education are needed to improve the management of *H. pylori* infection in Cameroon.



[1621] **Figure 1.** Knowledge (Panel A) and approach (Panel B) of Primary Care Providers (PCPs) regarding diagnosis of *H. pylori* infection in Cameroon, 2022.

Table 1. Population characteristics of primary care physicians in Cameroon, 2022

Age	n (%)
21 – 25 years old	64 (17.5)
26 – 30 years old	218 (59.7)
30 – 59 years old	83 (22.7)
Gender	
Female	148 (38.7)
Male	229 (60.0)
Prefer not to say	5 (1.3)
School of Training	
FHS Bamenda	67 (17.5)
FHS Buea	99 (25.9)
FMBS Yaoundé	23 (6.0)
FMPS Douala	81 (21.2)
ISS UDM Bangante	31 (8.1)
ISTM Nkolondom	13 (3.4)
Trained abroad	68 (17.8)
Region of Practice	
Littoral	144 (37.7)
Northwest	74 (19.4)
Southwest	95 (24.9)
West	69 (18.1)
Years in Practice	
Less than 2 years	122 (33.4)

Table 1. (*continued*)	
2 - 6 years	210 (57.3)
6 or more years	33 (9.0)
Number of patients per day	
≤ 10	197 (54.12)
10 - 19	128 (35.2)
≥ 20	39 (10.7)
Attended postgraduate training and/or conferences on *H. pylori*	
No/Unsure	330 (86.8)
Yes	50 (13.2)

S1622

Clinicopathological Features and Gastric Motor Functions in Patients With Eosinophilic Gastroenteritis: A Retrospective Single Center Audit

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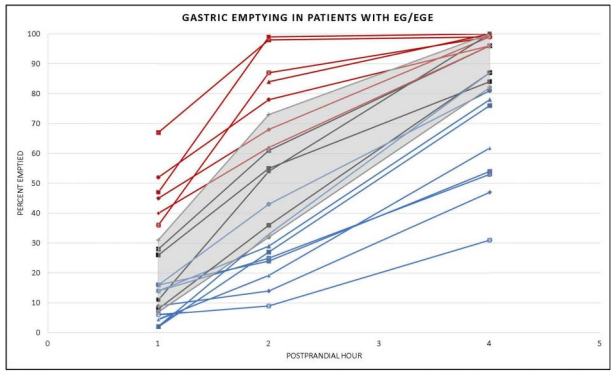
Introduction: Eosinophilic gastroenteritis (EGE) is characterized by upper gastrointestinal symptoms, eosinophilic infiltration, and absence of other causes of tissue eosinophilia. Numbers and distributions of eosinophils required for mucosal diagnosis have been proposed. Despite the upper GI symptoms, the association between EGE and gastric emptying and accommodation have only been reported in animal studies and case reports. Our aim was to conduct a review of clinicopathological and endoscopic features in patients with EGE in a single-center, and measurements of gastric motor functions in this cohort.
Methods: Medical records of 34 patients evaluated at Mayo Clinic Rochester with diagnosis of EGE from 2000-2022 were reviewed. Histological evidence of EGE was based on qualitative report of at least moderate infiltration or quantitation of eosinophils per hpf on biopsy. gastric emptying of solids (320kcal, 30% fat meal) and accommodation in response to 300mL Ensure were measured by validated scintigraphy and SPECT.
Results: Patients' mean age was 39.0y (range: 19-73) and 67.6% were female. Among 34 patients, 10 (29.4%) had outside diagnosis of EGE overruled upon biopsy review by an expert GI pathologist. Symptoms and comorbidities of 24 confirmed cases are summarized in the Table; 2 patients had concurrent celiac disease and 3 had inflammatory bowel disease. Most patients (79.2%) had peripheral blood eosinophilia and abnormal gastroscopic findings (72.7%). Histological reporting was heterogeneous, with 37.5% citing numbers of eosinophils (Table). Delayed (47.5%) or rapid (33.3%) gastric emptying (Table, Figure), as well as reduced gastric accommodation volume < 428mL (3, 42.9%) were documented. Patients were treated with diverse medications: prednisone (15, 62.5%), budesonide (11, 45.8%), fluticasone (4, 16.7%), cromolyn (4, 16.7%), montelukast (1, 4.2%), mepolizumab (1, 4.2%), immunomodulators (azathioprine, 6-MP, methotrexate) (3, 12.5%), and with standard approaches for gastric motor dysfunction (prokinetics, relaxatory agents). Where repeat results were available, 8 (57.1%), 12 (75%), and 4 (100%) patients showed endoscopic, histologic, and gastric emptying improvement after treatment, respectively.
Conclusion: Although understudied and in need of consensus diagnostic clinical and histological criteria, EGE is associated with altered gastric emptying and reduced accommodation and warrants further prospective studies.



[1622] **Figure 1.** Delayed (blue) or accelerated (red) gastric emptying is common among patients with eosinophilic gastroenteritis. Shaded area represents normal range of values for proportion emptied at 1, 2, and 4 hours from our prior studies using the same test meal in 319 healthy volunteers (PMID 22747676).

Table 1. Clinical features, endoscopic findings, and histopathology reports on 24 patients with eosinophilic gastroenteritis, as well as results of gastric emptying in 23 patients and gastric accommodation in 7 patients

	Data show N (%)
Symptoms	
Nausea/vomiting	19 (79.2)
Abdominal pain	19 (79.2)
Anorexia/early satiation	9 (37.5)
Bloating/distention	14 (58.3)
Weight loss	10 (41.7)
Constipation	9 (37.5)
Diarrhea	3 (12.5)
Common Comorbidities Associated with Eosinophils	
Eosinophilic esophagitis	7 (29.2)
Eosinophilic colitis	3 (12.5)
Food allergy	5 (20.8)

Table 1. (*continued*)

	Data show N (%)
Atopy (eczema, asthma, allergic rhinitis)	5 (20.8)
Endoscopic Findings	
Positive	16 (72.7)
Erythema	7 (43.8)
Erosions	5 (31.3)
Nodules	2 (12.5)
Thickened folds	5 (31.3)
Ulcerations	5 (31.3)
Edema	2 (12.5)
Negative	6 (27.3)
Histopathology Report	
Reported numbers of eosinophils	9 (37.5)
Reported severity of eosinophil infiltration*	10 (41.7)
Reported increased eosinophil infiltration only	5 (20.8)
Gastric Emptying of Solids	
Delayed	10 (47.6)
Normal**	4 (19.0)
Rapid	7 (33.3)
Gastric Accommodation	
Normal***	4 (57.1)
Impaired	3 (42.9)

*Used descriptive terms such as "mild", "moderate", "extensive", "dense", "marked", etc.
**Normal range of values for proportion emptied at 1, 2, and 4 h from our prior studies using the same test meal in 319 healthy volunteers.
***Defined as average postprandial gastric volume minus fasting volume of at least 428 mL.

S1623

A Retrospective Series on Efficacy and Course With Endoscopic Follow-Up of Endoscopic Ultrasound-Guided Gastroenterostomy (EUS-GE) for Benign Gastric Outlet Obstruction (GOO)

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Introduction: Endoscopic ultrasound-guided gastroenterostomy (EUS-GE) has gained popularity in treating malignant gastric outlet obstruction (GOO). EUS-GE has also been used to manage benign GOO with impressive technical and clinical success. The long-term efficacy and course of EUS-GE in benign GOO are important to understand given the relatively longer follow-up available, compared to malignant GOO. The aim of this study was to report on efficacy and course of EUS-GE in benign GOO.
Methods: This was a single center retrospective series. Consecutive patients who underwent EUS-GE from 1/2017 to 5/2022 for treatment of benign GOO were included. The primary outcomes were technical and clinical success. The secondary outcomes included prior endoscopic treatment, adverse events, and follow-up (clinical and endoscopic).
Results: A total of 16 patients (43.75% female; mean age 63.3 +/- 14.8 years) underwent EUS-GE for benign GOO. The etiologies included: pancreatitis (n=5), peptic stricture (n=3), non-specified inflammatory (n=3), SMA syndrome (n=2), prior anastomotic stricture (n=1), radiation-induced stricture (n=1), and hematoma (n=1). Prior endoscopic treatment was attempted in 31.25%. EUS-GE technical success and clinical success were 100%. Adverse events occurred in 12.5% of cases. Re-intervention rate was 12.5%. The 20 x 10 mm lumen-apposing stent was used in 75% of cases. The median clinical follow-up was 148.5 days (range 9 – 1444). Endoscopic follow-up was available in 9 (56.25%) cases. Of those, 3 (33.3%) had jejunal mucosal ulceration (with one fistulizing with the left ureter), while the remainder (66.7%) had normal jejunal mucosa.
Conclusion: This series adds to growing literature that EUS-GE for benign GOO is technically feasible and clinically beneficial. Unique to this series is the comment on the appearance of jejunal mucosa on endoscopic follow-up. This is an important aspect of long-term assessment of EUS-GE, especially when compared to surgical gastroenterostomy where marginal and non-marginal jejunal ulcers are possible. Major limitations of this study include the single center retrospective nature and the overall small sample size. Larger and prospective data are needed to further describe the clinical course of EUS-GE for benign GOO.

S1624

Differences in Gastroparesis Hospitalizations Between Rural and Urban Settings

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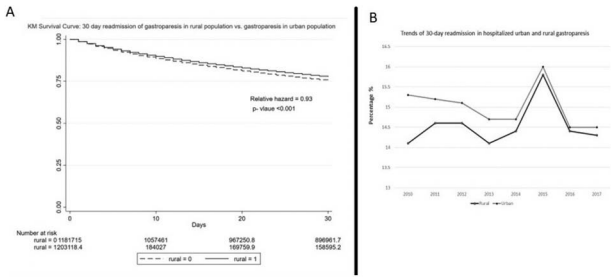
Introduction: Although gastroparesis is debilitating disease with high comorbidity burden, the data on the epidemiology of this disease is limited. We aim to determine rural vs urban differences in outcomes of hospitalized gastroparesis patients.
Methods: We utilized the National Readmission Database (2010-2017) to study the outcomes of rural and urban populations in patients with history of gastroparesis. Associations of rural population with readmission and hospital resource utilization were computed in multivariable models adjusted for age, sex, presence of hypertension, diabetes, congestive heart failure, obesity, chronic kidney disease, pneumonia, HIV, alcohol use, smoking, disposition, teaching hospital status and insurance type.
Results: During 2010 – 2017, 2,053,840 patients (mean age 52.8 ± 17.2, 65.3% females) with history of gastroparesis had indexed hospital admissions (Table). In all, 214,711 (10.5%) patients were residing in rural area. The diabetes mellitus was highly prevalent (69.7%) in gastroparesis population. Hypertension, chronic kidney disease, end stage renal disease, diabetic complications, HIV and history of malignancy were more common in urban population whereas coronary artery disease, chronic obstructive pulmonary disease were more prevalent in rural population. The 30-day readmission rates (HR: 0.89, 95% CI: 0.86-0.92), median cost ($22,634 IQR: 12,850,42,658 vs 31,394 17,443-59,734) (β: -13316, 95% CI -15264 to-11367) and median length of stay (4 days IQR: 2,6 vs 4 days IQR: 2,7 β: -0.97, 95% CI: -1.1 to -0.83) were lower in rural vs urban hospitalizations (Figure). The in-hospital mortality was similar in both groups. Diabetic ketoacidosis was the most common reason for 30-day readmission in rural population whereas diabetic neuropathy was the most common cause of readmission in urban group. The trends of 30-day readmission were improving in urban populations from 2010 to 2017.
Conclusion: The hospitalized rural gastroparesis population has lower comorbidity burden as compared to urban population. The 30-day readmission rates, hospital cost and length of stay were much lower in the rural population.



[1624] **Figure 1.** A) Kaplan Meier curve showing 30 days readmission of hospitalized rural vs urban gastroparesis population. B) Trends of 30-day readmission of gastroparesis hospitalized patient from 2010 to 2017.

Table 1. Baseline characteristics of gastroparesis indexed admissions from 2010- 2017

Variables n=number of patients		Total gastroparesis patients (n=2,384,095)	Rural population (n =330,292)	Urban population (n=2,053,840)	P-value
Age		53.0 ± 16.7	53.5 ± 16.5	52.9 ± 16.7	< 0.001
Female		1,556,551 (65.3)	214,711 (65.0)	1,341,840 (65.3)	0.27
Smoker		511,931 (21.5)	73,127 (22.1)	438,805 (21.4)	0.02
Alcohol		47,458 (2.0)	5,884 (1.8)	41,575 (2.0)	< 0.001
Obesity		405,670 (17.0)	56,092 (17.0)	349,578 (17.0)	0.86
Hypertension		1,039,488 (62.4)	134,978 (60.9)	904,510 (62.6)	< 0.001
Type 1 DM		411,749 (17.3)	59,162 (17.9)	352,587 (17.2)	0.005
Type 2 DM		1,248,767 (52.4)	175,134 (53)	1,073,634 (52.3)	0.03
Diabetic retinopathy		198,473 (8.3)	22,905 (6.9)	175,568 (8.6)	< 0.001
Diabetic neuropathy		627,526 (26.3)	88,362 (26.8)	539,164 (26.3)	0.18
Diabetic nephropathy		259,042 (10.9)	32,852 (10.0)	226,190 (11.0)	< 0.001
COPD		174,409 (7.3)	30,971 (9.4)	143,438 (7.0)	< 0.001
Coronary artery disease		565,482 (23.7)	82,628 (25.0)	482,854 (23.5)	< 0.001
Congestive heart failure		728,433 (30.6)	100,306 (30.4)	628,127 (30.6)	0.5
Chronic kidney disease		552,153 (23.2)	71,564 (21.7)	480,589 (23.4)	< 0.001
ESRD		334,265 (14.0)	35,575 (10.8)	298,690 (14.5)	< 0.001
Malnutrition		217,134 (9.1)	30,010 (9.1)	187,124 (9.1)	0.89
Pneumonia		163,785 (6.9)	26,115 (7.9)	137,670 (6.7)	< 0.001
HIV		15,842 (0.7)	1,086 (0.3)	14,757 (0.7)	< 0.001
History of malignancy		126,355 (5.3)	15,813 (4.8)	110,542 (5.4)	< 0.001
Peptic ulcer disease		200,478 (8.4)	26,184 (7.9)	174,294 (8.5)	0.005
Nonvariceal upper GI bleeding		87,294 (3.7)	10.969 (3.3)	76,325 (3.7)	< 0.001
Lower GI bleeding		86,666 (3.6)	11,792 (3.6)	74,873 (3.7)	0.34
Septic shock		36,783 (1.5)	4,540 (1.4)	32,244 (1.6)	< 0.001
ICU admission		89,768 (3.8)	10,958 (3.3)	78,810 (3.8)	< 0.001
Teaching hospital		1,366,346 (57.3)	79,730 (24.1)	1,286,616 (62.6)	< 0.001
Insurance	Medicare	1,270,059 (53.4)	187,504 (57)	1,082,555 (52.8)	< 0.001
	Medicaid	473,251 (19.9)	61,691 (18.7)	411,561 (20.1)	
	Private	468,711 (19.7)	55,655 (16.9)	413,056 (20.1)	
	Self-pay	94,936 (4.0)	14,816 (4.5)	80,120 (3.9)	
High Charlson comorbidity score		1,758,091 (73.7)	240,094 (72.7)	1,517,998 (73.9)	< 0.001
Disposition	Home	1,563,076 (65.6)	222,497 (67.4)	1,340,579 (65.3)	< 0.001
	Short term inpatient	18,135 (0.8)	4,402 (1.3)	13,732 (0.7)	
	Transfer to SNF, ICF	317,217 (13.3)	43,663 (13.2)	273,554 (13.3)	
	Home care	389,479 (16.3)	47,970 (14.5)	341,508 (16.6)	

S1625

Primary Gastric Cancer Mortality Rates Are Decreasing in Young Men but Not Young Women in the U.S., 2000-2019: A Population-Based Time-Trend Analysis Using the CDC's National Center of Health Statistics (NCHS) Database

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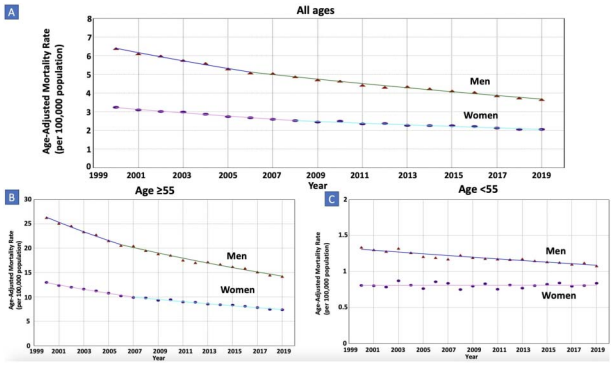
Introduction: Recent data showed that incidence of gastric cancer (GC) has been increasing in the US over the last 2 decades among younger women (< 55 years) at a significantly greater rate compared to younger men. However, the impact of such findings on mortality has not been evaluated. The aim of this study was to investigate sex and age-specific GC mortality rates in the US using CDC's National Center of Health Statistics (NCHS) database.
Methods: The NCHS database is a nationally representative database that covers ≈100% of occurred deaths. For this study, deaths attributed to GC in the US during 2000-2019 were included and mortality rates per 100,000 population were calculated using SEER*Stat software (v8.4.0, NCI). Rates were age-adjusted to the 2000 US population and stratified by sex and age of 2 groups, younger adults (age < 55 years) and older adults. Time trends of mortality rates were estimated using Joinpoint Regression Program (v4.9.0.1, NCI), which utilizes Monte Carlo Permutation analysis to estimate the simplest trend. Annual

percentage change (APC) and average APC (AAPC) were calculated. Sex-specific pairwise comparison was conducted for identicalness (test of coincidence) and parallelism (test of parallelism) along with assessing AAPC difference. A 2-sided *P*-value cutoff of 0.05 was utilized (Table).

Results: A total of 230,158 people died of GC during the study period (40.8% women). Overall, GC mortality rates were decreasing in men (AAPC=-2.87, $P< 0.001$) at a significantly greater rate compared to women (AAPC=-2.34, $P< 0.001$). Among older adults (195,893 deaths; 40.9% women), GC mortality rates have been decreasing in both men (AAPC=-3,17, $P< 0.001$) and women (AAPC=-2.89, $P< 0.001$) without a significant difference. However, among younger adults (34,250 deaths; 40.5% women), GC mortality rates have been decreasing in men (AAPC=-0.97, $P< 0.001$) but not in women (AAPC=0.01, $P=0.93$) with an absolute AAPC difference of 0.98 ($P< 0.001$). The trends were non-identical and non-parallel (both $P< 0.001$) suggesting that mortality rates among men are decreasing at a significantly greater rate compared to the stable trend among women (1299092, Figure).

Conclusion: Nationwide data from the CDC's NCHS database showed that mortality rates of GC were overall decreasing. However, among younger adults (aged < 55 years), mortality rates were decreasing in men but not in women. Future studies should elucidate risk factors in this population.



[1625] **Figure 1.** Figure: Sex-specific Trends and Age-Adjusted Mortality Rates Per 100,000 Population for Gastric Cancer Among Different Age Groups. A: The average annual percentage change (AAPC) is decreasing in men at a significantly greater rate than in women (-2.87 vs -2.34, $P<0.001$). B: The AAPC is decreasing in men and women without a significant difference (-3.17 vs -2.89, $P=0.07$). C: The AAPC is decreasing in men but not in women with a statistically significant difference (-0.97 vs 0.01, $P<0.001$).

Table 1. Sex-Specific Trends for Gastric Cancer Mortality Among Different Age Groups

Age group, y	Cancer cases (N=230,158)[a]	Trends[b]			Sex-specific AAPC difference (95% CI)	Pairwise comparison P-values		
		Time period	APC (95% CI)	AAPC (95% CI)		Sex-specific AAPC difference	Coincidence[e]	Parallelism[f]
All ages								
Women	93,966 (40.8%)	2000-2006 2006-2019	-3.00 (-3.41 to -2.60) -1.85 (-2.12 to -1.58)	-2.34 (-2.55 to -2.13)	-0.53 (-0.83 to -0.24)	< 0.001	< 0.001	< 0.001
Men	136,192 (59.2%)	2000-2008 2008-2019	-3.64 (-4.21 to -3.06) -2.52 (-2.70 to -2.33)	-2.87 (-3.07 to -2.67)				
Aged ≥55								
Women	80,084 (34.8%)	2000-2007 2007-2019	3.65 (-4.09 to -3.20) -2.44 (-2.65 to -2.23)	-2.89 (-3.08 to -2.69)	-0.29 (-0.60 to 0.02)	0.07	< 0.001	< 0.001
Men	115,809 (50.3%)	2000-2006 2006-2019	-3.92 (-4.59 to -3.25) -2.83 (-3.04 to -2.61)	-3.17 (-3.41 to -2.93)				
Aged < 55 #								
Women	13,874 (6.0%)	2000-2019	0.01 (-0.33 to 0.36)	0.01 (-0.33 to 0.36)	-0.98 (-1.34 to -0.63)	< 0.001	< 0.001	0.001
Men	20,376 (8.9%)	2000-2019	-0.97 (-1.13 to -0.80)	-0.97 (-1.13 to -0.8				

[a]Data are presented as death count numbers followed by percentages of the death count numbers from the total cases of cancer deaths in the database.
[b]Time-trends were computed using Joinpoint Regression Program (v4.9.0.1, NCI) with 3 maximum joinpoints allowed (4-line segments).
[c]A negative value indicates a greater AAPC in women compared to men.
[d]Tests whether sex-specific trends were identical. A significant P-value indicates that the trends were not identical (i.e., they had different mortality rates and coincidence was rejected).
[e]Tests whether sex-specific trends were parallel. A significant P-value indicates that the trends were not parallel (i.e., parallelism was rejected).
#Primary outcome.

S1626

Risk Factors of Adverse Cardiovascular Events in Patients With Gastric Cancer: A Nationwide Population-Based Study

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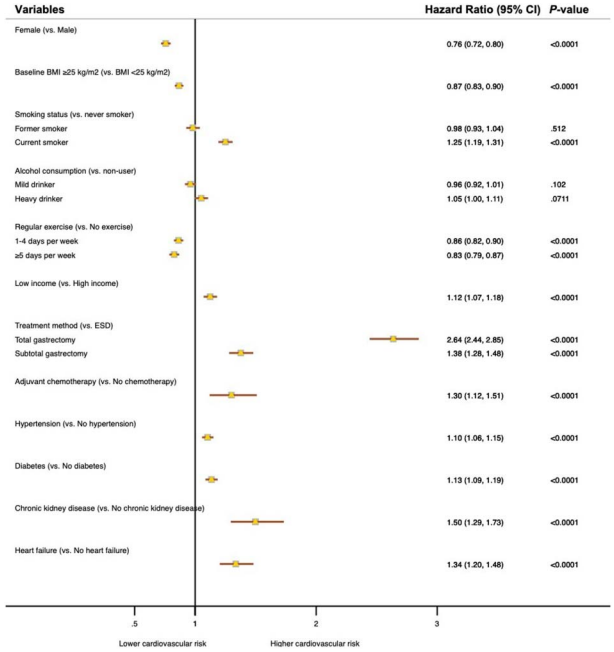
Introduction: Long-term comorbidity care for gastric cancer survivors has been emphasized to decrease mortality as well as the development of metabolic disease and cardiovascular diseases. However, evidence is scarce on the risk factors affecting the risks of adverse cardiovascular events in patients with gastric cancer.

Methods: A nationwide cohort by the National Health Insurance Service in Korea was utilized. Patients who received gastrectomy or endoscopic submucosal dissection (ESD) for gastric cancer between 2004 and 2013 were identified. An adverse cardiovascular event was defined as a composite of acute myocardial infarction, coronary revascularization, or ischemic stroke. Fine and Gray method was used to evaluate associations between variables including treatment methods (subtotal or total gastrectomy, ESD) age, sex, body mass index (BMI), lifestyle, and comorbidities.

Results: A total of 41,905 patients treated for gastric cancer (mean age, 60.9 ± 11.0 years; female, 26.6%) were included. The incidence of adverse cardiovascular events was 9.0 cases per 1000 person-years. In multivariable models, patients who received a total (hazard ratio [HR], 2.64; 95% confidence interval [CI]; 2.44 to 2.85; $P < 0.001$) or subtotal gastrectomy (HR, 1.38; 95% CI, 1.28 to 1.48; $P < 0.001$) had a higher risk of adverse cardiovascular events than those who received ESD (Figure). Adjuvant chemotherapy also increased the cardiovascular risk with an HR of 1.30 (95% CI, 1.12 to 1.51; $P = 0.001$). Current smokers had a higher risk of adverse cardiovascular events (HR, 1.25; 95% CI, 1.19 to 1.31; $P < 0.001$), and regular exercise was a preventive factor in a dose-dependent manner (14% decreased risk in patients with 1-4 days of exercise per week and 17% decreased risk in those with ≥5 days of exercise per week compared to those who do not exercise). Higher age, male, lower BMI, smoking, low income, and the presence of hypertension, diabetes, chronic kidney disease, and heart failure were independent predictors of adverse cardiovascular events (Figure).
Conclusion: We identified independent predictors of adverse cardiovascular events in patients who received treatment for gastric cancer. Experimental studies to improve modifiable risk factors are needed to confirm these findings and develop post-cancer treatment strategies to prevent adverse cardiovascular events.



[1626] **Figure 1.** Multivariable analysis of associations between demographic characteristics, treatment methods, lifestyle variables, comorbidities, and the risk of adverse cardiovascular events in patients who are treated for gastric cancer.

S1627

Gastric Cancer Risk Estimates in Hereditary Cancer Syndromes: A Systematic Review

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Introduction: Approximately 10% of gastric cancers result from monogenic germline predisposition. The aim of this study was to determine gastric cancer risk in specific hereditary cancer syndromes.
Methods: A systematic literature review was conducted using the GRADE methodology. A literature search was conducted in MEDLINE (PubMed), Embase, and Cochrane from June 2016 through November 2021. Inclusion criteria were articles that detailed gastric cancer risk estimates in patients with Hereditary Diffuse Gastric Cancer (HDGC) (*CDH1* mutation), Lynch Syndrome (LS) (*MLH1*, *MSH2*, *PMS2*, *MSH6* mutations), Familial Adenomatous Polyposis (FAP) (*APC* mutation) and germline mutations in *BRCA 1, BRCA 2, CTNNA1, MUTYH, SMAD4, BMPR1A, TP53, STK11, ATM, PALB2*, and *PRSS1*. Two reviewers independently evaluated titles and abstracts for relevance and obtained text of potentially eligible articles, and determined final eligibility after full text review. Data was reported qualitatively given heterogeneity in available literature that precluded quantitative comparison.
Results: The literature search revealed 2,494 observational studies, of which 26 met inclusion criteria for full-text abstraction. For HDGC, ranges for cumulative incidence of diffuse gastric cancer (DGC) varied widely across 4 studies. In men, 4 studies showed cumulative incidence by the eighth decade of life ranged from 37.2% (95% CI, 8.7-89.5) to 70.0% (95% CI, 40-94), while ranges for women were uniformly lower by the eighth decade, ranging from 24.7% (95% CI 6.1-68.9) to 63% (95% CI 19-99). Three studies found RR of gastric cancer in *BRCA1/2* carriers ranged from 2.59 (95% CI, 1.46-4.61) to 6.2 (95% CI 2.0-19). Across all genetic mutations associated with LS, 8 studies reported the cumulative incidence of gastric cancer to age 70 of 2.0% to 14.7%, with a higher incidence in *MLH1* carriers compared to *MSH2* and *MSH6.*
Conclusion: The gastric cancer risk for hereditary cancer syndromes is not well described. In HDGC carriers, gastric cancer risk estimates vary widely across studies. Among individuals with LS, cumulative risk varied widely with a peak lifetime risk estimate of 14.7% and the highest lifetime risk in *MLH1* carriers compared to *MSH2* and *MSH6* carriers. Prospective large population-based cohort studies are needed in order to accurately determine the gastric cancer risk in hereditary cancer syndromes.

S1628

Physiological Impact of Spinal Cord Stimulation in Gastroparesis Patients With Chronic Abdominal Pain

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Introduction: Abdominal pain in patients with gastroparesis (GP) remains a major clinical problem. A study of GP patients with chronic, refractory abdominal pain who underwent high frequency spinal cord stimulation (SCS) therapy at the high-thoracic level reported improvements in nausea, vomiting, abdominal pain and satisfaction scores [1]. It is unclear if the stomach undergoes measurable changes in neuromuscular activity after SCS. AIMS: To determine the effects of long term SCS therapy on symptoms and gastric physiology in patients with GP.
Methods: An IRB approved, non-randomized, prospective cohort study was performed that included 3 patients (all women, ages 35-60) with idiopathic GP and chronic abdominal pain. GP was confirmed with solid phase 4 hour gastric emptying test (GET), and each had an electrogastrogram (EGG) with water load satiety test before SCS therapy. Patients were referred to the pain clinic for evaluation of refractory abdominal pain where they ultimately underwent SCS placement.
Results: Patients were recruited and returned an average of 38.3 months after SCS for follow up GCSI and PAGI-QOL surveys, EGG, and GET. Data were available from our prior registry studies on participant 1 and 2; participant 3 was unable to return for repeat GET. The Table shows pre-SCS gastric dysrhythmias converted to normal 3 cpm rhythm in 2 of the 3 patients and water load volumes ingested improved in each patient at follow up. Delayed gastric emptying converted to normal in one patient and improved slightly in the second. PAGI-QOL scores improved in each patient.
Conclusion: Gastric dysrhythmias, water load volumes, and gastric emptying improved after SCS, indicating a potential physiologic basis for the clinical improvement reported in the larger observational studies with SCS implantation. SCS is known to suppress sympathetic outflow via blockade of the superior hypogastric and/or celiac plexus providing a mechanistic basis for the physiologic changes seen in this study. These observations support the rational for prospective studies of SCS in the large numbers of patients with gastroparesis and concomitant chronic abdominal pain.

Table 1. Pre-SCS gastric dysrhythmias converted to normal 3 cpm rhythm in 2 of the 3 patients

	Participant 1		Participant 2		Participant 3	
	Pre-SCS	Post-SCS	Pre-SCS	Post-SCS	Pre-SCS	Post-SCS
BMI	17	31	30	28	39	45
GCSI	n/a	3.78	n/a	0.89	n/a	3.22
PAGI-QOL	2.73	3.23	1.37	1.87	n/a	3.77
EGG WLT (cc)	150	200	275	700	250	600
EGG Rhythm	Mixed dysrhythmia	Normal	Bradygastria	Normal	Mixed dysrhythmia	Tachycgastria
GET 1hr	65	68	63	43	65	n/a
GET 4hr	25	20	22	2	18	n/a

S1629

Socioeconomic and Clinical Factors Predicting Management of Patients With *Helicobacter pylori* in a Large Safety Net Hospital

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Introduction: *Helicobacter pylori* is a prevalent infection in the United States, with a lifetime prevalence of about 33%. *H. pylori* is a strong risk factor for dyspepsia, peptic ulcer disease, and gastric adenocarcinoma; ensuring prompt treatment and confirmed eradication of this infection is imperative. Unfortunately, *H. pylori* disproportionately affects people of lower socioeconomic status. Prior studies have shown that race, gender, income, and rural habitation correlate with higher risk of eradication failure. This study aimed to assess socioeconomic, demographic, and clinical barriers to care for patients with *H. pylori* in a large safety-net hospital.
Methods: A retrospective chart review was conducted on 694 patients who were at least 18 years old with biopsy proven *H. pylori* infection between November 2015 and May 2021. Demographic data, endoscopy indications and findings, appointment follow up, treatment regimens and durations, and characteristics of eradication testing were collected. The data were analyzed using a combination of the Pearson chi-squared test, T-test, and logistic regressions to assess the influence of various variables on: (1) ordering of eradication testing, (2) completion of eradication testing (if ordered), and (3) achievement of eradication.
Results: Overall, eradication testing was ordered for 50.5% of patients. Of patients who had eradication testing ordered, 66.8% completed testing. Of patients who completed testing, 85.6% achieved successful eradication. Gender, endoscopy setting, patient follow-up, and treatment type were statistically significant factors influencing both if eradication testing was ordered and if completed by the patient (all $P < 0.05$; Table). Preferred language, Gini index, days from endoscopy to follow-up, and scheduled follow-up by a provider were significantly associated with completion of eradication testing by the patient (all $P < 0.05$). There were no statistically significant factors impacting successful eradication.
Conclusion: Ideally, eradication testing should be ordered and completed for every patient treated for *H. pylori*. Given that testing was ordered for just above half of patients, there is significant room for improvement in the process of ordering eradication testing for patients in vulnerable populations. The results of this study make imperative the need to address *H. pylori* treatment disparities, particularly, in safety-net healthcare systems in order to improve clinical outcomes.

Table 1. Analyses of Various Demographic, Socioeconomic, and Clinical Factors Influencing Provider Ordering of *H. pylori* Eradication Testing

Factors	Eradication Not Ordered (N= 336)	Eradication Ordered (N= 343)	*P* Value
Age in years, mean (SD)	56.25 (13.12)	55.58 (12.85)	0.501
Gender, N (%)			0.006
Female	141 (42)	180 (52)	
Male	195 (58)	163 (48)	
Race, N (%)			0.087
Asian	6 (2)	16 (5)	
Black/African American	293 (87)	279 (81)	
Hispanic	29 (9)	35 (10)	
White	8 (2)	13 (4)	
Preferred Language, N (%)			0.002
English	307 (91)	287 (84)	
Non-English	29 (9)	56 (16)	
Insurance Type, N (%)			0.468
Private	52 (15)	65 (19)	
Public	166 (50)	159 (46)	
Uninsured	116 (35)	118 (35)	
Distance from Hospital in miles, mean (SD)	15.94 (41.12)	18.45 (119.06)	0.716
Median Income, mean (SD)	49,317.70 (17,756.49)	51,356.59 (16,811.41)	0.129
Mean Income, mean (SD)	68,280.98 (23,828.35)	69,917.31 (23,620.25)	0.374
Gini Index, mean (SD)	0.471 (0.05)	0.461 (0.5)	0.011
Endoscopy Setting, N (%)			< 0.001
Inpatient	173 (51)	100 (29)	
Outpatient	163 (49)	243 (71)	
Indications of Endoscopy, N (%)			0.608
Diagnostic	309 (92)	319 (93)	
Screening/Surveillance	27 (8)	24 (7)	
Gastric & Duodenal Mucosal Findings, N (%)			0.130
Erosions/Gastritis/Duodenitis	132 (39)	135 (39)	
Ulcer(s)	121 (36)	99 (29)	
Polyp/Mass	13 (4)	21 (6)	
Other	7 (2)	5 (2)	
Normal	63 (19)	83 (24)	

Table 1. (*continued*)

Factors	Eradication Not Ordered (N= 336)	Eradication Ordered (N= 343)	*P* Value
Who Informed Patient of *H Pylori* Results, N (%)			0.497
GI provider	234 (70)	247 (72)	
Non-GI provider	102 (30)	96 (28)	
Days from Endoscopy to Patient Informed, mean (SD)	18.76 (14.95)	19.06 (16.60)	0.803
Follow-up Scheduled by Provider, N (%)			< 0.001
Yes	181 (54)	295 (86)	
No	155 (46)	48 (14)	
Patient Showed up to Follow-up, N (%)			< 0.001
Yes	109 (60)	264 (90)	
No	72 (40)	30 (10)	
Days from Endoscopy to Follow Up, mean (SD)	50.87 (42.21)	85.45 (92.17)	< 0.001
Days from Endoscopy to Treatment Order, mean (SD)	19.50 (16.28)	27.04 (95.06)	0.152
Treatment Type, N (%)			< 0.001
Quadruple Therapy	189 (56)	246 (72)	
Triple Therapy	147 (44)	96 (28)	
Treatment Duration, N (%)			0.046
7-10 Days	138 (41)	167 (49)	
14 Days	198 (59)	176 (51)	

S1630

10-Year Epidemiological Trends of Eosinophilic Gastritis and Eosinophilic Gastroenteritis

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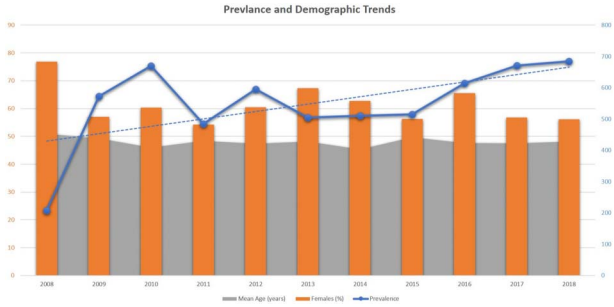
Introduction: Eosinophilic gastritis (EG) and eosinophilic gastroenteritis (EGE) are rare entities. There is limited epidemiological data available for these disorders. The estimated prevalence of EG and EGE are 6.3/100,000 and 8.4/100,000 respectively in the general population. A large cohort study published in 2019, increasing prevalence rates for these disorders. In this study we sought to identify the epidemiological trends of EG and EGE from a large US population-based sample.
Methods: We utilized the National Inpatient Sample (NIS) database, to identify trends of EG and EGE. Patients with a principal or secondary diagnosis of EG or EGE were identified from the years 2008 to 2018 using *ICD-9* and *ICD-10* codes. Annual prevalence of EG and EGE was calculated as well as epidemiological and healthcare utilization trends. Healthcare resource utilization measures included in the study were length of stay (LOS), hospital bed size, median household income, hospital region, primary payer and total hospitalization charges.
Results: From 2008 to 2018, a total of 6,027 patients with a diagnosis of EG or EGE were identified. The unweighted prevalence of EG/EGE during this 10-year period was approximately 8.61/100,000 patients. There was an increase in the rates of diagnosis annually from 207 to 685 patients over the study period. There was a female preponderance in the population which did not significantly change [*P* 0.35]. The mean age was 47.8 years [SEM: 0.6 years] and there was no significant variation in age distribution over 10 years [*P* 0.67]. Demographic trends are summarized in Figure. There was no significant change in trends for hospital type, median household income, primary payer, length or stay or patient race. Healthcare utilization trends are summarized in the Table. There was however a significant increase in hospital charges from 2008 to 2018 [*P* 0.04]. The rates of diagnosis increased significantly from 2008 to 2018 in the South and West hospital regions when compared to other regions [*P* 0.01].
Conclusion: The prevalence of EG and EGE remains rare in the US but it continues to steadily rise. This is associated with increasing healthcare utilization costs. The prevalence is significantly increasing in the South and West regions particularly. Further study is needed to assess causes for increasing prevalence and changing epidemiology of EG and EGE.



[1630] **Figure 1.** Demographic and Prevalence trends.

Table 1. **Healthcare utilization trends**

Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	*P*-value
Race (%)												**0.54**
White	74.35	75.64	70.49	75.25	71.55	77.89	68.82	70.71	58.97	67.44	69.12	
Black	6.83	9.04	16.31	5.2	8.62	7.37	12.9	14.14	17	13.18	8.82	
Hispanic	12.62	10.18	6.25	8.76	12.07	8.42	11.83	8.08	16.2	12.4	9.56	
Asian/Pacific islander	6.2	1.14	4.05	8.76	3.45	3.16	3.23	6.06	5.9	4.65	10.29	
Native American	0	2	0.65	1.02	1.72	0	0	0	0	0	1.47	
Other	0	1.9	2.15	1.01	2.59	3.16	3.23	1.01	1.71	2.33	0.74	
Primary Expected Payer (%)												**0.06**
Medicare	38.21	25.85	21.32	27.37	28.57	38	28.43	31.07	31.71	36.84	25.55	
Medicaid	14.74	6.66	15.94	10.87	10.08	7	14.71	20.39	15.45	18.8	17.52	

Table 1. (*continued*)

Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	*P*-value
Private insurance	44.38	51.29	53.63	46.6	54.62	46	53.92	43.69	44.72	39.85	47.45	
Self-pay	2.67	11.06	6.12	6.61	5.88	8	1.96	2.91	4.88	3.76	5.11	
No charge	0	0	0.78	1.16	0	1	0	0.97	0	0	0	
Other	0	5.02	2.22	7.38	0.84	0	0.98	0.97	3.25	0.76	4.38	
Hospital Region (%)												**0.01**
Northeast	25.85	26.83	22.47	13.79	29.41	25.74	12.75	19.42	21.15	20.16	15.33	
Midwest	29.85	22.86	15.13	26.51	12.61	19.8	32.35	23.3	30.89	21.64	25.55	
South	18.52	3848	46.56	30.54	36.13	35.64	35.29	38.83	28.46	26.87	30.66	
West	25.76	11.83	15.85	29.16	21.85	18.81	19.61	18.45	19.51	31.34	28.47	
Hospital Type (%)												**0.5**
Rural	16.03	12.59	12.47	12.55	15.13	9.9	19.61	14.56	17.07	17.16	23.36	
Non-teaching urban	27.52	20.18	24.04	17.37	22.69	21.78	19.61	20.39	27.64	25.37	28.47	
Teaching urban	56.45	67.23	63.49	70.08	62.18	68.32	60.78	65.05	55.28	57.46	48.18	
Median Household Income National Quartile for Patient ZIP Code (%)												**0.19**
$1-24,999	14.21	19.2	19.61	18.69	15.52	20.41	28.71	27.72	20.66	23.26	23.7	
$25,000-34,999	30.39	20.54	25.02	21.06	20.69	17.35	26.73	28.71	28.93	18.6	22.96	
$35,000-44,999	14.71	33.55	26.57	35.14	22.41	27.55	19.8	18.81	26.45	27.91	27.41	
45,000 or more	40.69	26.71	28.8	25.11	41.38	34.69	24.75	24.76	23.97	30.23	25.93	

S1631

Education on the Treatment of *Helicobacter pylori* Infection Improves Clinician Knowledge

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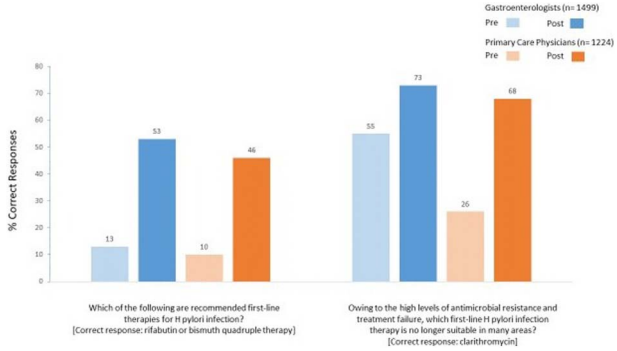
Introduction: The prevalence of *Helicobacter pylori* infection in US adults is around 35%. Eradication of *H. pylori* is essential to the successful management of peptic ulcer disease, and the potential prevention of gastric cancer. The goal of this project was to assess the role of continuing medical education (CME) on improving learners' knowledge regarding evidence-based treatment of *H. pylori* infection.
Methods: Gastroenterologists (N =1499) and primary care physicians (PCPs; N =1224) participated in an online text-based CME/CE activity on the diagnosis and treatment of *H. pylori* infection (1). Educational effect was assessed using a repeated-pair design with pre-/post-assessment and 2 multiple choice questions. This assessed knowledge and included evaluation questions that gauged patient numbers and overall satisfaction with the education. We calculated relative improvement ([post%-pre%]/pre%) to examine change in percentage of correct responses. We used the chi-squared test for significance testing on the number of correct responses pre- to post-activity with $P < 0.05$ considered statistically significant. The online CME activity launched on October 15, 2021; data were collected on May 31, 2022.
Results: Sixty-six percent of gastroenterologists and 60% of PCPs strongly agreed that this education increased their knowledge regarding evidence-based treatments for *H. pylori* infection. First line therapy for *H. pylori* infection: Gastroenterologists had a 308% relative increase (13%/53% pre/post; $P < .05$), and PCPs had a 360% relative increase (10%/46%, pre/post; $P < .05$) in knowledge regarding recommended first-line treatment of *H. pylori* infection (Figure). Antibiotic resistance and *H. pylori* treatment: Gastroenterologists had a 33% relative increase (55%/73%, pre/post; $P < .05$), and PCPs had a 162% relative increase (26%/68%, pre/post; $P < .05$) in knowledge about antibiotic resistance to clarithromycin in patients with *H. pylori* infection (Figure).
Conclusion: We found significant improvement in knowledge among gastroenterologists and PCPs regarding evidence-based management of *H. pylori* infection. However, additional educational effort is required to close some clinical knowledge gaps regarding selection of first-line treatment for *H. pylori* infection and resistance to antibiotics, with particular emphasis on clarithromycin.



[1631] **Figure 1.** Pre and Post results for gastroenterologists and primary care physicians knowledge for first-line treatment of *Helicobacter pylori*.

REFERENCE

1. Howden CW, Moss SF, Graham DY. CME Activity: Optimizing the Management of *Helicobacter pylori* Infections. October 21, 2021. Available at: https://www.medscape.org/viewarticle/960805.

S1632

Rural-Urban Disparities in Early Onset Gastric Cancer Among Hispanics and Non-Hispanics

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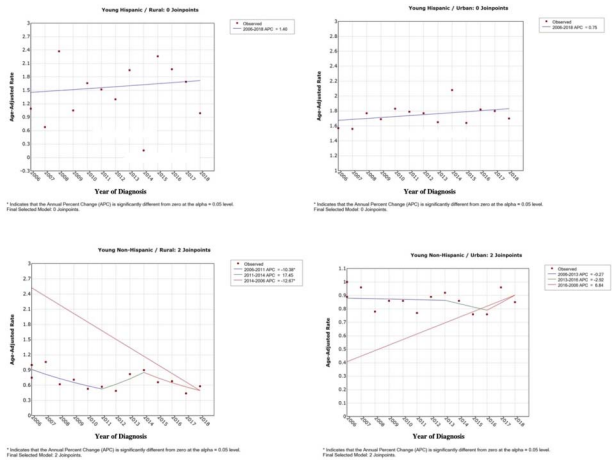
Introduction: The incidence of non-cardia gastric cancer is increasing in adults younger than 50 years old. Early-onset non-cardia gastric cancer (EOGC) is characterized by racial and ethnic disparities, occurring more often in Hispanic than non-Hispanic persons. Rural-urban disparities in incidence have been described for several other cancers such as colorectal cancer; however, it is unknown whether rural-urban disparities exist in EOGC and if this intersects with racial and ethnic disparities given the majority of Hispanic persons reside in urban areas.

Methods: We utilized the SEER Census Tract-level Socioeconomic Status and Rurality Database from 2006-2018 to calculate incidence rates (IR) and incidence rate ratios (IRR) of EOGC among Hispanic and non-Hispanic persons by census tract rural-urban location, age, year, and stage of disease. We estimated age-adjusted (to the 2000 US standard population) IRs per 100,000 persons using SEER*Stat version 8.4.0. We used Tiwari method to estimate IRRs with 95% CIs, comparing rates in 2006 and 2018 among Hispanic and non-Hispanic persons in rural and urban settings and Joinpoint software (v4.9.1.0) to evaluate annual percent change (APC).
Results: Incidence rates of EOGC were significantly higher among Hispanic persons than non-Hispanic persons in both rural settings (1.44 vs 0.68 per 100,000 persons; IRR 2.12, 95% CI 1.64-2.73) and urban settings (1.75 vs 0.86 per 100,000 persons; IRR 2.04, 95% CI 1.91-2.16). Hispanic persons had higher incidences of EOGC in both rural and urban settings in every age group and stage (Table). From 2006 to 2018 the APC was 1.40% for Hispanic persons living in rural census tracts compared to -10.38% from 2006 to 2011 ($P< 0.05$), 17.45% from 2011-2014 ($P >0.1$), and not calculable from 2014-2018 among non-Hispanic persons (Figure). In urban census tracts, the APC was 0.75% for Hispanic persons ($P >0.1$) compared to -0.27% from 2006 to 2013, -2.92% from 2013 to 2016, and not calculable from 2016-2019 for non-Hispanic persons ($P >0.1$) (Figure). The largest absolute difference was among urban 30-39 year-old Hispanic persons (APC 3.49%).
Conclusion: There were marked disparities in incidence rates of EOGC among Hispanics and non-Hispanics, but these disparities did not differ by rural-urban locations. Further studies are needed to determine factors contributing to disparities among Hispanic and non-Hispanic persons with EOGC.



[1632] **Figure 1.** Rural-Urban Annual Percent Change in Early Onset Gastric Cancer among Hispanics and Non-Hispanics.

Table 1. Age-Adjusted Incidence Rates (IR) and Incidence Rate Ratios (IRR) of Early Onset Gastric Cancer Among Hispanics and Non-Hispanics in Rural and Urban Census Tracts by Age and Stage of Disease *P<0.05

	Rural			Urban		
	IR Hispanic (95% CI)	IR Non-Hispanic (95% CI)	IRR (95% CI)	IR Hispanic (95% CI)	IR Non-Hispanic (95% CI)	IRR (95% CI)
Age						
20-29	0.11 (0.02-0.32)	0.05 (0.02-0.11)	2.23 (0.36-10.47)	0.31 (0.26-0.37)	0.14 (0.12-0.16)	2.23 (1.74-2.84)*
30-39	1.17 (0.77-1.7)	0.51 (0.39-0.66)	2.29 (1.39-3.67)*	1.36 (1.25-1.49)	0.62 (0.57-0.67)	2.19 (1.94-2.46)*
40-49	2.84 (2.14-3.69)	1.38 (1.18-1.59)	2.06 (1.50-2.80)*	3.35 (3.15-3.55)	1.7 (1.63-1.78)	1.97 (1.82-2.12)*
Stage						
In situ/localized	0	0	-	0	0	-
Regional	0.77 (0.56-1.03)	0.41 (0.35-0.49)	1.86 (1.30-2.60)*	0.84 (0.79-0.90)	0.49 (0.46-0.51)	1.73 (1.59-1.89)*
Distant	0.57 (0.39-0.79)	0.19 (0.15-0.24)	3.02 (1.93-4.61)*	0.67 (0.62-0.72)	0.26 (0.24-0.28)	2.55 (2.30-2.83)*

S1633

***Helicobacter pylori* Eradication Testing: Is Ordering or Completion the Issue? A Retrospective Review of a Single Health System**

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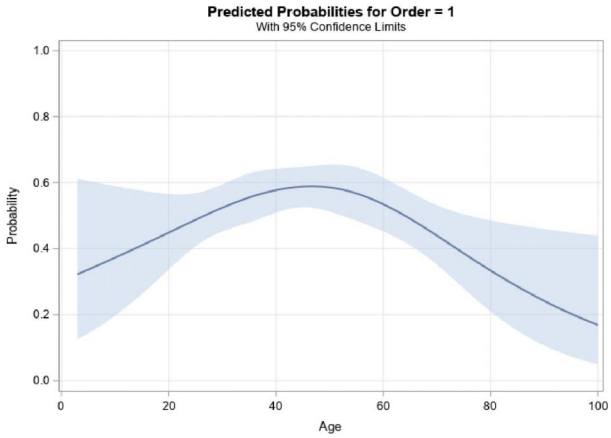
Introduction: *Helicobacter pylori* is one of the leading causes of peptic ulcer disease and gastric cancer worldwide. Treatment is typically a combination of antibiotics with a proton-pump inhibitor (PPI). Testing for eradication, recommended by the most recent ACG practice guidelines, is paramount as *H. pylori* resistance rates continue to rise and salvage therapy can be offered if initial treatment was unsuccessful. Eradication testing may include urea breath testing, stool antigen testing, or biopsy and should be performed at least 4 weeks after completion of *H. pylori* treatment and 2 weeks after PPI-therapy is held. In this study, we determined if eradication testing ordering practices vary based on patient age, patient primary payer, patient primary language spoken, and gastroenterology (GI) vs non-GI ordering specialty. We also compared eradication testing ordering and completion rates.
Methods: We performed a retrospective chart review of Catholic Health Initiatives health system between January 2019 and January 2021 to obtain data regarding *H. pylori* eradication testing ordering practices. Differences were evaluated using the chi-square test, Fisher's exact test, and lognormal regression models.
Results: Of 433 patients (41.1% male; 58.9% female), eradication testing was not ordered in 218 patients (47.8%). In the 238 (52.2%) patients who had eradication testing ordered, *H. pylori* stool antigen testing was ordered 73.5% of the time. GI ordered eradication testing 67.6% (58.3-75.6) of the time compared to 47.3% (42.0-52.5) by non-GI ordering specialty ($P < 0.001$), (Table). When testing was ordered it was completed 89.5% of the time. There was no significant difference in eradication ordering practice based on sex, primary payer, or language. Eradication testing was most likely to be ordered in patients aged 35-60 ($P = 0.046$), Figure.
Conclusion: In a large health system consisting of academic and non-academic hospitals and clinics eradication testing was performed only half the time and was more frequently ordered in middle-aged patients. The low number of ordered eradication tests may reflect providers' unfamiliarity with clinical guidelines and may be contributed by additional inherent age bias. In our cohort which included 40% non-English speakers, language was not a barrier to test completion. Efforts should focus on education about testing for treatment success particularly in primary care and non-GI specialties.



[1633] **Figure 1.** Predicted probability of ordering eradication testing based on age with 95% confidence limits.

Table 1. Ordered percent and 95% confidence intervals stratified by age

	Ordered Percent (95% CI)	*P*	Completed Percent (if ordered) (95% CI)	*P*
Age	Figure	0.046	Figure2	0.612
Biological Sex				
Male	52.7 (45.5-59.7)		89.9 (82.2-94.5)	
Female	51.9 (45.9-57.8)	0.867	89.2 (82.8-93.4)	0.864
Payer				
Commercial	57.9 (51.4-64.2)		90.2 (93.7-94.2)	
Medicaid	42.6 (33.9-51.8)		91.8 (80.1-96.9)	
Medicare	47.7 (35.9-59.8)	0.051	90.3 (73.8-96.9)	0.502
Self Pay	55.3 (41.0-68.8)		80.8 (61.2-91.8)	
English Speaking				
No	53.1 (45.7-60.4)		80.4 (82.6-95.0)	
Yes	51.6 (45.7-57.4)	0.756	88.9 (82.6-93.1)	0.706
Gastroenterology				
No	47.3 (42.0-52.5)		88.3 (82.4-92.5)	
Yes	67.6 (58.3-75.6)	< .001	92.0 (83.3-96.4)	0.396

S1634

Risk Factors for Brain Metastasis and Their Impact on Survival in Patients With Gastric Cancer: A Surveillance, Epidemiology and End-Results (SEER) Database Analysis

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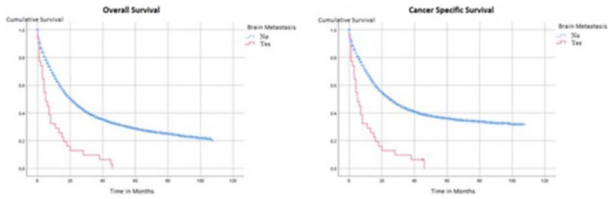
Introduction: Brain metastasis in gastric cancer (GC) is a rare manifestation associated with poor prognosis and unfavorable outcomes. Identification of risk factors is essential for early detection and treatment. We investigated the incidence, risk factors, and prognostic factors of brain metastasis in GC patients.
Methods: Data on sociodemographic and tumor characteristics of GC patients from 2010 to 2018 were retrieved from the Surveillance, Epidemiology, and End-Results database. Overall survival (OS) was defined as the time from diagnosis to death from any cause or end of follow-up. Cancer-specific survival (CSS) was defined as the time from diagnosis to death due to GC or end of follow-up. Descriptive statistics, multivariate logistic regression, and Cox regression were applied using SPSS version 26. Kaplan Meier survival curves were constructed (Figure).
Results: We included 7,960 patients with GC (Table). Brain metastasis was reported in 31 (0.39 %) patients. On logistic regression, patients who had undergone surgery were at reduced risk for brain metastasis (adjusted odds ratio (aOR) 0.086, $P< 0.001$). Increased risk of brain metastasis was reported in patients who had concurrent metastasis to bone (aOR 4.973, $P < 0.001$) and lung (aOR 5.816, $P < 0.001$). The median OS was significantly lower in patients with brain metastasis (5 months) compared to those without brain metastasis (21 months, $P < 0.05$). The median CSS was significantly lower in patients with brain metastasis (5 months) compared to those without brain metastasis (25 months, $P < 0.05$). On Cox regression, significantly reduced OS was reported in patients at T3 (AHR 7.549) and T4 stage (adjusted hazard ratio (aHR) 19.394). OS was prolonged in patients who had undergone surgery (aHR 0.043). CSS was significantly reduced in patients at T3 (aHR 6.234) and T4 stage (aHR 17.148). Patients who had undergone surgery had longer CSS (aHR 0.04).
Conclusion: Metastasis to the brain was reported in only 0.39% of GC patients. Brain metastasis is associated with worse OS and CSS in GC, particularly in patients with advanced tumor stage and those who did not undergo surgery.



[1634] **Figure 1.** Kaplan Meier Survival Analysis for Gastric Cancer with and without Brain Metastasis.

Table 1. Baseline Characteristics of Patients with Gastric Cancer

Features	Brain Metastasis, n (%)	No metastasis, n (%)	*P*-value
Total	31 (100)	7929 (100)	
Race			0.068
Caucasian	27 (87.1)	5390 (68.0)	
African American	2 (6.5)	850 (10.7)	
Other	2 (6.5)	1689 (21.3)	
Sex			0.709
Male	19 (61.3)	5122 (64.6)	
Female	12 (38.7)	2807 (35.4)	
Age, years			0.046*
Less than 50	3 (9.7)	862 (10.9)	
50-75	24 (77.4)	4476 (56.5)	
More than 75	4 (12.9)	2591 (32.7)	
T Stage			0.597
0	0 (0)	23 (0.29)	
1	10 (32.2)	2478 (31.3)	
2	1 (3.2)	1009 (12.7)	
3	13 (41.9)	2775 (35.0)	
4	7 (22.6)	1644 (20.7)	
N Stage			0.527
0	12 (38.7)	4034 (50.9)	
1	12 (38.7)	2221 (28.0)	
2	4 (12.9)	901 (11.4)	
3	3 (9.7)	773 (9.7)	
Surgery			< 0.001
Yes	2 (6.4)	4439 (56.0)	
No	29 (93.5)	3490 (44.0)	
Bone Metastasis			< 0.001
Yes	10 (32.3)	231 (2.9)	
No	21 (67.7)	7698 (97.1)	
Liver Metastasis			< 0.001
Yes	11 (35.5)	811 (10.2)	
No	20 (64.5)	7118 (89.8)	
Lung Metastasis			< 0.001
Yes	10 (32.2)	222 (2.8)	
No	21 (67.7)	7707 (97.2)	

S1635

Gender-Related Difference on Demographics and Comorbidities of Gastroparesis

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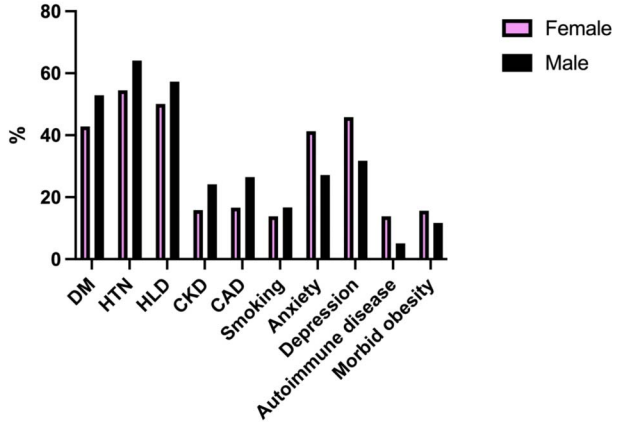
Introduction: Gastroparesis is known to be more prevalent in females than males, even though the pathophysiology behind it remains unclear. There is lack of gender specific comparison of gastroparesis in terms of demographics and comorbidities. The aim of the study was to compare the demographics and comorbidities of gastroparesis between female and male patients.
Methods: Patients who had completed a gastric emptying study and diagnosed with gastroparesis were identified using a nationwide database, IBM Explorys (1999-2022). The following conditions were excluded: cyclical vomiting syndrome, psychoactive substance abuse, eating disorder, factitious disorder, chemotherapy, malignant tumor of esophagus and stomach, neoplasm of abdomen, gastric or intestinal obstruction, IBD, adhesion of intestine, carcinomatosis, perforation of intestine, Roux-en-Y gastrojejunostomy, and gastrectomy. Patients were subdivided into males and females. Demographic information, clinical symptoms and comorbidities were collected. Chi-square tests were performed to compare categorical data. Odds Ratios with a 95% confidence interval were reported.
Results: A total of 17,570 patients were identified with gastroparesis, of which 13,090 (75%) patients were females and 4,390 (25%) patients were males. Females and males demonstrated similar trend in the distribution of ethnicity: most patients were White (76.6 vs 74.0%), followed by African American (13.0 vs 14.4%) and other races respectively (Table). There was a higher percentage of females than males in the younger age group: age 20-29 (F vs M: 5.3 vs 4.3%) and age 30-39 (F vs M: 13.8 vs 11.4%) respectively. Male patients with GP had a higher prevalence of diabetes mellitus (M vs F: 52.8 vs 42.8%) and other comorbidities, such as: hypertension (64.0 vs 54.5%), hyperlipidemia (57.2 vs 50.1%), chronic kidney disease (24.1 vs 15.8 %), coronary artery disease (26.4 vs 16.6 %) and smoking (16.6 vs 13.8%) (All *P* value < 0.0001) (Figure). Female patients had a higher prevalence of anxiety (F vs M: 41.3 vs 27.1%), depression (45.8 vs 31.7%), autoimmune conditions (13.8 vs 5.0%) and morbid obesity (15.6 vs 11.6%) (All *P* value < 0.0001).
Conclusion: Female and male patients with gastroparesis demonstrate similar ethnic distribution. There is a higher percentage of female patients than males in the younger age group. However, female and male patients demonstrate different comorbidities.



[1635] **Figure 1.** Comparison of Comorbidities Between Female and Male patients with Gastroparesis.

Table 1. Comparison of Demographics and Comorbidities Between Female and Male Patients with Gastroparesis

		Female (N=13090)	%	Male (N=4390)	%	OR	*P*
Age	20-29	690	5.3%	190	4.3%	1.04-1.45	0.0135
	30-39	1810	13.8%	500	11.4%	1.12-1.39	< 0.0001
	40-49	2370	18.1%	740	16.9%	1.00-1.19	0.0612
	50-59	2710	20.7%	1060	24.1%	0.76-0.89	< 0.0001
	60-69	2810	21.5%	970	22.1%	0.89-1.05	0.3811
	70-79	2000	15.3%	720	16.4%	0.84-1.01	0.0760
	80-89	930	7.1%	290	6.6%	0.94-1.24	0.2618
	90 above	260	2.0%	80	1.8%	0.85-1.41	0.4963
Race	Caucasian	10030	76.6%	3250	74.0%	1.06-1.24	0.0005
	African American	1700	13.0%	630	14.4%	0.81-0.98	0.0215
	Asian	110	0.8%	50	1.1%	0.06-0.09	< 0.0001
	Hispanic/Latino	120	0.9%	40	0.9%	0.70-1.44	0.9733
	Unknown/Other	1130	8.6%	420	9.6%	0.79-1.00	0.0595
Comorbidities	DM	5600	42.8%	2320	52.8%	0.62-0.71	< 0.0001
	HTN	7130	54.5%	2810	64.0%	0.63-0.72	< 0.0001
	HLD	6560	50.1%	2510	57.2%	0.70-0.81	< 0.0001
	CKD	2070	15.8%	1060	24.1%	0.54-0.64	< 0.0001
	CAD	2170	16.6%	1160	26.4%	0.51-0.60	< 0.0001
	Smoking	1810	13.8%	730	16.6%	0.73-0.88	< 0.0001
	Anxiety	5410	41.3%	1190	27.1%	1.76-2.04	< 0.0001
	Depression	6000	45.8%	1390	31.7%	1.70-1.96	< 0.0001
	Autoimmune disease	1800	13.8%	220	5.0%	2.62-3.49	< 0.0001
	Morbid obesity	2040	15.6%	510	11.6%	1.27-1.56	< 0.0001

S1636 WITHDRAWN

S1637

Outcomes in Patient With Refractory Gastroparesis on Domperidone-A 12-Year Experience

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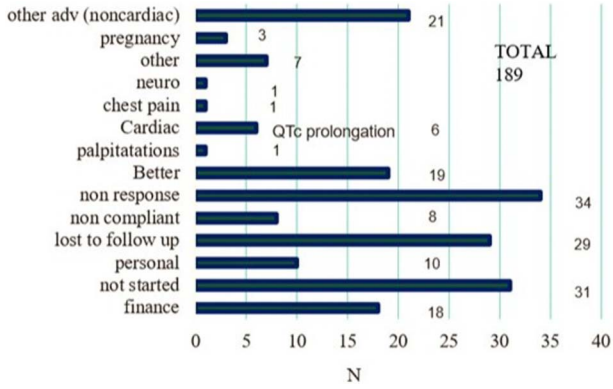
Introduction: Domperidone (Domp), a prokinetic with less side effects than metoclopramide, the only FDA-approved medication for gastroparesis (GP), is only available via the FDA IND program. Our aim was to examine clinical response and side effects profiles of patients (pts) enrolled in our program to identify those most likely to benefit.
Methods: Records of pts enrolled from 2010 through 2021 were examined. Pts who completed an initial (PAGI sym) were contacted for a repeat PAGI-sym. Pts self-reported quality of life. Records of disenrolled (DE) pts were reviewed for cause for disenrollment, adverse effects if any and improvement of symptoms on Domp. Data is reported at percentages and mean ± SD. Variables were compared using Chi-squared test (categorical) and t-test. $P < 0.05$ was considered significant.
Results: 301 pts (85.7% F), were consented. 189 pts were disenrolled (DE), of which 31 never started drug, and 67 charts were reviewed in detail. 41 pts still enrolled (E) had initial and followup PAGI-sym. Of these, 32 (78%) were female, mean age on entry was 50 yrs, with 70.1% older than 40 yrs. Mean treatment duration was 39±39.3 mo. Top GP causes were idiopathic (43.9%), diabetes (24.4%) and post-surgical (12.2%). There was no significant difference in causes or initial symptom severity between genders. There was significant improvement in the severity of all symptoms on PAGI-sym scale after Domp treatment (Table). Gender and age groups did not affect this improvement. Overall self-reported quality of life (QoL) improved regardless of gender, age group and use of psychotropic medication. Reasons for disenrollment for all 189 DE pts are shown in Figure. Six had QTc prolongation (3.2%). In the 67 pts with detailed review, the GP cause was similar in those with symptom remission as in all the DE and E pts. Treatment duration of DE pts was 22.2±22.8 months, shorter than the 41 E pts ($P < 0.005$). Pts with symptom remission were on Domp treatment for 45.7 ± 26.74 mo, longer than pts withdrawn for other reasons (mean 14.83±15.54 mo, $P < 0.001$). Most (72%) DE pts reported improvement in symptoms.
Conclusion: In summary, Domp improves symptoms related to GP regardless of etiology. Nearly 2 thirds disenrolled over time, but very few have prolonged QTc. Detailed review in a subset of pts suggest no specific etiologies result in better symptom response to domperidone, or predict likelihood of adverse events. Symptom remission can take several years to be sufficient to discontinue treatment.



[1637] **Figure 1.** Reasons for Disenrollemnt in 189 DE Patients.

Table 1. Comparison of Symptom Improvement in All Enrolled Patients

	PAGISYM-1 (mean +/- SD)	PAGISYM-2 (mean +/-SD)	*P* value
Regurgitation	2.23 +/- 1.55	1.27 +/- 1.1	< 0.001
Nausea	3 +/- 1.7	1.66 +/- 1.15	< 0.001
Upper Abdominal Pain	2.66 +/- 1.59	1.37 +/- 1.18	< 0.001
Stomach Fullness	3.45 +/- 1.48	2.41 +/- 1.32	0.003
Loss of Appetite	2.9 +/- 1.74	1.46 +/- 1.4	< 0.001
Upper Abdominal discomfort	2.7 +/- 1.54	1.46 +/- 1.29	< 0.001
Bloating	3.48 +/- 1.55	2.2 +/- 1.5	< 0.001
Retching	1.4 +/- 1.53	0.61 +/- 0.92	< 0.001
Stomach or Belly Visibly Larger	2.69 +/- 1.89	1.55 +/- 1.45	0.001
Vomiting	1.89 +/- 1.84	0.78 +/- 1.17	0.001
Not Able to Finish a Normal Sized Meal	3.5 +/- 1.52	2.05 +/- 1.45	< 0.001
Feeling Excessively Full After Meals	3.75 +/- 1.28	1.93 +/- 1.44	< 0.001

S1638

Clinical Characteristics and Outcomes of Gastritis Associated With Immune Checkpoint Inhibitors: Systematic Scoping Review

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Introduction: Among immune-related adverse events (irAE) associated with immune checkpoint inhibitors (ICI), immune-related gastritis (IMG) has been rarely described in the literature and has not yet been well characterized. This systematic scoping review aimed to characterize IMG in terms of precipitating agents, clinical presentations, and prognosis.
Methods: Following the PRISMA Extension for Scoping Reviews, we searched MEDLINE and EMBASE for all peer-reviewed articles using keywords including "gastritis", "immune checkpoint inhibitor", and "immune-related adverse event" from their inception to December 28, 2021.
Results: Twenty-two articles, including 5 observational studies and 17 case reports and case series, were included. Nivolumab, pembrolizumab, and combination therapy with those and cytotoxic T lymphocyte-associated antigen-4 (CTLA-4) inhibitor (ipilimumab) were commonly used in those with IMG. 59.8% had epigastric pain, and 50% had erosive gastritis; 87.5% had Common Terminology Criteria for Adverse Events (CTCAE) grade 3 gastritis, and 91.2% received corticosteroids. Recurrence was noted in 16.7%, and only one expiration was noted. 4.3% had positive *Helicobacter pylori* and cytomegalovirus from the gastric specimen.
Conclusion: Similar to immune-related colitis, patients with IMG may have a favorable prognosis with a better response to ICIs if treated appropriately. The diagnosis of IMG is made by exclusion, and a thorough workup is necessary to rule out concurrent *H. pylori* and cytomegalovirus involvement. Further studies are critical for a better understanding of this complication.

S1639

Metastatic Gastric Cancer to the Rectum: A Systematic Review

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Introduction: Rectal metastasis (RM) from gastric cancer (GC) is an extremely rare entity. Herein, we review trends to promote detection and strategies for management.
Methods: PubMed search for "gastric cancer" and "rectal metastasis," from database inception through April 30, 2022; pooled with a case from our institution.
Results: We included 25 cases with a female:male ratio of 1.77:1 (Table). Mean age (±SD) at RM was 57.5 (±12.1) years. Cases were metachronous in 68.2%, with a median time to RM of 45 (range 12-120) months. Histologically, 80% had diffuse-type adenocarcinoma (AC), 13.3% had intestinal-type AC, and 6.7% had gastroesophageal junction AC originating from the stomach. Regarding initial GC diagnosis (iGCd) AJCC stage and TNM classification, 28.6% were stage (St IIA, T3N0M0), the rest were evenly split at 14.3% for each of St IA (T1N0M0), St IB (T2N0M0), St IIIA (T3N2M0), St IIIB, and St IV (T3N0M1). Treatment included surgery alone (45.5%), chemotherapy (27.3%), surgery with chemotherapy (18.2%), and surgery with chemoradiation (9.1%). Rectal stenosis from Schnitzler's metastasis described in 68% of cases. The most common symptoms at RM were mechanical bowel obstruction—including abdominal mass, distension, discomfort, and/or pain (28.6%); constipation (24.5%); ascites (10.2%); and nausea, dyspepsia, or vomiting (8.2%), weight loss (8.2%), tenesmus (6.1%), rectal discharge or hematochezia (6.1%), and anemia (4.1%). RM median duration of symptoms was 60 (range 1-180) days with a median distance from dentate line of 5 (range 4-10) cm and a median rectal wall thickness of 11.5 (range 8-20) mm. All patients underwent lower endoscopy—sigmoidoscopy in 59.1%, and colonoscopy in 27.3%. EUS in 41.7%, CT abdomen/pelvis in 54.1%, EGD in 18.2%—75% were synchronous AC. Pelvic MRI was utilized in 12.5%. PET scan was utilized in 16.7%—all had established GC diagnosis, 75% presented with rectal stenosis, and 75% failed to detect RM on endoscopic mucosal biopsy requiring further surgical sampling. Regarding outcomes, 46.7% were alive and 53.0% succumbed to disease with a median follow-up of 6 (range 0.5-35.5) months after RM.
Conclusion: In our cohort, over 2-thirds of patients had a metachronous disease. Surgical sampling should be performed to detect RM when evaluating patients with mechanical bowel obstruction, even when the endoscopic mucosal biopsy is negative. Our findings would enhance accurate evaluation, and promote multidisciplinary management strategies that will eventually reshape outcomes.

Table 1. Characteristics of patients with RM from GC

Characteristics of Patients with RM from GC	
Female:Male	1.77:1
Mean age, (±SD)	57.5, (±12.1) years
Metachronous	68.2%
- Median time to RM in metachronous setting, (range)	45, (12-120) months
Histological subtype	
- Diffuse type AC	80%
- Intestinal type AC	13.3%
- Gastroesophageal junction originating from the stomach	6.7%
AJCC stage groups at the time of GC diagnosis, (TNM)	
- St IA (T1N0M0)	14.3%
- St IB (T2N0M0)	14.3%
- St IIA (T3N0M0)	28.6%
- St IIIA (T3N2M0)	14.3%
- St IIIB (NM)	14.3%
- St IV (T3N0M1)	14.3%
Rectal stenosis from Schnitzler's metastasis	68%
Most common symptoms at time of RM	
- Abdominal mass, distension, discomfort, and/or pain	28.6%
- Constipation	24.5%
- Ascites	10.2%
- Nausea, dyspepsia, or vomiting	8.2%
- Weight loss	8.2%
- Tenesmus	6.1%
- Rectal discharge or hematochezia	6.1%
- Anemia	4.1%
Median duration of symptoms at the time of RM diagnosis, (range)	60, (1-180) days
Median distance of RM from the dentate line, (range)	5, (4-10) cm
Median rectal wall thickness, (range)	11.5 (8-20) mm
Workup	
- Lower GI Endoscopy	
- Sigmoidoscopy	59.1%
- Colonoscopy	27.3%
- EGD	18.2%
- EUS	41.7%
- CT abdomen and pelvis	54.1%
- PET scan	16.7%
- Pelvic MRI	12.5%
Median duration of follow-up, (range)	6 (0.5-35.5) months
Treatment modalities	
- S alone	45.5%
- C alone	27.3%
- S+C	18.2%
- S+CRT	9.1%
Survival Outcomes	
- Alive	46.7%
- Died of disease	53.0%

RM: rectal metastasis; GC: gastric cancer; AC: adenocarcinoma; AJCC: American Joint Committee on Cancer; St: stage; TNM: TNM classification of malignant tumors; NM: not mentioned; S: surgery; C: chemotherapy; CRT: chemoradiation; GI: gastrointestinal; EGD: esophagogastroduodenoscopy; EUS: endoscopic ultrasound; CT: computed tomography; PET: positron emission tomography; MRI: magnetic resonance imaging.

S1640

Evaluation of COVID-19 Outcomes and Mortality in Gastrointestinal Patients With or Without Co-Morbidities During Initial Pandemic Wave: What Have We Learned so Far?

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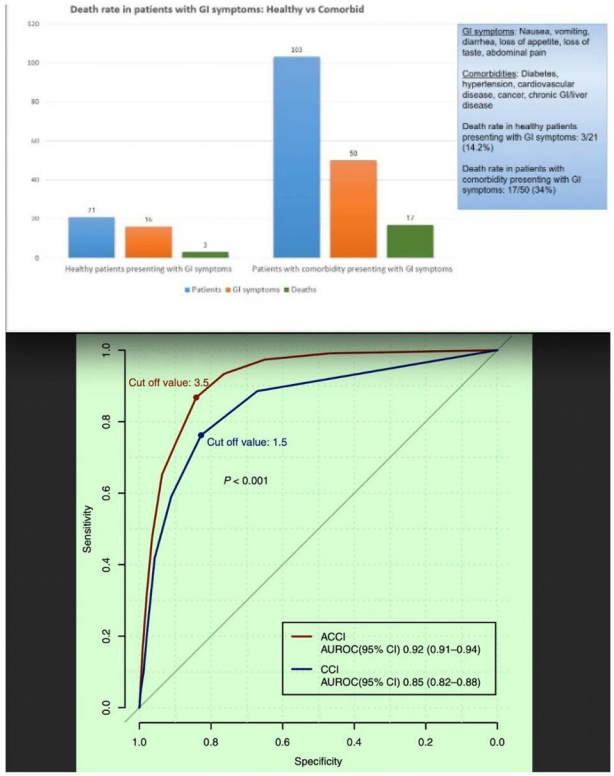
Introduction: Gastrointestinal (GI) symptoms are second most common presenting symptoms of COVID-19 infection. This study evaluates outcomes in COVID-19 patients with comorbidities (diabetes, hypertension, cardiovascular disease, cancers, chronic GI or lung disease) and GI symptoms like nausea, loss of appetite or taste, vomiting, diarrhea, abdominal pain during early pandemic wave.

Methods: We conducted a retrospective study of all confirmed COVID-19 adult patients >18 years of age, admitted in our center for a period of 6 weeks during March-April 2020. We extracted demographic, clinical and outcomes data from patient's electronic medical records. Primary outcomes were death, discharge, or transfer in patients with or without GI symptoms and comorbidities. Charlson comorbidity index (CCI) was used for analysis of mortality using the receiver operating characteristic (ROC) curve.
Results: From 124 patients included in this study, 103 had comorbidities (83%). Among them 48.5% had GI symptoms. Mortality among patients with GI symptoms was 34% & 14.2%, in patients with and without comorbidities, respectively. Mortality was significantly higher among the patients with both GI symptoms and comorbidities, lowering down the survival rates ($P< 0.01$). The ROC curve showed that CCI yielded better cut-off for predicting death in COVID-19 with higher area under the ROC, which supports the importance of comorbidities in the severity of COVID-19 (Figure).
Conclusion: Our main finding was that GI symptoms in comorbid patients are significant risk factors for mortality after age and sex adjustment. ACE-2 receptor, expressed in epithelial cells of GI tract, is the target for SARS-CoV-2 binding. Its expression is increased in comorbid conditions; henceforth increasing the risk and severity of COVID-19 infection. COVID-19 patients with GI symptoms and having comorbidities are more likely to develop more severe course and progression of the disease. Further studies are needed to evaluate the outcomes in these group of patients.



[1640] **Figure 1.** The receiver operating curve (ROC) showing that CCI (Charlson Comorbidity Index) yielded better cut-off for predicting death in COVID-19 with higher area under the ROC.

S1641

Infection Due to Gastric Band Procedure: Descriptive Analysis of Trends in U.S. Hospitalizations

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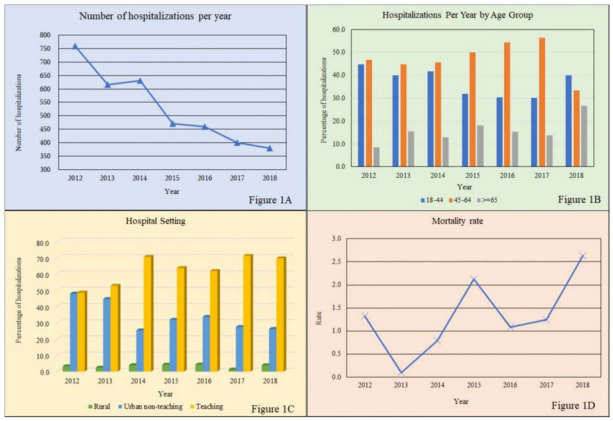
Introduction: Gastric band placement can predispose to infections including intra-abdominal or port-site infections. Limited epidemiological data exists regarding infections due to gastric band procedure including the number of annual hospitalizations, demographic variation, cost of care, comorbidity measures, and outcomes for hospitalizations with infections due to gastric band procedure.
Methods: We analyzed the National Inpatient Sample (NIS) database for all hospitalizations with Infections due to gastric band procedure (*ICD-9* code 539.01 and *ICD-10* code K95.01 as applicable) as primary or secondary diagnosis during the period from 2012-2018. NIS is the largest all-payer inpatient care database in the United States. Statistical significance of variation in the number of hospitalizations, demographic disparity, cost of care, comorbidity measures, and outcomes during the study period were determined using Cochran-Armitage trend test.
Results: Between 2012 and 2018, the number of hospitalizations ranged from 760 to 380 ($P=0.16$, Figure 1A). Hospitalizations were found to be more common in women ($P=0.004$) and Caucasians ($P< 0.0001$). Although age group 45-64 remained the most affected, there was an overall proportional decrease from 46.7% in 2012 to 33.3% in 2018 ($P=0.003$, Figure 1B). Generally, South remained the most affected region ($P=0.42$) throughout the study period. There was a significant decrease in the West from 23.0% to 13.2% ($P=0.009$) with a concurrent increase in the Midwest from 11.2% to 21.1% ($P< 0.0001$). A proportional decrease in the number of hospitalizations was seen at urban non-teaching hospitals (48.0% to 26.3%, $P< 0.0001$, Figure 1C), while the number increased at urban teaching hospitals (48.7% to 69.7%, $P< 0.0001$, Figure 1C). Mean length of hospital stay ranged from 5.6 ± 0.5 to 9.0 ± 1.3 days ($P=0.93$). Overall mortality ranged from 0.0% to 2.6% ($P=0.009$, Figure 1D). Some of the most associated comorbid conditions with infections due to gastric band procedure were obesity, hypertension, fluid and electrolyte disorders, diabetes without complications, and deficiency anemias.
Conclusion: During the study period, the annual number of hospitalizations with infections due to gastric band procedure showed a downward trend with an overall low inpatient mortality and interesting demographic variations. Further studies are needed to identify factors responsible for such trends to better understand and potentially support our findings.



[1641] **Figure 1.** Hospitalization data.

S1642

Factors Associated With Failure to Complete *Helicobacter pylori* Eradication Testing in an Urban Tertiary Care Center

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Introduction: Global trends in antibiotic resistance have limited progress in *Helicobacter pylori* eradication rates. Current data reflecting local antibiotic resistance and cure rates obtained from eradication tests are critical, but these tests may be inconsistently completed. As the first phase of a quality improvement initiative, we studied 481 patients treated for *H. pylori* at our institution to identify barriers to eradication test completion.
Methods: Patients > 18 years and treated for *H. pylori* during the 25-month study period were identified *via ICD-10* code query. Demographic data were collected along with data pertinent to the *H. pylori* diagnosis communication, provider characteristics, antibiotic prescription, and eradication test. Chi-squared testing was used to compare eradication test completion and cure rates between different groups. Multivariable logistic regression models were used to identify factors associated with incompletion of eradication tests and eradication failure.
Results: Overall, 301 patients (63%) completed eradication tests (minimum follow-up 8 months since antibiotic prescription); 71% of these patients had confirmed cure; 352 patients reported treatment completion; 83% of these (n= 292) completed eradication testing (Table). Univariate analysis identified multiple factors associated with failure to complete eradication tests, including male sex, African-American race, and letters to communicate the diagnosis. Multivariate analysis showed that communication *via* letter was associated with lower odds of eradication test completion compared to telephone call (OR = 0.29, CI: 0.10 - 0.84). Scheduled treatment encounters (i.e. in-office or telehealth encounters) for antibiotic prescription were also associated with lower odds of eradication test completion (OR = 0.20, CI: 0.06 - 0.68). Patients who had eradication testing ordered on the same day as antibiotic prescription were not more likely to complete eradication testing overall, but were more likely to complete it early (21.4% vs 9.2%, $P = 0.004$).
Conclusion: Our patients and prescribers may benefit from a standardized protocol to guide diagnosis communication, follow-up, and eradication testing which will be evaluated in the second phase of this quality improvement project. The protocol will include i) 2 methods of communicating the *H. pylori* diagnosis to each patient and deferral of ii) follow-up visit and iii) eradication testing order until after antibiotic completion.

Table 1. Adjusted Odds Ratios for Eradication Test Completion

Exposure	Adjusted OR	95% CI	*P*-value
Age	1.009	(0.978 - 1.041)	0.575
BMI	0.984	(0.935 - 1.035)	0.529
Sex			
Male	0.616	(0.278 - 1.361)	0.231
Race/ethnicity			
White vs African-American	0.357	(0.105 - 1.213)	0.099
White vs Hispanic	0.794	(0.215 - 2.928)	0.729
White vs Asian/Other	42.890	(2.203 - 835.148)*	0.013
Primary language			
English	0.740	(0.239 - 2.287)	0.600
H. pylori history			
Prior treatment	1.284	(0.465 - 3.551)	0.630
Diagnosis communication			
Telephone vs letter	0.288	(0.099 - 0.836)*	0.022
Telephone vs MyChart	0.316	(0.067 - 1.483)	0.144
Treatment encounter			
None vs in-office/telehealth	0.203	(0.060 - 0.684)*	0.010
Treatment regimen			
Bismuth vs clarithromycin	1.061	(0.411 - 2.736)	0.903
Bismuth vs other	1.375	(0.463 - 4.089)	0.567
Prescriber department			
Gastroenterology	1.538	(0.452 - 5.226)	0.491
Prescriber level			
Physician	1.047	(0.294 - 3.730)	0.943

Table 1. (*continued*)

Exposure	Adjusted OR	95% CI	*P*-value
Prescribed by endoscopist	0.683	(0.275 - 1.699)	0.412
Test and abx ordered same day	0.990	(0.429 - 2.287)	0.981
Abx nonadherence	0.930	(0.251 - 3.448)	0.913

S1643

Risk Factors for Malignancy in Patients With Gastric Wall Thickening

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Introduction: Gastric wall thickening (GWT) can be due to an amalgam of reasons, including, but not limited to gastrointestinal (GI) malignancy, infection, ischemia or inflammation. Current data suggests that focal, irregular and asymmetrical thickening of the GI tract can indicate malignancy. The aim of our project was to identify predisposing risk factors in patients with GWT, predictive for GI malignancy.
Methods: Extensive electronic medical record review was performed to identify patients 18 years of age or older with computed tomography scan reports including the word, "thickening". A follow up endoscopy report with biopsy results was necessary for inclusion. Data, including patient demographics such as age, gender, race, body mass index (BMI) and lab results were collected. Pathology reports of biopsy specimens were also reviewed and recorded. P-values were then calculated using Wilcoxon rank sum test for comparison of medians and chi-squared test for categorical values.
Results: Overall, 99 patients, 39 males and 60 females, with a history of GWT were identified and included in our study (Table). Eighty-four patients (85%) were African American (A.A.), 6 were White (6%) and 5 (5%) were Hispanic. Thirteen patients with GWT had pathology consistent with malignancy, of which, 8 had gastric adenocarcinoma, 3 had mesenchymal or stromal tumors, one had lymphoma and one had metastatic disease. Race was found to be the sole statistically significant risk factor associated with a higher risk of malignancy (P-value $< .03$). Of the 13 patients with malignancy, 9 were A.A. (69%) and 2 (15%) were of Hispanic origin. None of our White or Asian cohort had evidence of malignancy. Gender, BMI, and lab work including hemoglobin, White cell count, metabolic panel, liver enzymes, coagulation factors and thyroid function were not found to be statistically significant.
Conclusion: Currently, data regarding risk factors associated with GWT leading to malignancy is scarce. Our research highlights that African Americans made up the highest percentage of patients in both the malignancy and non-malignancy cohort. There was also a higher percentage of Hispanic patients in the malignancy group compared to the non-malignancy group. There were no White or Asian patients with evidence of malignancy in our study. Differences in BMI and blood work were not found to be statistically significant. Further research is necessary to determine other possible risk factors for malignancy which may exist but were not noted during the course of this study.

Table 1. **Demographics of patients with GWT including sex, race and BMI**

Patients without Malignancy (n=86)			**Patients with Malignancy (n=13)**			
Sex	Number (n)	%	Sex	Number (n)	%	P-value
Male	32	37.21%	Male	7	53.85	.253
Female	54	62.79%	Female	6	46.15	
Race	Number (n)	%	Race	Number (n)	%	P-value
African American	75	87.21	African American	9	69.23	**.03**
White	6	6.98	White	0	0	
Hispanic	3	3.49	Hispanic	2	15.38	
Asian	1	1.16	Asian	0	0	
Others	0	0	Others	1	7.69	
Unknown	1	1.16	Unknown	1	7.69	
BMI	Number (n)	%	BMI	Number (n)	%	P-value
Underweight	5	5.81	Underweight	2	15.38	.072
Normal	27	31.4	Normal	5	38.46	
Overweight	21	24.4	Overweight	5	38.46	
Obese	33	38.3	Obese	1	7.69	

S1644

Differences in Therapeutic Response Among Patients With Atypical Causes of Gastroparesis

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Introduction: Aside from dietary modification, patients with gastroparesis are often prescribed medications to manage their gastrointestinal symptoms. Prokinetic agents as well as endoscopic pyloric botulinum toxin injection are frequently used to treat gastroparesis. Most of these therapies have been previously studied only in idiopathic or diabetic gastroparesis, the most common etiologies of gastroparesis. We aim to describe how symptom response to gastroparesis therapies differs among atypical causes of gastroparesis compared to diabetic and idiopathic causes.
Methods: Gastroparesis patients being evaluated at our institution between 2018 and 2021 completed a questionnaire inquiring about prior gastroparesis therapies tried; particularly metoclopramide, domperidone, erythromycin, and botulinum toxin injection. Patients self-reported whether they had previously tried the therapy, if the therapy improved their symptoms, and whether they experienced any associated side effects. Patients were divided into groups relating to their etiology of gastroparesis: diabetic, postsurgical (PSGp), connective tissue (CTGp), neurologic (NGp) and idiopathic.
Results: A total of 256 patients with gastroparesis completed the questionnaire. Metoclopramide was the therapy most atypical gastroparesis patients had previously tried (PSGp 58.6%, CTGp 69.2%, NGp 60.0%). Atypical gastroparesis patients generally reported poor symptom improvement with both prokinetic agents and botulinum toxin injection (Table). Postsurgical (metoclopramide 41.2%, domperidone 57.1%, erythromycin 50.0%) and connective tissue gastroparesis (metoclopramide 33.3%, domperidone 50.0%, erythromycin 66.7%) reported prokinetic-related side effects more frequently than neurologic gastroparesis (metoclopramide 33.3%, domperidone 33.3%, erythromycin 0.0%, $P< 0.001$). Idiopathic, diabetic, PSGp, and CTGp groups reported no side effects after pyloric botulinum injection.
Conclusion: Metoclopramide was the most widely used therapy for patients with atypical gastroparesis. Symptom improvement with prokinetics and botulinum injection was poor among atypical causes of gastroparesis. Side effects associated with domperidone and erythromycin were more frequently noted in patients with PSGp and CTGp patients than NGp. Current treatment options for gastroparesis are limited and options may be further limited for patients with atypical gastroparesis due to associated side effects.

Table 1. **Therapeutic response among patients with atypical gastroparesis. Data is represented as number of patients (percentages)**

	Metoclopramide	Domperidone	Erythromycin	Botulinum toxin
Idiopathic (n=149)				
Previously tried	83 (55.7%)	32 (21.5%)	34 (22.8%)	21 (14.1%)

Table 1. (*continued*)

	Metoclopramide	Domperidone	Erythromycin	Botulinum toxin
Symptoms improved	20 (24.1%)	13 (40.6%)	4 (11.8%)	9 (42.9%)
Experienced side effects	40 (48.2)	5 (15.6)	4 (11.8%)	0 (0.0%)
Diabetic (n=60)				
Previously tried	42 (70.0%)	14 (23.3%)	11 (18.3%)	14 (23.3%)
Symptoms improved	16 (38.1%)	7 (50.0%)	4 (36.4%)	1 (7.1%)
Experienced side effects	12 (28.6%)	0 (0.0%)	1 (9.1%)	0 (0.0%)
Postsurgical (n=29)				
Previously tried	17 (58.6%)	7 (24.1%)	8 (27.6%)	6 (20.7%)
Symptoms improved	3 (17.6%)	2 (28.6%)	2 (25.0%)	2 (33.3%)
Experienced side effects	7 (41.2%)	4 (57.1%)	4 (50.0%)	0 (0.0%)
Connective tissue (n=13)				
Previously tried	9 (69.2%)	2 (15.4%)	3 (23.1%)	5 (38.5%)
Symptoms improved	2 (22.2%)	0 (0.0%)	0 (0.0%)	1 (20.0%)
Experienced side effects	3 (33.3%)	1 (50.0%)	2 (66.7%)	0 (0.0%)
Neurologic (n=5)				
Previously tried	3 (60.0%)	3 (60.0%)	3 (60.0%)	1 (20.0%)
Symptoms improved	2 (66.7%)	2 (66.7%)	1 (33.3%)	0 (0.0%)
Experienced side effects	1 (33.3%)	1 (33.3%)	0 (0.0%)	1 (100.0%)

S1645

Characterizing Abdominal Pain in Patients With Gastroparesis

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Introduction: Patients with gastroparesis (Gp) present with nausea, vomiting, and early satiety. Abdominal pain can be present in Gp. The cause of pain in patients with Gp is unknown. In patients whose main symptom is abdominal pain, other etiologies should be sought. Chronic pancreatitis and acute porphyria are potential causes.
Methods: Patients with Gp diagnosed by gastric emptying studies completed Patient Assessment of Upper GI Symptoms (PAGI-SYM) questionnaire to assess symptoms. Patients reporting abdominal pain also answered questions to assess pain characteristics and underwent testing for serum trypsin, amylase, lipase, urine porphyrins, and urine porphobilinogen.
Results: Of 158 patients with Gp (140 (88.6%) were women, average age 46 ± 16 years, BMI (27 ± 7.0). 86 (54.4%) patients reported abdominal pain as a symptom. The most common locations were periumbilical (38.6%) and left upper quadrant (22.9%). 73.2% of patients with abdominal pain reported constant pain, with the majority (91.5%) having acute exacerbations of pain. The mean severity of constant pain was 2.94 ± 0.93 (scale from 0 = none to 4 = very severe), whereas the severity during acute exacerbations was 3.07 ± 0.82. 48.7% of patients reported radiation of pain, most commonly to the back (86%). Abdominal pain was most frequently exacerbated by eating (78.2%) and improved with pain medications (53.9%) and rest (52.6%). There was no difference in the prevalence of abdominal pain between DM and non-DM patients (43(53%) vs 107(56%); $P = 0.807$). DM and non-DM patients reported similar abdominal pain severity (chronic pain: 3.13 vs 2.89; $P = 0.78$, acute pain: 3.06 ± 0.87 vs 3.00 ± 0.80; $P = 0.81$). One patient with abdominal pain had an elevation in urine porphyrins (227.1 mg/L) and one had elevated urine PBG (4.1 mg/L). None of 45 (0%) patients with abdominal pain had low trypsin levels (< 30 mg/L). No correlation was found between serum trypsin and pain severity ($r = 0.114$; $P = 0.457$).
Conclusion: Abdominal pain was present in 54% of patients with Gp and characterized by constant pain with intermittent exacerbations. The pain was frequently exacerbated by eating and relieved by pain medications/rest. There were no significant differences in pain severity between DM and non-DM patients. Abnormal pancreatic enzyme and urine porphyrin levels were uncommon among Gp patients with abdominal pain and not correlated with symptom severity. Thus, abdominal pain is frequent in patients with gastroparesis but the cause remains largely unknown.

S1646

Impact of Anxiety and Depression Treatment on Symptom Severity and Quality of Life in Patients With Gastroparesis

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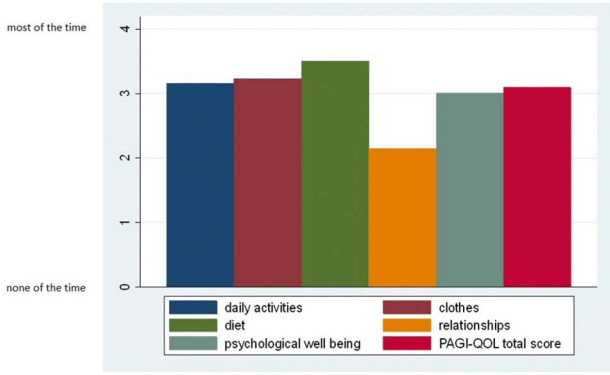
Introduction: The association between symptoms of gastroparesis and treatment of concomitant anxiety or depression remains understudied.
Methods: Eligible patients identified from review of ICD codes associated with gastroparesis and anxiety or depression from our hospital underwent structured telephone interviews. The PAGI-SYM scale–which characterizes the severity of gastrointestinal symptoms and PAGI-QOL – which examines the impact of symptoms to quality of life were utilized to assess patient outcomes. Scores vary from 0 (none or absent) to 5 (very severe). A total score for each questionnaire was computed. Spearman rank correlation was used to determine associations between PAGI scores and treatment follow up and compliance for anxiety and depression which was patient reported. A P-value < 0.05 was considered statistically significant.
Results: Thirty-three patients were included for analysis. The mean age was 48.4±10.6 and 88% were female. 70% were African American while 24% were Caucasian. 91% were diagnosed with depression, 9% had anxiety alone while 67% had both. More than half followed up with a psychiatrist (53%) with 82% taking medications for their anxiety or depression. However, only 55% of the patients were compliant with their psychiatric medications. Based on the PAGI-SYM score, postprandial fullness, bloating and upper abdominal pain were within the 3 range (affected a good bit of time) while the rest of the symptoms were reported as < 3. The mean total PAGI-SYM score was 3.1±1.3. Most of the PAGI-QOL scale scores were also within the 3 range and the most affected scale was diet (3.5±1.3) while the least affected was relationships (2.2±1.7). The mean total PAGI-QOL score was 3.1±1.2 (see Figure). There was a significant positive correlation between PAGI-QOL scores and PAGI-SYM (Rho:0.52, P=0.006) with higher symptom scores associated with greater negative effects on quality of life. However, there were no significant correlations between PAGI-QOL and PAGI-SYM scores with patients receiving treatment for psychiatric illness, medication compliance, and follow-up with a psychiatrist in our cohort.
Conclusion: Gastrointestinal symptoms in patient with gastroparesis negatively impact on quality of life, however there were no significant correlations between symptom severity or QOL and psychiatrist follow up, treatment, or medication use for anxiety or depression in this patient cohort. Additional studies involving larger cohorts are needed.



[1646] **Figure 1.** Mean scores by subscale and total Patient Assessment of Upper Gastrointestinal Disorders-Quality of Life (PAGI-QOL).

S1647

Host-Related Gastritides: Diagnostic Footnotes or Neglected Diseases?

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Introduction: While the Kyoto Global Consensus Report on Gastritis focused on *Helicobacter pylori*, it also discussed those gastritides that, for lack of a better understanding of their etiology, appear to stem from immune mediated imbalances within the host. These include autoimmune atrophic gastritis (AIG), lymphocytic (LyG), eosinophilic (EoG), collagenous (CG), idiopathic granulomatous (GrG), and *Hp*-negative chronic active gastritis (*Hp*-neg CAG). The purpose of this study was to determine how frequently these conditions were diagnosed in a large US database of patients who had gastric biopsies over a period of 12 years.
Methods: We extracted all patients with a gastric biopsy between 2008-2020 from Inform Diagnostic's IDEA database, a large database of codified pathology reports. We then calculated the frequency of AIG, LyG, EoG, CG, GrG, and Hp-neg-CAG and their corresponding age and gender statistics.
Results: The frequency of the diagnoses of the host-related gastritides is depicted in the Table. Of 1,510,775 unique patients who had gastric biopsies, these gastritides accounted for < 2% of all diagnoses, in contrast, for example to 9.5% for *H. pylori* gastritis.
Conclusion: The reported frequencies are based exclusively on the diagnoses generated by gastrointestinal pathologists using predetermined diagnostic keys in one large, specialized laboratory. A very small number of diagnoses may have been missed because some pathologists may occasionally use an uncoded phrase of a descriptive diagnosis. This may be particularly true in the case of AIG, which some pathologists prefer to diagnose descriptively, and EoG, which has no accepted diagnostic guidelines. In spite of their low prevalence, these forms of gastritis need to be recognized, followed up, and in some cases treated. Thus, their rarity should not make them any less relevant to the clinical community.

Table 1. Frequency of several host-related gastritides in patients with gastric bioipsies

Gastric phenotype	Patients (%)	Median age (range)	Males (%)
Atrophic autoimmune	4,338 (0.29)	65 (14 - 99)	1,101 (25.4)
Lymphocytic	2,936 (0.19)	58 (1 - 95)	1,175 (40.0)
Eosinophilic	416 (0.03)	47 (1 – 89)	193 (40.3)
Collagenous	217 (0.01)	59 (10 – 90)	60 (46.4)
Hp-negative active	17,599 (1.16)	56 (1 – 99)	6,491 (36.9)
All patients	1,510,775	57 (0 – 102)	573,308 (37.9)

S1648

Pharmacy Intervention Matters: Improving the Quality of Care of *Helicobacter pylori* Treatment

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Introduction: *Helicobacter pylori* (HP) infection has an estimated prevalence of ~4.4 billion individuals worldwide. Clinical features range from asymptomatic to mucosa-associated lymphoid tissue lymphoma. It is important to ensure effective eradication, including patient compliance and appropriate treatment courses. The study aim was to compare HP treatment managed by a clinical pharmacist to standard care with regard to medication compliance and successful eradication.
Methods: A retrospective review of adult patients diagnosed and treated for HP at our center was performed between 3/2019 and 11/2021. All included individuals were then divided into 2 groups. The pre-pharmacy group (3/2019 to 6/2020) received standard care for HP infection while the pharmacist intervention group (7/2020 to 11/2021) had a clinical pharmacist manage treatment and document eradication or persistence of HP upon completion as the primary outcome variable. Data analyzed included age, gender, BMI, alcohol use, drug/tobacco use, pre-treatment symptoms, diagnostic method (gastric biopsy, stool antigen, urea breath test), EGD results, pharmacologic treatment, clinic follow-up type, confirmation test type/result, post-treatment symptoms and any previous HP therapy.
Results: A total of 134 patients were diagnosed and treated for HP in the study period. Thirty-8 (38) patients had standard HP treatment and were considered the pre-pharmacy intervention group while 96 patients had HP therapy managed by a clinical pharmacist comprising the pharmacist intervention group. The pharmacist intervention group was more likely to complete eradication confirmation testing (26% vs 10.5%, $P< 0.05$). Additionally, pharmacist intervention group patients had lower rates of incomplete eradication compared to the pre-pharmacy group (7.3% vs 28.9%, $P=0.009$). Increased use of triple therapy was noted in the pre-pharmacy group vs a regimen of PPI, clarithromycin, amoxicillin, and metronidazole among those managed by the clinical pharmacist ($P=0.001$). Clinical and demographic factors as well as method of diagnosis, EGD findings or previous treatment were not different between groups (Table).
Conclusion: Clinical pharmacist intervention improved care of patients with HP treated at our academic center by increasing eradication rates, more appropriate selection of antibiotic regimens and improved rates of follow up for confirmation testing. Such a HP care model should be considered at other institutions with difficulty obtaining successful HP eradication.

Table 1. Helicobacter pylori confirmation testing outcomes in the pre-pharmacy intervention group and post-pharmacy intervention groups after treatment

Confirmation Test Result	Pre-Pharmacy	Post-Pharmacy	
Indeterminate	0 (0.0%)	3 (3.1%)	
Not Done	4 (10.5%)	23 (24.0%)	
Negative	23 (60.5%)	62 (64.6%)	
Positive	**11 (28.9%)**	**7 (7.3%)**	*P*-value = 0.009
Total	38	96	

S1649

Factors Associated With Delayed Gastric Motility: A Retrospective Case-Control Study

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Introduction: Gastrointestinal motility is regulated by peristalsis and segmentation. Peristaltic regulation is mainly by hormones and the autonomic nervous system. The current literature does not provide data on different pathological diseases that may affect motility. We aim to do a retrospective study to correlate different factors that may delay gastric motility.

Methods: A retrospective review of the Nuclear Medicine procedure database was performed for all patients having Gastric Emptying Study (GES) between 2011 and 2020. The research protocol was approved by the Institutional Board Review of the MedStar Washington Hospital Center. Patients included if GES was performed and have laboratory data available within 6 weeks of the index study. Exclusion criteria were duplicate studies, failure to complete gastric emptying study, patients on medications known to affect gastric function, and previous gastric surgery. The *P*-values are for comparison of demographic and laboratory characteristics between the study groups. We used the chi-squared test for categorical variables and the T-test for continuous variables.

Results: In all, 1,205 GES was done between 2011 and 2020. Of those studies, 455 fit our inclusion criteria. Seventy-three patients had delayed gastric emptying, while 334 patients had normal gastric emptying studies (Table). The mean age for the delayed group was 51.7 years old, without a significant difference from normal gastric emptying ($P = 0.268$). Female represent 47 patients (64.4%), while male represent 26 patient's (35.6%) in the delayed emptying group, with no significant difference between the study group ($P = 0.26$). The delayed emptying group has a higher rate of chronic kidney disease at 17.8% ($P = 0.004$) and diabetes at 54.8% ($P = 0.001$) in comparison with 7.5% and 24.9% consecutively. Other comorbidities such as infections around the time of the study, cirrhosis, and hypothyroidism, did not reach statistical significance. On laboratory values, magnesium and glucose were significantly higher in the delayed emptying group ($P < 0.001$). Other laboratory findings as T4, hemoglobin A1c, phosphorus, albumin, and creatinine level were not significant.

Conclusion: We found in our study that diabetic patients and Chronic kidney disease have a higher tendency to delayed gastric emptying. Magnesium and glucose had the same effect on gastric emptying. Further studies are needed to validate these findings.

Table 1. Baseline Characteristics of patients with delayed gastric emptying in comparison with normal gastric emptying patients

	Normal		Delayed		*P*-value
	N	%	N	%	
Total	334	-	73		
Sex					0.268
Male	97	29%	26	35.6%	
Female	237	71%	47	64.4%	
Infection	4	1.2%	1	1.4%	0.84
Hypothyroidism	15	4.5%	3	4.1%	0.386
CKD	25	7.5%	13	17.8%	**0.004**
Diabetes	83	24.9%	40	54.8%	**< 0.001**
Insulin	23	6.9%	13	17.8%	**0.019**
	Mean	**SD**	**Mean**	**SD**	
Age	50.73	17.46	51.74	15.17	0.689
T4	1.51	1.49	0.85	0.48	0.506
Magnesium	1.66	0.36	2.06	0.29	**< 0.001**
Glucose	122.98	54.46	187.30	84.89	**< 0.001**
Calcium	8.74	0.72	8.18	1.74	0.151
HgA1c	7.58	2.09	8.04	3.23	0.436
Phosphorous	3.99	1.45	4.70	1.69	0.178
Albumin	4.06	4.16	3.20	0.68	0.197
Potassium	4.11	0.45	4.22	0.67	0.946
Creatinine	2.03	2.79	2.59	3.15	0.584

S1650

The Influence of Non-Alcoholic Fatty Liver Disease (NAFLD) on Peptic Ulcer Disease Hospitalizations: A Comparative Analysis in the United States

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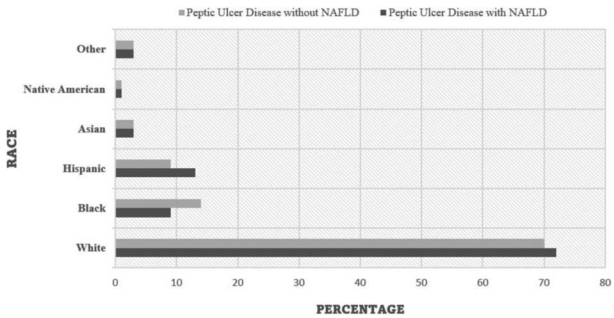
Introduction: The global age-adjusted standardized incidence and prevalence rates of peptic ulcer disease (PUD) have declined over the last few decades. Nonetheless, studies have reported higher rates of PUD and its complications in patients with chronic liver disease. However, there continues to be a significant paucity of data on the impact of non-alcoholic fatty liver disease (NAFLD) in patients with PUD. In this study, we aimed to determine the influence of NAFLD on PUD hospitalizations in the United States (US).
Methods: The National Inpatient Sample was utilized to identify all adult hospitalizations of PUD in the US from 2009–2019. The study population was sub-grouped based on the presence or absence of NAFLD. Hospitalization characteristics and outcomes were compared. P-values ≤0.05 were statistically significant.
Results: Between 2009–2019, there were 50,769 and 4,624,628 PUD hospitalizations with and without NAFLD, respectively. PUD hospitalizations with NAFLD had a lower mean age (58.6 vs 65.3%, $P< 0.001$) compared to non-NAFLD PUD hospitalizations. Racial differences were evident as we noted a higher proportion of Whites (72 vs 70%, $P< 0.001$) and Hispanics (13 vs 9%, $P< 0.001$) for PUD hospitalizations with NAFLD compared to the non-NAFLD PUD cohort (Figure). Additionally, PUD hospitalizations with NAFLD had a higher proportion of patients with Charlson Comorbidity Index (CCI) ≥3 (55 vs 49%, $P< 0.001$) compared to non-NAFLD PUD hospitalizations. Although we did not find a statistical difference in the rates of bleeding PUD and H. Pylori infection between the 2 groups, PUD hospitalizations with NAFLD had higher upper endoscopy utilization (49 vs 41%, $P< 0.001$) compared to the non-NAFLD PUD cohort. Interestingly, PUD hospitalizations without NAFLD had a higher proportion of patients with peptic ulcer perforation (5 vs 3%, $P< 0.001$) compared to the NAFLD cohort. Furthermore, we noted lower inpatient mortality (2 vs 3%, $P=0.0004$), mean length of stay [LOS] (5.8 vs 6.2 days, $P< 0.001$), and mean total healthcare charge [THC] ($58,970 and $63,500, $P< 0.001$) for PUD hospitalizations with NAFLD compared to those without NAFLD (Table).
Conclusion: Despite a higher proportion of patients with CCI≥3, PUD hospitalizations with NAFLD had lower inpatient mortality, mean LOS, and mean THC compared to the non-NAFLD PUD cohort. However, we noted increased utilization of upper endoscopy for PUD hospitalizations with NAFLD. Additional studies are needed to fully understand the impact of NAFLD on PUD populations.



[1650] **Figure 1.** Comparative analysis of racial distribution for peptic ulcer disease (PUD) with and without non-alcoholic fatty liver disease (NAFLD) in the United States from 2009-2019.

Table 1. Comparative analysis of hospitalization characteristics and clinical outcomes between peptic ulcer disease (PUD) hospitalizations with and without non-alcoholic fatty liver disease (NAFLD) in the United States between 2009-2019

Variable	Peptic Ulcer Disease With NAFLD	Peptic Ulcer Disease Without NAFLD	P-value
Total Hospitalizations	50,769	4,624,628	
Mean Age (years)	58.6	65.3	P< 0.001
Age Group (years)			P< 0.001
18 – 34	3,104 (6%)	225,792 (6%)	
35 – 49	9,885 (21%)	564,660 (15%)	
50 – 64	19,240 (40%)	1,269,460 (33%)	
65 – 79	15,373 (32%)	1,521,339 (40%)	
≥ 80	276 (0.5%)	211,456 (6%)	
Gender			P< 0.001
Male	21,441 (42%)	2,275,364 (49%)	
Female	29,328 (48%)	2,349,263 (51%)	
Race			P< 0.001
White	34,620 (72%)	3,051,156 (70%)	
Black	4,113 (9%)	623,580 (14%)	
Hispanic	6,270 (13%)	392,433 (9%)	
Asian	1,222 (3%)	145706 (3%)	
Native American	439 (1%)	25,873 (1%)	
Other	1,400 (3%)	117,721 (3%)	
Charlson Comorbidity Index (CCI)			P< 0.001
CCI = 0	0 (0%)	0 (0%)	
CCI = 1	12,859 (25%)	1,377,184 (30%)	
CCI = 2	10,007 (20%)	1,002,896 (22%)	
CCI ≥ 3	27,907 (55%)	2,245,536 (49%)	
Hospital Region			P< 0.001
Northeast	7,089 (14%)	821,188 (18%)	
Midwest	12,201 (24%)	1,085,393 (23%)	
South	20,670 (41%)	1,808,454 (39%)	
West	10,812 (21%)	910,580 (20%)	
Hospital Bed Size			P< 0.001
Small	6,945 (14%)	743,056 (16%)	
Medium	13,615 (27%)	1,294,531 (28%)	
Large	30,065 (59%)	2,570,873 (56%)	

Table 1. (*continued*)

Variable	Peptic Ulcer Disease With NAFLD	Peptic Ulcer Disease Without NAFLD	P-value
Hospital Location			*P*< 0.001
Rural	4,034 (8%)	479,819 (10%)	
Urban Nonteaching	16,353 (32%)	1,547,598 (34%)	
Urban Teaching	30,238 (60%)	2,581,043 (56%)	
Bleeding Ulcer	2,661 (5%)	242,944 (5%)	*P*=0.9
Ulcer Perforation	1,513 (3%)	248,107 (5%)	*P*< 0.001
H. Pylori Infection	1,709 (3%)	161,776 (3%)	*P*=0.5
Upper Endoscopy	25,046 (49%)	1,914,968 (41%)	*P*< 0.001
Inpatient Mortality	1,217 (2%)	139,067 (3%)	*P*=0.0004
Mean Length of Stay (days)	5.8	6.2	*P*< 0.001
Mean Inpatient Charge (USD)	58,970	63,500	*P*< 0.001

S1651

Sociodemographic Factors Associated With Hospital Readmission in Patients With Peptic Ulcer Disease in the State of Florida

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Introduction: Peptic ulcer disease (PUD) is a common cause of gastrointestinal-related hospitalizations. However, the association between sociodemographic characteristics and PUD-related readmission remains unclear. We aimed to determine whether the risk of 30-day readmission among patients with PUD varies by patient- and county-level sociodemographic and clinical variables.
Methods: We used data from the Florida State Inpatient Database (4th quarter of 2015 to 3rd quarter of 2019) to identify patients aged 18-85 who underwent esophagogastroduodenoscopy (EGD) during an index admission for PUD. Patient- and county-level sociodemographic variables were extracted. The primary outcome was 30-day readmission after the index admission for PUD. Descriptive comparisons of continuous and categorical variables were analyzed using student's *t*-tests and chi-square tests, respectively. Multivariable logistic regression was used to estimate odds ratios (ORs) and 95% confidence intervals (CI) for 30-day readmissions.
Results: Among 8803 index admissions for PUD, 1439 (17.9%) readmissions occurred within 30 days. Readmission rates differed by race, primary payer, and length of stay but not sex, rural/urban residential location, median household income by zip code, or comorbidities. Index admission length of stay was longer for patients that were readmitted versus not readmitted (median 5 versus 4 days, $P < 0.001$). Compared to White patients, readmission was less likely among individuals who identified as Black (OR=0.79, 95% CI 0.66 – 0.95) or Hispanic (OR=0.72, 95% CI 0.59 – 0.89), after accounting for other patient- and county-level variables. Compared to Medicare beneficiaries, readmission was less likely among patients with private insurance (OR = 0.69, 95% CI 0.57 – 0.83) or self-pay (OR = 0.57; 95% CI 0.43 – 0.75).
Conclusion: In the state of Florida, White patients and Medicare beneficiaries were more likely to be readmitted, after accounting for sociodemographic and clinical factors. These results may indicate that White patients and those with Medicare were more likely to receive optimal care.

S1652

Treatment and Eradication of *Helicobacter pylori* at a Safety Net Hospital

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Introduction: *Helicobacter pylori* is the most common chronic bacterial infection and resistance pattern is thought to be increasing. The aim of our study was to determine in adult patients at a safety-net hospital with confirmed *H. pylori* infection the overall failure rate, prescribing patterns, and the failure rate of quadruple therapy compared to triple therapy.
Methods: We conducted a retrospective cohort study at a safety-net hospital from 2020-2021. Linked data sources were extracted, including pathology results from endoscopy, *H. pylori* stool antigen, and *H. pylori* serology tests. We included consecutive adult patients with a diagnosis of *H. pylori* infection by serology, stool, or histology, who were prescribed antibiotic therapy, and who had confirmed eradication testing by either stool antigen or histology. Patients who were diagnosed with *H. pylori* but did not receive treatment, or those who received treatment but did not have confirmation testing were excluded. Descriptive statistics and chi-square tests were performed.
Results: One hundred patients were included in the analysis to date. Characteristics of patients with confirmed *H. pylori* infection included a median age of 47 (range 18-74), 61% female, and 54% Hispanic ethnicity followed by 21% Asian. Eighty-six percent of patients received triple therapy compared to 14% who received quadruple therapy. Ninety percent received a 14-day antibiotic regimen compared to 10% who received a 10-day regimen. The overall *H. pylori* treatment failure rate was 16%. The failure rate of quadruple therapy was 28.6% compared to 14% for triple therapy (*P*=0.16). Women were somewhat more likely to experience treatment failure (21.3% vs 7.7%, *P*=0.07) while Asians had the lowest overall failure rate of 4.8% (*P*=0.10; Table).
Conclusion: In this retrospective cohort study of adult patients at a safety net hospital with confirmed *H. pylori* infection, the overall failure rate was modestly lower than the published literature. Moreover, triple therapy tended to be more effective than quadruple therapy. Increased power and multivariable analysis are needed to account for confounding in triple therapy compared to quadruple therapy by gender and race/ethnicity.

Table 1. **Risk of *H. pylori* treatment failure**

	Treated, n	Failed, n	Failure Rate (%)	RR, 95% CI	P-value
Overall	100	16	16.0%		
Age					
< = 45	44	9	20.5%	–	
> 45	56	7	12.5%	0.61	0.28
Gender					
Female	61	13	21.3%	–	
Male	39	3	7.7%	0.36	0.07
Race/Ethnicity					
Hispanic	54	11	20.4%	–	
Asian	21	1	4.8%	0.44	0.10
Non-Hispanic Black	8	1	12.5%	0.61	0.60

Table 1. (*continued*)

	Treated, n	Failed, n	Failure Rate (%)	RR, 95% CI	P-value
Non-Hispanic White	11	2	18.2%	0.82	0.77
Treatment type					
Triple therapy	86	12	14.0%	–	
Quadruple therapy	14	4	28.6%	2.05	0.16
Duration of Treatment					
14 day regimen	90	13	14.4%	–	
10 day regimen	10	3	30.0%	2.08	0.20

S1653

Identification of Trends in Post COVID-19 Infection Gastroenterology Clinic Referrals

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Introduction: Post-viral gastrointestinal symptoms are well recognized. Over 50% of patients hospitalized with COVID-19 experienced at least one GI symptom. Here we aim to look at longer-lasting sequelae of COVID infections on the digestive system by identifying trends in patients after the resolution of acute COVID symptoms.
Methods: A retrospective chart review was performed on all patients referred to the Northwestern Medicine post-COVID GI clinic from November 2020 - June 2021. For each patient, data regarding demographics and hospitalization/ICU stays during their COVID infection, psychiatric comorbidities, and GI history/medications were reviewed. EMR was reviewed to determine if they had changes in bowel habits, loss of appetite, nausea, GE reflux, abdominal pain, and/or bloody stools.
Results: 45 patients were referred to the clinic during this 8 month period; however, 6 missed their appointments and thus a total of 39 patients were evaluated. There were 10 males and 29 females (avg age 42). Five of these patients were hospitalized during their COVID infection (3 were in the ICU). The most common reported symptoms were change in bowel habits (85%), abdominal pain (69%), nausea (51%), GE reflux (38%), loss of appetite (31%), and/or bloody stools (15%). Of the 85% of patients who endorsed change in bowel habits, 8/33 reported constipation, 19/33 reported diarrhea, and 6/33 had a mixed picture. 51% of patients had a psychiatric comorbidity of anxiety or depression. 62% of patients had a prior GI history, of which GERD and IBS were the most common. 74% of patients were noted to be on a prior GI medication, of which a PPI or H2 blocker were most common.
Conclusion: The majority of patients seen in the post-COVID GI clinic reported a change in bowel habits (primarily diarrhea). A large percentage of patients were also noted to have concomitant psychiatric comorbidities of depression and/or anxiety. As with other GI tract diseases (e.g. IBS, IBD), it is not unexpected that pre-existing psychiatric comorbidities contribute to a heightened GI sensitivity or reporting of GI symptoms. As SARS-CoV-2 binds to ACE-2 receptors located along the GI tract, and viral RNA is shed into feces, it is also possible that the infection can impact GI tract motility and/or gut flora leading to prolonged symptoms after the resolution of respiratory symptoms. Future longitudinal studies are anticipated to determine whether the impacts on GI function are transient or long-lasting.

S1654

Gastric Antral Vascular Ectasia in Cirrhotic Patients: A Retrospective Single-Center Study

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Introduction: Gastric antral vascular ectasia (GAVE) is a rare cause of GI bleeding. It is associated with portal hypertension, connective tissue disease, and chronic kidney disease. The treatments include medical, endoscopic, and surgical interventions. In this article, we analyzed the characteristics of GAVE patients with cirrhosis and the outcomes of treatments.
Methods: We conducted a single-center retrospective study by reviewing the patients with both diagnoses of GAVE and liver cirrhosis who had followed up in NYU Langone healthcare system between 2012 to 2022. IRB exemption was obtained.
Results: A total of 27 patients (16 females and 11 males) met our inclusion criteria (Table). The mean age was 66.3 years old. Alcoholic cirrhosis and NAFLD are the most common etiologies of cirrhosis with GAVE. 21 cases had a history of transfusion. Seventeen patients were found to have esophageal varices during the endoscopic exam. 85% of GAVE was treated with endoscopic argon plasma coagulation (APC), including 4 were treated with APC plus band ligation (BL) and one was treated with APC plus radiofrequency ablation (RFA). All GAVE with active bleeding were treated with APC. However, patients without active bleeding from GAVE were also treated with APC if there was cirrhosis complicated by esophageal varices, low hemoglobin, or sign of active bleeding. No significant difference in hemoglobin before and after APC (9.02 vs 9.36, P = 0.077) was noticed. Most patients are now actively following up with intermittent blood transfusion and APC treatment as needed. Only 4 patients expired due to advanced liver disease, not GI bleeding. No APC-related complication or mortality was noted in this study.
Conclusion: APC was the most used first-line endoscopic therapy in cirrhotic patients with GAVE. Our study revealed that it is safe but not curative. Most patients required multiple sessions with intermittent transfusion. A long-term follow-up is required to thoroughly evaluate the outcomes of different interventions.

Table 1. **The patient characteristics of GAVE in cirrhosis**

Total patients number	**27 (100%)**
Mean age	66.3 years old
Gender	
- Male	11 (41%)
- Female	16 (59%)
Etiology of cirrhosis	
- Alcoholic cirrhosis	9 (33%)
- NASH/NAFLD	10 (37%)
- HBV	1 (4%)
- HCV	1 (4%)
- PBC	1 (4%)
- schistosomiasis	1 (4%)
- unspecified	4 (15%)
Esophageal varices found during EGD	17 (63%)
Active bleeding from GAVE found during EGD	11 (41%)
Mean Hb before vs after interventions	9.02 vs 9.36 (*P*= 0.077)

Table 1. (*continued*)

Total patients number	27 (100%)
History of transfusion	
- Yes	21 (78%)
- No	6 (22%)
Treatment of GAVE	
- medicine	3 (11%)
- APC	23 (85%)
- BL	5 (19%)
- RFA	1 (4%)
Mean of APC sessions	2.67

S1655

Increased Prevalence of Achlorhydria With Age in an Asian Population: Should We Be Screening for Achlorhydria in Patients Aged 50 and over: 22 Years Experience From a Large Hospital

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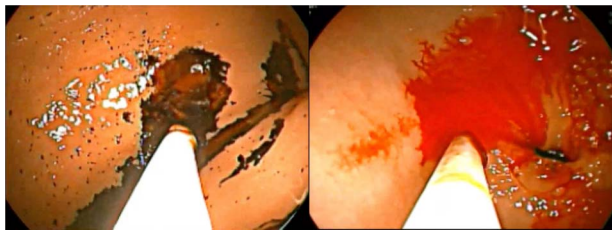
Introduction: Achlorhydria (AC) is a state in which the stomach is unable to produce hydrochloric acid. AC can be categorized as either permanent or temporary based on its causes. It can lead to several conditions including pernicious anemia (PA) which can cause irreversible neurological deficits. Diagnostic techniques of AC can be easily performed during esophagogastroduodenoscopy (EGD) by staining Congo red on the gastric mucosa.
Methods: This analysis involved a large single center retrospective study aimed at determining the prevalence of AC in Thailand among EGD patients.
Results: A total of 3,597 patients underwent EGD including Congo red staining method at the Vichaiyut Hospital from January 2010 to December 2019; 223 ones were excluded due to concurrent use of proton pump inhibitors. Results revealed that 18 from 3,374 patients (0.53%) had AC. Seven presented with permanent AC (5F, 2M) (median age = 69 years; range 58-92; Table). All 7 patients were found to have high levels of serum gastrin (mean = 2,485 pg/ml; S.D. = 689 pg/ml) and were pathologically confirmed with intestinal metaplasia. All 7 patients with permanent AC were found only when they were over 55 years old. Among 11 patients with temporary AC (5M, 6F: mean age 73.4 years; SD = 13.2 years), all had gastrointestinal *Helicobacter pylori* bacterial infection after being examined. After successful treatment for *H. pylori* and re- examination with Congo red, AC was absent among patients with temporary AC. All 11 patients with temporary AC were found only when they were over 45 years old. If counting only patients over 45 years of age, the prevalence of AC was 0.68% (18/2,614). No adverse events arising from Congo red occurred (Figure).
Conclusion: Achlorhydria (AC) is relatively rare. Permanent and temporary AC were found only when they were over 55 and 45 years old, respectively. Staining Congo red on gastric mucosa can be safely and routinely incorporated into the EGD procedure for early detection of AC. We recommended a low-cost screening test such as serum vitamin B levels for screening only in patients aged 50 and over.



[1655] **Figure 1.** Congo red changes its color from red to dark blue or black in an acidic environment.

Table 1. **Characteristics of patients with permanent AC**

Patients's number	Age (years)	Serum Vitamin B12 (pg/mL) (normal value = 187-883 pg/mL)	Anti-Intrinsic factor	Serum gastrin level (pg/mL)
1	58	2000	Positive	2000
2	86	2000	Positive	3000
3	69	405	Positive	3000
4	69	224	Negative	1300
5	80	1642	Positive	3000
6	92	265	Positive	3000
7	68	100	Negative	2100

S1656 WITHDRAWN

S1657

Peptic Ulcer Disease in Non-Alcoholic Fatty Liver Disease (NAFLD) Hospitalizations: Identifying National Trends in the United States

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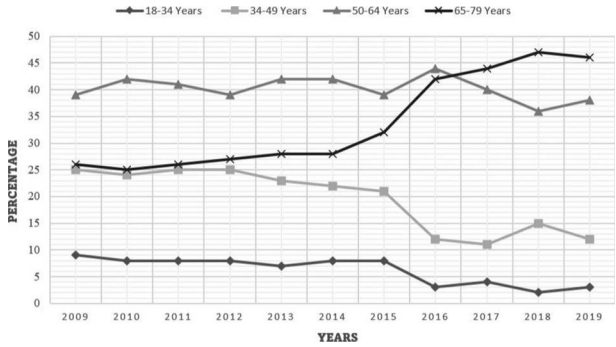
Introduction: Nonalcoholic fatty liver disease (NAFLD) is rapidly emerging as one of the most common causes of chronic liver disease worldwide and in the United States (US), primarily secondary to the obesity epidemic, rising prevalence of diabetes mellitus, and an aging population. Although peptic ulcer disease (PUD) is commonly seen in patients with liver cirrhosis, there is a lack of data on PUD in patients with NAFLD. In this study, we aimed to identify trends of PUD in NAFLD hospitalizations in the US.
Methods: This retrospective study utilized the National Inpatient Sample to identify all NAFLD hospitalizations with PUD in the US from 2009 to 2019. Trends of hospitalization characteristics and clinical outcomes were highlighted. P-values ≤0.05 were considered statistically significant.
Results: Overall, the total number of NAFLD hospitalizations with PUD increased from 3,745 in 2009 to 3,805 in 2019, after an initial peak from 2009 to 2014 and a decline until 2016 (Table). NAFLD hospitalizations with PUD were primarily at large urban teaching hospitals. The mean age of the study cohort increased from 56 years in 2009 to 63 years in 2019 (*P*-trend< 0.001). Additionally, only the 65–79 age group with NAFLD had a rising trend of PUD from 26% in 2009 to 46% in 2019 (*P*-trend< 0.001) (Figure). Racial differences were also prevalent as we noted a rising trend of White and Hispanic NAFLD hospitalizations with PUD; however, a decline was observed for Blacks and Asians (Table). Trends of *H. pylori* infection and upper endoscopy decreased from 5% in 2009 to 1% in 2019 (*P*-trend< 0.001) and 60% in 2009 to 19% in 2019 (*P*-trend< 0.001), respectively. Furthermore, we noted an increase in inpatient mortality from 2% in 2009 to 5% in 2019 (*P*-trend< 0.001). The mean length of stay increased from 5.5 days in 2009 to 7.2 days in 2019 (*P*-trend< 0.001), and the mean inpatient charge from $41,474 in 2009 to $92,354 in 2019 (*P*-trend< 0.001).
Conclusion: Literature reports a decrease in the incidence, prevalence, and hospitalization rates of PUD in the US. This study noted an overall increase in PUD in NAFLD hospitalizations. Furthermore, inpatient mortality also increased to 5% in 2019, the exact reason for which is currently unknown. However, we noted a decrease in the trends of H. Pylori infection and upper endoscopy for NAFLD hospitalizations with PUD. Additional prospective studies are needed to fully understand PUD trends in NAFLD populations.



[1657] **Figure 1.** Trends of age for peptic ulcer disease in non-alcoholic fatty liver disease (NAFLD) hospitalizations in the United States from 2009-2019.

Table 1. Trends of peptic ulcer disease in non-alcoholic fatty liver disease (NAFLD) hospitalizations in the United States from 2009–2019

Variable	YEAR											*P*-trend
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
Total Hospitalizations	3,745	4,563	5,230	5,655	5,759	6,885	5,745	2,880	3,070	3,430	3,805	
Female	55%	48%	57%	58%	56%	56%	55%	64%	60%	50%	61%	*P*=0.01
Mean Age (years)	56.0	57.1	56.7	57.1	57.1	57.4	57.5	62.4	62.8	63.7	63.0	*P*< 0.001
Age Groups (years)												*P*< 0.001
18 - 34	9%	8%	8%	8%	7%	8%	8%	3%	4%	2%	3%	
34 - 49	25%	24%	25%	25%	23%	22%	21%	12%	11%	15%	12%	
50 - 64	39%	42%	41%	39%	42%	42%	39%	44%	40%	36%	38%	
65 - 79	26%	25%	26%	27%	28%	28%	32%	42%	44%	47%	46%	
Race												*P*=0.01
White	72%	73%	70%	71%	72%	71%	70%	74%	76%	76%	75%	
Black	10%	8%	9%	10%	9%	11%	10%	6%	5%	5%	5%	
Hispanic	11%	13%	14%	13%	12%	11%	13%	14%	15%	15%	15%	
Native American	1%	< 1%	1%	1%	1%	1%	1%	2%	1%	1%	2%	
CCI ≥ 3	39%	44%	43%	47%	46%	47%	44%	86%	86%	86%	86%	*P*< 0.001
Hospital Status												*P*< 0.001
Large Hospital	67%	64%	67%	59%	63%	52%	55%	61%	59%	56%	56%	
Urban Teaching Hospital	46%	40%	44%	49%	53%	67%	66%	73%	75%	81%	80%	
Upper Endoscopy	60%	59%	62%	58%	59%	59%	62%	20%	22%	18%	19%	*P*< 0.001
H. Pylori	5%	4%	4%	3%	5%	4%	3%	3%	2%	1%	1%	*P*< 0.001
Mean Length of Stay (days)	5.5	5.7	5.7	5.5	5.5	5.5	5.9	6.1	6.8	6.5	7.2	*P*< 0.001
Mean Inpatient Charge (USD)	41,474	45,135	47,816	50,169	51,775	52,679	63,746	64,523	83,963	78,156	92,354	*P*< 0.001
Inpatient Mortality	2%	1%	2%	2%	2%	2%	1%	4%	4%	5%	5%	*P*< 0.001

S1658

Suboptimal Rates of *Helicobacter pylori* Treatment and Eradication in an Academic Medical Center: A Pilot Study

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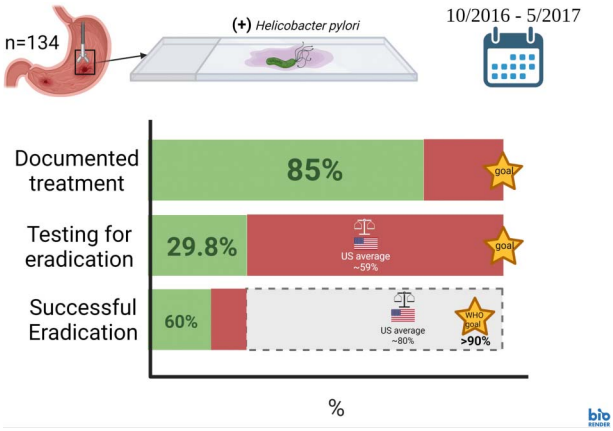
Introduction: Nearly half of humans are colonized by *Helicobacter pylori* (HP) with only 20% developing digestive symptoms during their lifetime. The World Health Organization (WHO) considers HP a carcinogen and a high-priority pathogen in terms of antimicrobial resistance. National guidelines support treatment followed by assessment of successful eradication as quality measures. The rates of HP treatment, testing for eradication, and successful eradication at our institution are unknown. A pilot study was undertaken to estimate these quality benchmarks.
Methods: A non-probabilistic sample of patients from an academic medical center in the Northeastern United States was selected. The inclusion criterion was having ≥1 pathology billing diagnostic code for HP between October 2016 and May 2017. Patient-level data including demographics, patient care notes, laboratory tests, prescription records, endoscopy, and pathology reports, were reviewed with a modified validated and structured tool.

Results: Females amounted to 58.2% (78/134) of patients, 42.5% (57/134) of patients identified as White, and 23.3% (31/134) as Hispanic. English was the preferred language for 70.1% (94/134) of patients. Gastric erythema (n=53, 39.6%) and gastritis (n=48, 35.8%) were the most common reported endoscopic findings. Eighty-five percent (114/134) of patients had documentation of receiving treatment for HP. Overall, 29.8% (40/134) had documentation of testing for eradication, of which 60% (24/40) achieved successful eradication (Figure).
Conclusion: Our study indicates that nearly one in 6 patients had no documented treatment for HP, less than a third of patients had documented eradication testing (national average ~59%), and the successful eradication rate was 60% (national average ~80%, WHO goal >90%). Our findings support the need for interventions to improve performance in these 3 quality benchmarks such as a Multidisciplinary Treatment Program for HP.



[1658] **Figure 1.** Made in BioRender.com.

S1659

Improving Dyspepsia Management in a Primary Care Clinic

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Introduction: We encounter patients in the outpatient clinic who are chronically taking PPIs which are listed as the 7th most frequently prescribed medication in the US . In 2019, together, omeprazole and pantoprazole were prescribed 81,426,858 times for 19,647,280 patients. Dyspepsia is defined by one or more of the following: postprandial fullness, early satiety or epigastric pain, or burning. Approximately 25% of patients with dyspepsia have an underlying organic disease on diagnostic evaluation (EGD vs *Helicobacter pylori* testing), while 75% have idiopathic (functional or non-ulcer) dyspepsia. We proposed that many patients who are on PPIs have active dyspepsia symptoms and are not being managed consistent with current evidenced-based guidelines.
Methods: We distributed a questionnaire to patients who were seen in a primary care clinic between December 2021 and March 2022 and who had a PPI listed as an active medication. All participants were age 18 or older. Participants were categorized as "dyspepsia positive" or "dyspepsia negative" based on symptoms at the time of questionnaire completion. Dyspepsia positive patients were further categorized as "appropriately managed" vs "inappropriately managed" based on ACG guidelines.
Results: We received 65 completed questionnaires; 27 participants had dyspeptic symptoms of whom 15 (56%) were appropriately managed and 12 (44%) were inappropriately managed. We contacted patients with inappropriately managed dyspepsia and recommended they discuss guideline-based management with their prescribing physician.
Conclusion: Guideline-based evaluation and management of dyspepsia may reduce the risk for gastric cancer by early detection and eradication of *H. pylori* infection and may lead to earlier diagnosis of Barrett's esophagus. We identified patients from a primary care clinic with persistent dyspepsia symptoms despite current PPI usage. In a number of these patients, therapy was deemed not appropriate based on ACG guidelines. As providers, we must carefully evaluate patients on chronic PPI therapy for active symptoms as well as for the overall appropriateness of their therapy relative to evidence-based guidelines for the evaluation and management of dyspepsia.

S1660

Do Amelanotic Melanomas Have a Higher Propensity to Metastasize to Stomach?

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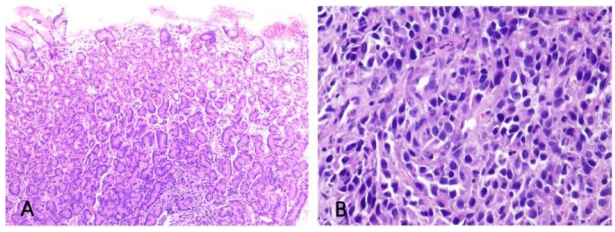
Introduction: Metastatic melanoma involving the gastrointestinal tract is rare. Previous studies reported that the most common primary malignancy leading to the stomach's metastatic tumor was melanoma (27%). Another study demonstrated that Amelanocytic melanomas(AM) comprised only 9.8% of melanomas, which typically affected the face, and extremities, and conferred a worse prognosis.
Methods: A retrospective review of patient records between 2000 and 2020 was performed. Further investigation was conducted to evaluate clinical and microscopic findings.
Results: Our investigation identified 7 patients with gastric metastatic melanoma. M:F ratio was 5:2. The mean age was 66.6 years (range 63 to 77 years). Interestingly, 86% (6/7) of the cases presented with gastric ulceration (Figure A). Remarkably, 57% of these cases were amelanocytic while only 43% were melanocytic (Figure B). The average time between initial diagnosis of melanoma and gastric metastasis was 12.8 months. Of note, 2 of 7 patients presented with metastatic melanoma to the stomach with unknown primaries. Various morphologies were identified including epithelioid (71%), spindle (14%), and mixed epithelioid and spindle (14%). Lastly, 57% of the tumors presented with a diffuse, infiltrative pattern, while 43% presented as distinct mass lesions.
Conclusion: AM presents an especially challenging scenario in the evaluation of metastatic disease to the stomach. The true prevalence of this malignancy may be greater due to misdiagnosis. Thus, there should be high suspicion for this entity when evaluating gastric specimens for metastatic disease. Further molecular studies are needed to understand the possible underlying mechanisms leading to gastric metastasis in melanoma, especially the AM given its higher propensity.



[1660] **Figure 1.** Gastric metastatic melanoma. Gastric ulceration (Figure A). Metastatic amelanocytic melanoma to the stomach (Figure B).

S1661

Diagnostic Yield of Endoscopic Screening for Identification of Signet Ring Cell in Carriers of a Pathogenic Variant in CDH1

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Introduction: Individuals with pathogenic variants (PV) in *CDH1* are at high risk of hereditary diffuse gastric cancer (HDGC). Pre-operative upper endoscopy (EGD) using the Cambridge protocol (CP) to detect signet ring cells (SRC) and annual EGD in those deferring prophylactic total gastrectomy (TG) is recommended. The recently reported yield for pre-op detection of SCR by CP (30-minute exam of the gastric mucosa with targeted biopsy of pale patches and 30 random biopsies throughout the stomach) compared to the "Bethesda" protocol (targeted biopsy and 88 random biopsies) was 15% versus 36% of patients, respectively. Our aim was to describe the diagnostic yield of EGD surveillance in our center for preoperative detection of SRC in asymptomatic *CDH1* carriers.
Methods: Single-center, retrospective cohort study. Included patients with *CDH1* PVs who underwent ≥ 1 EGD for HDGC surveillance at Cleveland Clinic between 2007-2022. Our EGD biopsy protocol evolved from CP to include targeted biopsy and 77 random biopsies of the stomach. Our primary outcome was to determine the accuracy of endoscopic biopsy to detect SRC preoperatively in patients undergoing TG.
Results: Sixty-one carriers of *CDH1* from 39 families were identified; 12 were excluded (presented with symptomatic cancer, or not in surveillance program). Forty-nine patients [68% female, mean age at 1st EGD 45 years] underwent 1 to 8 EGDs for a total of 101 EGDs (Table). One endoscopist did 83% of all exams. Mean procedural time was 29 minutes [IQR 24-35]. Twenty-4 patients (49%) underwent TG. 21/ 24 (87.5%) had SRC detected in TG specimen and all at early stage. 16/21 (76%) were diagnosed by endoscopic biopsy prior to TG. Of the 5 patients without preoperative endoscopic detection of SRC, 3 had no SRC in the TG specimen. SRC were distributed in the fundus, antrum, body and cardia equally. No recurrent disease has been found during a mean follow-up of 1.5 years. The 37 patients without SRC that did not undergo PTG are recommended to undergo EGD every 12 months and have had a mean follow-up of 2.8 years with no advanced stage or symptomatic cancer.
Conclusion: Nearly 90% of asymptomatic patients with PV in *CDH1* had SRC detected on TG and all detected at early stage. Our protocol with ≥77 biopsies had higher yield for identification of SRC higher than protocols with fewer biopsies but did not detect SRC preoperatively in 24% of patients. Novel approaches to enhance SRC detection and timing of TG are needed.

Table 1. Demographic, Endoscopic and Gastrectomy Specimen Characteristics

Patient characteristic	n=49
Age 1st EGD (mean years, range)	44.7 (13.7-73.9)
Age last EGD (mean years, range)	45.8 (13.7-73.9)
Female gender, n (%)	32 (68%)
Family history of gastric cancer, n (%)	
•F0201st degree relative	23 (47%)
•F0202nd degree relative	9 (18%)
•F020No family history	17 (37%)
Personal history of breast cancer, n (%)	
•F020Lobular	9 (18%)
•F020Ductal	2 (4%)
•F020Ductal and lobular	2 (4%)
Total number of EGDs per patient, n (%)	
•F0201	24 (49%)
•F0202	11 (22%)
•F020≥3	14 (28%)
#EGDs performed	n=101
#EGDs/endoscopist, n (%)	
•F020Endoscopist 1	83 (83%)
•F020Other endoscopists	18 (18%)
Endoscopic complications	0
EGD when SRC were detected, n	
•F0201st EGD	11 (11%)
•F0202nd EGD	3 (3%)
•F0203rd EGD	3 (3%)
•F0204th EGD	1 (1%)
Patients undergoing gastrectomy, n (%)	24/49 (49%)
SRC detected on gastrectomy, n (%)	21/24 (87%)
Pre-operative endoscopic detection of SRC, n (%)	16/21 (76%)
No pre-operative endoscopic detection of SRC, n	5
Pathologic stage, n	
•F020No SRC detected	2
•F020T1aN0M0	21

STOMACH

S3546 Presidential Poster Award

Transcatheter Arterial Radioembolization (TARE)-Induced Gastric Ulcer in an Excluded Stomach After Roux-en-Y Gastric Bypass

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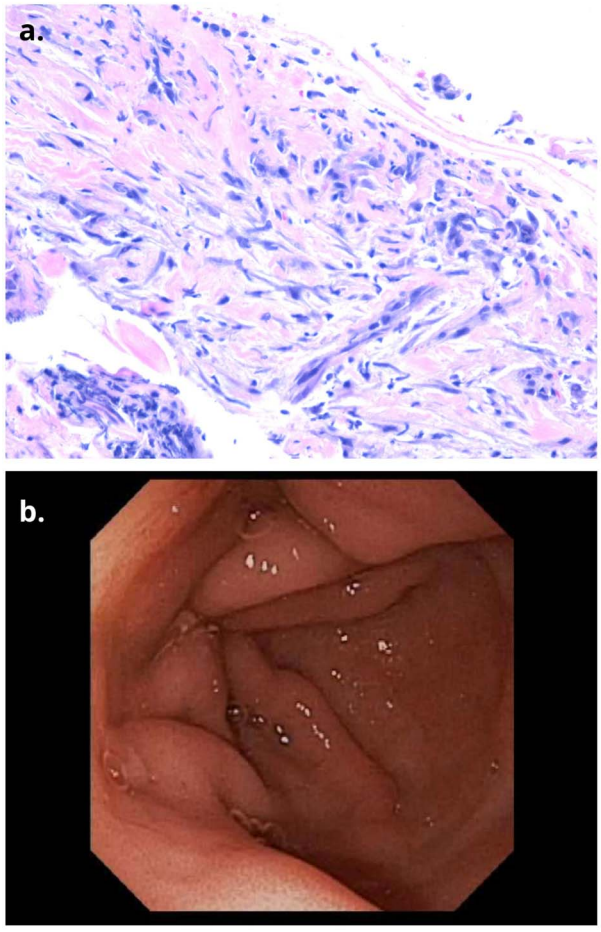
Introduction: Transcatheter arterial radioembolization (TARE) is a commonly utilized locoregional treatment for hepatocellular carcinoma (HCC) and confers lower risk of hepatic ischemia owing to the safety profile of Yttrium-90 glass microspheres used in TARE. However, peptic ulcer disease occurs in 1-5% of TARE treatments. Here we describe a unique case of a TARE-induced gastric ulcer in an excluded stomach after Roux-en-Y gastric bypass (RYGB).
Case Description/Methods: 70-year-old male with RYGB in 2012 and hepatitis C/nonalcoholic steatohepatitis cirrhosis complicated by HCC treated with TARE and liver transplant six months earlier was evaluated for melena. Esophagogastroduodenoscopy, colonoscopy, and an antegrade double balloon-assisted enteroscopy (DBE) found no obvious source. The excluded stomach could not be reached during DBE. Due to continued melena and transfusion dependence, he underwent a laparoscopic assisted gastroduodenoscopy (GD) to evaluate the excluded stomach. This revealed a 3 cm gastric ulcer in the pre-pylorus with biopsies showing radiation induced ulcer without evidence of malignancy, viral infection, or helicobacter pylori (Figure 1a). Gastrostomy tube (G-tube) access was maintained in the excluded stomach to administer twice daily liquid proton pump inhibitor (PPI) via the G-tube. Repeat GD after eight weeks of treatment showed a well-healing gastric ulcer (Figure 1b). Patient's hemoglobin also stabilized and had no further transfusion requirement.
Discussion: Gastric ulcers in the excluded stomach after RYGB are rare, especially 10 years after surgery. To our knowledge, this is the first reported incident of radiation induced ulcer in an excluded stomach. For treatment, G-tube access was maintained to the excluded stomach for administration of liquid PPI with excellent ulcer healing and resolution of melena and anemia. This treatment approach was selected based on previous data demonstrating benefit of open capsule PPI to treat marginal ulcers following RYGB[1]. Open capsule PPI administration is thought to enhance healing in these cases as this bypasses the need for capsular breakdown in the stomach for absorption, but it is unclear if a similar mechanism is true for an excluded stomach and warrants further studies to better understand its pharmacokinetics. This case highlights a unique case of a TARE-induced gastric ulcer in the RYGB excluded stomach that was successfully treated with liquid PPI.



[3546] **Figure 1.** (a) High power view of the ulcer slough shows fibrosis with prominent atypical fibroblasts consistent with radiation enteritis (H&E, 400×) (b) Repeat gastroduodenoscopy showing healing ulcer.

REFERENCE

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S3547 Presidential Poster Award

Cellulase With Prokinetics Is an Effective Dissolution Therapy for Gastric Phytobezoars

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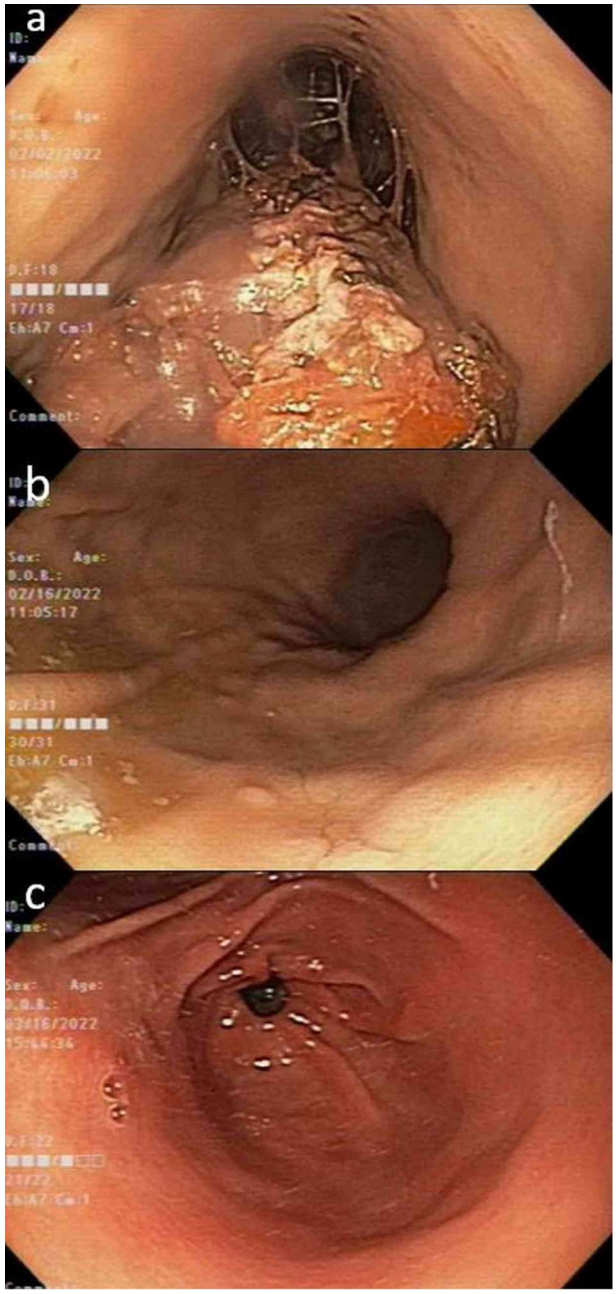
Introduction: Gastric phytobezoars are hard concretions of ingested vegetable/food matter in the stomach. They can significantly impair mucosal visualization during esophagogastroduodenoscopy (EGD). In the absence of outlet obstruction, dissolution therapy is recommended as a first step whilst evaluating for underlying causes. Different dissolution therapies for bezoar have been described. Cellulase, although first described in 1980's has not been systematically examined and whether combined therapy with prokinetics is more effective is unknown. We describe two patients with large gastric phytobezoars found on EGD and successfully treated with cellulase plus adjuvant azithromycin for 5 days.

Case Description/Methods: Case 1: A 37-year-old Caucasian woman with type 2 diabetes mellitus (DM), gastroparesis and obesity presented with a 2-year history of worsening GERD, dyspepsia, early satiety and Gastroparesis Cardinal Symptom Index (GCSI) of 24. EGD revealed a large phytobezoar, occupying 60% of stomach (Fig. 1a). She was treated with Cellulase 5 g dissolved in 200 ml of water, daily for 5 days on an empty stomach, and azithromycin 125 mg liquid bid for 3 weeks. She reported significant symptom improvement in 1 week. Repeat EGD after 2-3 weeks showed normal stomach with no bezoar (Fig. 1b), and GCSI improved to 18. **Case 2:** A 64-year-old Caucasian woman with Type 2 DM and gastroparesis presented with worsening nausea, vomiting, early satiety and GCSI of 22. Examination noted mild epigastric fullness with tenderness and succussion splash. EGD noted a large gastric bezoar occupying the 75% of stomach. She was treated with aforementioned regimen. EGD after 2 weeks was normal with no bezoar (Fig. 1c), and GCSI improved to 16 (Figure).

Discussion: Gastric bezoars are rare with an estimated incidence of 0.3% on EGD. Risk factors include gastric dysmotility, gastric outlet obstruction, anticholinergic agents/opioids or psychiatric problems. They can be asymptomatic or cause abdominal pain, nausea, vomiting or early satiety. Agents used for chemical dissolution therapy (CDT) with varying results include cellulase, carbonated drinks, papain and acetylcysteine. Both of our patients had gastroparesis with poorly controlled DM and intolerance to metoclopramide. Possible risks of CDT include possible small bowel obstruction from partially dissolved bezoars. Combination therapy with Cellulase (5G), and Azithromycin (125 mg liquid bid, prokinetic) was safe and effective therapy for gastric phytobezoars without luminal obstruction.



[3547] **Figure 1.** 1. Endoscopic images (Patient 1) showing large phytobezoar (a) and repeat EGD in 2 weeks showing normal stomach after dissolution therapy (b). Normal EGD (patient 2) after dissolution therapy (c).

S3548 Presidential Poster Award

From Zero to Gyro: A 12-Month Trial of a Lumen-Apposing SEMS on a Benign Recalcitrant Post Surgical Stricture

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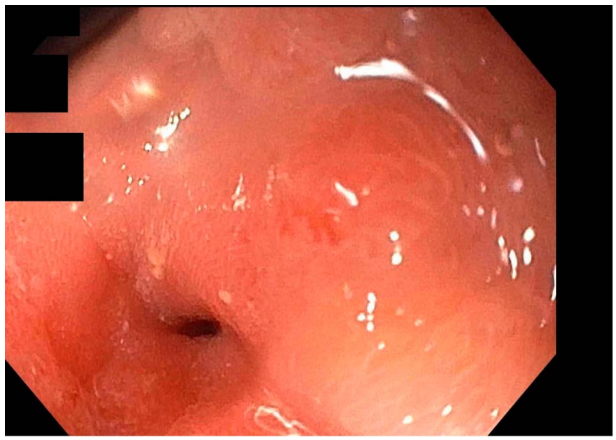
Introduction: Short, post surgical benign recalcitrant strictures can present a challenge for endoscopic therapy. We demonstrate utilization of Lumen-Apposing Self-Expandable Metallic Stents (LASEMS) to treat short, recalcitrant strictures unresponsive to dilation, steroid injections where conventional stents are not feasible.
Case Description/Methods: 49 year old Female with a history of a Roux-En-Y gastric bypass presented to the ED with hypovolemia from poor oral intake due a recalcitrant GJ anastamosis stricture unresponsive to dilations with steroid injection. Patient had undergone gastric bypass 8 years prior to her presentation. 4 years after her surgery she developed nausea, vomiting, anorexia and early satiety. Unable to keep down any solid food, she resorted to a liquid diet. She declined any further surgical therapy or follow up. She surmised that this was 'a consequence of her decision to pursue gastric bypass surgery'. She saw her PCP 8 years after her surgery with a BMI of 16; having not taken in any solids for 4 years. She was referred for an endoscopy which revealed a 'pinpoint' stricture. She underwent 7 upper endoscopies with progressive dilations/steroid injections with no success. She was referred to an advanced endoscopist after she presented to the ED with hypovolemia; now having issues with solids and liquids. A 20 mm × 10 mm LASEMS was placed through the stricture and removed after 8 weeks. She was able to tolerate solids and gain weight for 4 months until her symptoms recurred. Endoscopic examination revealed a return of the 'pinpoint' stricture. A twelve month trial of the 20 mm × 10 mm LASEMS was then performed. To prevent epithelialization of the stent, it was replaced every 2 months. Six months after the stent was removed, her GJ anastamosis was noted to have increased from 'pinpoint' to 18 mm. Three years post stent removal , she continues to tolerate solid foods and maintains a healthier BMI (Figure).
Discussion: Post surgical, benign, recalcitrant strictures can present a challenge to endoscopists once dilation methods have been exhausted. Conventional stent placement can be challenging and uncomfortable for patients who have a short stricture. LASEMS present a less invasive, safer alternative to treatment to surgical resection. They also present less of a migration risk when compared to conventional stents in small strictures. LASEMS can also be placed by general gastroenterologists with no EUS training via a therapeutic gastroscope.



[3548] **Figure 1.** Stricture prior to stent placement (s/p 7 dilations and steroid injections).

S3549 Presidential Poster Award

Gastric Adenocarcinoma of the Remnant Stomach After Roux-en-Y Diagnosed by EDGE

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Introduction: Gastric cancer is the third leading cause of cancer-related death. Although patients have a higher incidence of gastric cancer after Roux-en-Y compared to the general population, malignancy of the excluded stomach is rare. We present a case of gastric adenocarcinoma of the remnant stomach, diagnosed utilizing the EDGE procedure 20 years after Roux-en-Y surgery.
Case Description/Methods: A 67 YO obese F with PMH of Roux-en-Y and chronic ITP post splenectomy was admitted for symptomatic anemia manifesting as syncope and melena. Her hemoglobin was 7.5 g/dL. Notably she had a 5-year history of occult iron deficiency anemia where multiple EGD's, colonoscopies and two video capsule endoscopies were performed showing frank blood in the jejunum without a source of bleeding. During this admission, a CT angiogram revealed a 5 cm clot in the gastric remnant without evidence of hemorrhage. She underwent EGD/EUS which confirmed Roux-en-Y anatomy. An endoscopic ultrasound directed transGastric ERCP (EDGE) was performed to gain access to the excluded stomach. Upon successful placement of the AXIOS LAMS and its traversion with a standard endoscope, an ulcerated mass with ill-defined borders was found in the antrum of the excluded stomach. This area was biopsied and identified as poorly differentiated gastric adenocarcinoma with signet ring cells. Subsequent EUS was performed for staging utilizing previously placed access to the excluded stomach with AXIOS LAMS. The gastric adenocarcinoma was staged as T2N0.
Discussion: During a Roux-en-Y gastric bypass, the distal stomach is excluded during the formation of a truncated gastrointestinal tract, which subsequently makes it difficult to evaluate for pathology with traditional endoscopic modalities. In these circumstances, a modified endoscopic procedure, known as endoscopic ultrasound directed transGastric ERCP (EDGE) is used. It is likely that the etiology of gastric adenocarcinoma after gastric bypass is multifactorial, due to changes in physiology of the remnant stomach, chronic inflammatory states and pancreaticobiliary reflux. Our patient developed a rare gastric adenocarcinoma of the excluded stomach, 20 years after a Roux-en-Y procedure. It was diagnosed utilizing the innovative EDGE procedure after a 5-year workup for melena and iron deficiency anemia was inconclusive.

S3550 Presidential Poster Award

Gastric Syphilis: An Unusual Etiology of Melena in a Patient With AIDS

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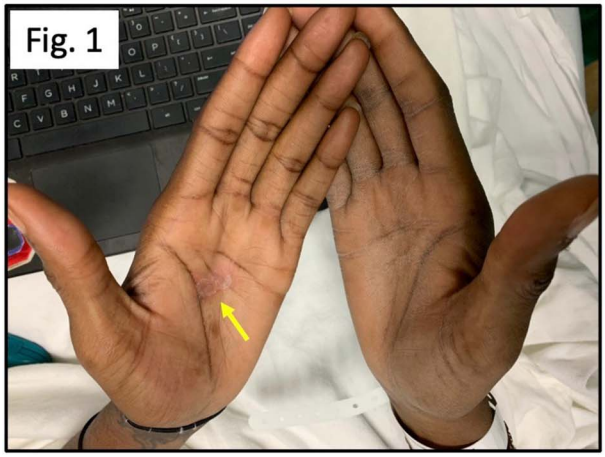
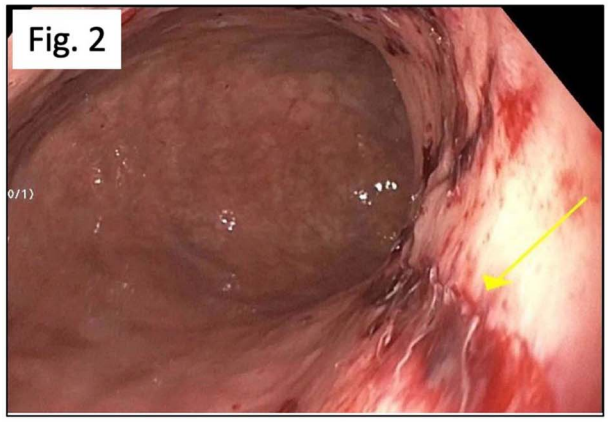
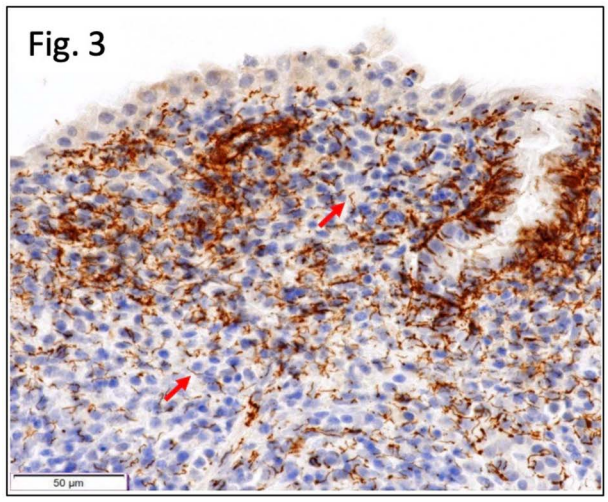
Introduction: The incidence of primary and secondary syphilis has increased across the United States by 6.8% during 2019-20 alone. Gastrointestinal manifestations of syphilis are rarely described. We present a patient with acquired immunodeficiency syndrome (AIDS) and persistent anemia secondary to gastric erosions from *Treponema pallidum* infection.
Case Description/Methods: A 23 year-old man with AIDS, nonadherence to antiretrovirals, and recent genitourinary gonorrhea/chlamydia infections presented with three months of subjective weight loss and two days of diarrhea, varying between melenic stools and bright red blood per rectum. Two weeks prior, he presented with similar symptoms, anemia of 3.6 and underwent an esophagogastroduodenoscopy (EGD) demonstrating esophageal candidiasis with normal stomach and duodenum. Colonoscopy at the time demonstrated abnormal rectal mucosa with congestion, erythema, and deep ulcerations; biopsies were negative for CMV, HSV1, HSV2, and *T. pallidum*. He was discharged on oral fluconazole. On readmission, he was afebrile and tachycardic to 115 beats per minute. Exam was notable for a discrete macular rash on palms and soles and soft, non-tender abdomen. Laboratory studies indicated normocytic anemia with Hgb 6.2. He had reactive T. pallidum antibodies, confirming syphilis. Blood and stool studies were negative for Campylobacter, Cryptosporidium, and other organisms noted to cause AIDS-related diarrhea. Repeat EGD was done, demonstrating a "cracked" appearance with insufflation of CO2 and oozing linear erosions on the lesser curvature of the stomach with gastric biopsy showing T. pallidum spirochetes with superimposed Helicobacter pylori. Colonoscopy showed circumferentially ulcerated mucosa in the distal rectum extending to the anal verge with biopsies again negative for infection including mycobacteria. He received a penicillin injection and was discharged on a 21 day course of doxycycline for late latent syphilis as well as H. pylori triple therapy (Figure).

Discussion: Gastric syphilis is rare, with patients having vague symptoms of nausea, vomiting, epigastric pain unrelieved by antacids, and diarrhea. Diagnosis can be confirmed with EGD demonstrating diffuse erythema, multiple erosive lesions, or ulcerative lesions in gastric mucosa. The case was unusual as the clinical presentation was an overt GI bleed, and the endoscopic presentation was a cracked mucosal appearance. Gastroenterologists should have an increased awareness of GI involvement with syphilis, given its resurgence.







[3550] **Figure 1.** 1: Macular rash on patient's palms. 2: EGD image of linear erosions on the lesser curvature of the stomach. 3: Arrows showing helically coiled spirochetes on Treponema pallidum immunohistochemical stain.

S3551 Presidential Poster Award

Gastric Metastasis of Merkel Cell Carcinoma: A Rare Cancer

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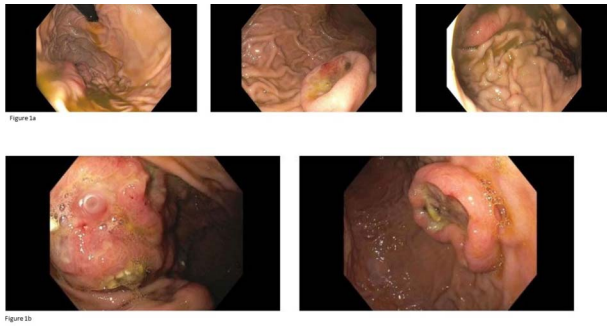
Introduction: Merkel Cell Carcinoma (MCC) is a rare aggressive cutaneous neuroendocrine carcinoma. MCC is localized in 65% of cases, 26% cases spread to lymph nodes and metastasis is seen in 8% of cases. Stomach metastasis is rare site of metastasis, seen in 0.2 to 0.7% of cases on autopsy. CK 20 is a sensitive and specific marker of MCC. We present a case of a 63-year-old man who presented with chronic anemia and was found to have gastric metastasis of his cutaneous Merkel Cell Carcinoma.

Case Description/Methods: A 63-year Caucasian man with pertinent history for hypertension, chronic anemia on iron therapy and stage IV neuroendocrine cutaneous tumor of left thigh with distant metastasis on treatment presented with melena, worsening fatigue, and shortness of breath for 2 weeks. Two months prior to this hospitalization, the patient was admitted for symptomatic anemia where patient had undergone Upper Gastrointestinal (UGI) Endoscopy. It had revealed non-bleeding gastric ulcers with pigmented material and biopsy was negative for malignancy (Figure a). On presentation his labs were significant for hemoglobin/hematocrit of 5.2/14.7% (g/dL/%). Computed Tomography Angiogram of abdomen and pelvis revealed a GI bleeding source within the proximal stomach. UGI endoscopy was performed after adequate resuscitation which revealed a large, fungating, infiltrative and ulcerated masses in the body of the stomach (Figure b). Biopsies showed malignant cells with immunohistochemical staining positive for chromogranin, synaptophysin, CK7, and CK20. It was reported that the immunomorphological features of initial biopsy of left posterior thigh were like this gastric biopsy. It was concluded that the patient's gastric mass was metastatic MCC.
Discussion: MCC is a rare extremely aggressive carcinoma. Its spread to stomach is rare but should be considered in patients with cutaneous neuroendocrine tumor who present with iron deficiency anemia/GI bleeding. In addition, gastric metastasis is exponentially aggressive. Our patient's gastric ulcer with negative biopsy grew into a fungating mass with proven MCC in two months. Thus, we would also like to highlight the importance of re-biopsy when the index of suspicion is high. Our patient's initial biopsies were negative for malignancy while subsequent biopsies showed MCC. A combination surgical excision and loco-regional radiotherapy is used for treatment of aggressive primary MCC without distant metastasis. Radiotherapy, or combination with chemotherapy can be used for unresectable MCC.



[3551] **Figure 1.** (a) Initial UGI endoscopy done 2 months before the presentation. Shown above is gastric ulcer with pigmentation in Gastric body and Fundus (b) A large, fungating, infiltrative and ulcerated mass with no bleeding at gastric body. Biopsy of this mass showed MCC.

S3552 Presidential Poster Award

Herpes Gastritis: A Rare Cause of Gastric Outlet Obstruction

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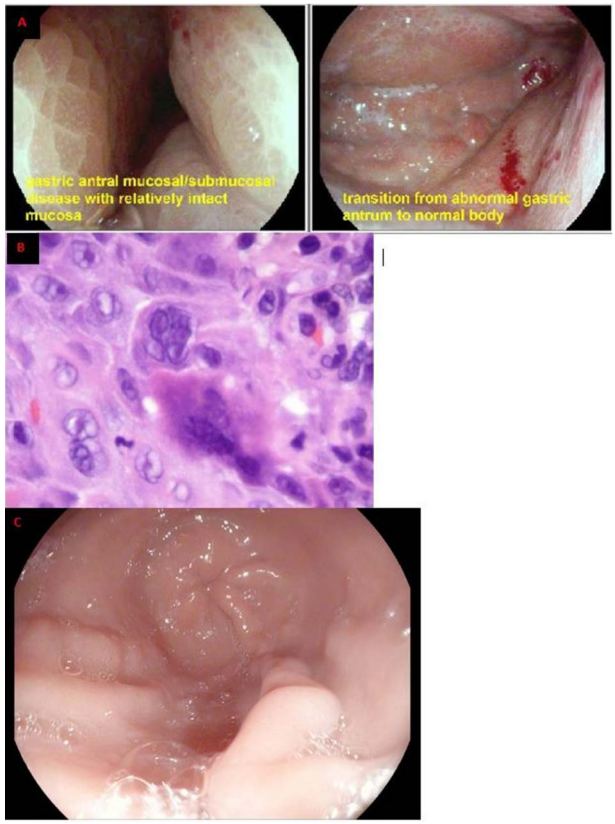
[1]The University of Texas Health Science Center at Tyler, Tyler, TX; [2]UT Health East Texas Physicians, Tyler, TX; [3]Gastroenterology Associates of Tyler, Tyler, TX.

Introduction: Gastrointestinal tract involvement from herpes simplex virus is commonly associated with esophagitis. However, herpes simplex infection of the stomach is very rare with only a handful of cases being reported in immunocompromised patients. We present a case of herpes gastritis causing gastric outlet obstruction in an otherwise healthy, immunocompetent individual.
Case Description/Methods: A 37-year-old male with a recent past medical history of COVID-19 infection, presented to the hospital with intractable nausea, vomiting, bloating, and early satiety for two days. Upon evaluation, CBC and CMP were remarkable for a WBC of 12.5 k/mm^3 and ALT and AST of 124 U/L and 129 U/L, respectively. Lipase was 373 U/L. A CT abdomen/pelvis w/contrast showed circumferential wall thickening with edematous changes in the antrum consistent with localized inflammatory response. There was suspicion for gastric lymphoma and patient was admitted for further workup. An EGD was performed which showed exudative esophagitis and antral wall edema with luminal narrowing of gastric antrum. Endoscopic ultrasound (EUS) showed a 2.5 × 3 cm antral wall lesion worrisome for linitis plastica. Esophageal biopsies showed focal cytologic changes consistent with herpes esophagitis. The FNA of the gastric antral wall showed multinucleation of the basal cell layer with classic ground glass nuclei, consistent with herpes infection. No dysplasia or malignancy was seen. Both HSV1 and HSV2 IgG were elevated. HSV IgM was normal. A HSV PCR was ordered but never resulted. Patient was started on Valacyclovir 1 g PO BID for 10 days. He underwent a follow-up EGD 3 months later which showed complete resolution of the gastric antral changes (Figure).
Discussion: Herpes gastritis is extremely rare. Literature review has revealed only 3 case reports of herpes gastritis; and all involved immunocompromised patients. To the best of our knowledge, this is the first case of herpes gastritis in an immunocompetent patient. Our patient presented with symptoms of gastric outlet obstruction which was caused by local inflammation from herpes simplex. It is unclear if having a COVID 19 infection altered patient's immunity and lead to herpes gastritis. This may need further investigation. No established guideline exists for treatment duration. Our patient received 10-day course of Valacyclovir, and his symptoms improved. Furthermore, patient had complete resolution of the herpes infection on follow-up EGD, indicating adequate treatment response.



[3552] **Figure 1.** Panel A: EGD showing circumferential antral erosive gastropathy Panel B: Histology showing multinucleated cells with classic ground glass nuclei Panel C: Post-treatment EGD showing complete resolution of gastric antral erosive gastropathy.

S3553 Presidential Poster Award

Malignant Transformation of a Gastric Duplication Cyst: A Rare Entity

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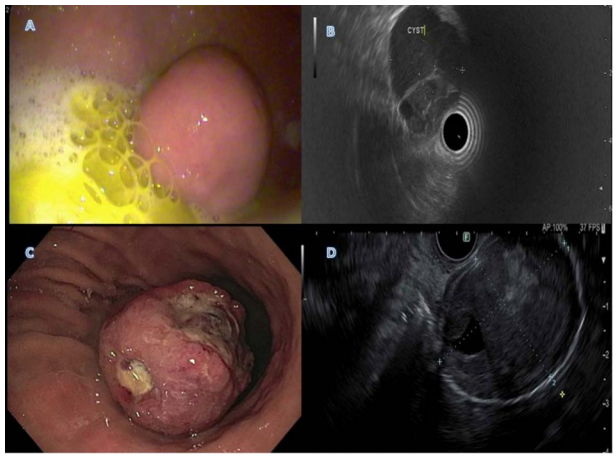
Introduction: Gastrointestinal tract duplication cysts (GTDCs) are rare congenital malformations that can occur anywhere along the alimentary tract. They occur most commonly in the ileum, esophagus, and colon. Gastric duplications cysts account for 4-9% of all intestinal duplication cysts. They are usually diagnosed at a young age due to their mass effect. Most cases in adults are incidentally discovered on endoscopy or radiological examination. Malignant transformation of duplications cysts in adults is extremely rare. We present a case of a gastric duplication cyst with malignant transformation.
Case Description/Methods: A 69-year-old woman with a history of breast cancer status post resection and chemoradiation, left-sided ulcerative colitis well-controlled on mesalamine was incidentally found to have a gastric submucosal lesion (A) on esophagogastroduodenoscopy (EGD). Gastric biopsies were negative for *Helicobacter pylori*. She subsequently underwent endoscopic ultrasound (EUS) with fine-needle aspiration (FNA) which revealed findings consistent with a gastric duplication cyst (B). FNA was negative for malignant cells. Eight years later she presented to the emergency room with melena and anemia. EGD revealed a large ulcerated subepithelial mass in the gastric body arising from the greater curvature; the area where earlier duplication cyst was found (C). EUS showed a hypoechoic round mass with isoechoic and anechoic components with well-defined borders (D). Gastric biopsies revealed poorly differentiated carcinoma and FNA was positive for malignant cells and signet ring cell carcinoma. Computed tomography of the abdomen and pelvis showed new hypodensities within the liver concerning for liver metastasis (Figure).
Discussion: This case demonstrates an unfortunate case of malignant transformation of a gastric duplication cyst. Malignant transformation of duplication cysts is extremely rare with only less than 15 cases reported in the literature. Based on prior studies and limited cases, no predictors for malignant change have been found including symptoms, size, location, tumor markers, or macroscopic findings. The mechanism for malignant transformation is poorly understood. If there is any suspicion of malignant transformation in the presence of a gastric duplication cyst, surgical resection is recommended.



[3553] **Figure 1.** (A) EGD demonstrating a gastric submucosal lesion in the body of the stomach (B) EUS illustrating 37 × 33 mm multiseptated anechoic lesion with internal debris (C) EGD findings showing a gastric mass occupying the entire lumen of distal gastric body with two overlying umbilicated ulcerations over the mass measuring 7 mm and 2 cm in size. (D) EUS demonstrating hypoechoic round mass of mixed features in the body of the stomach measuring 43 mm × 32 mm.

S3554 Presidential Poster Award

Pylorus-Directed Therapy for Gastroparesis Using EsoFLIP

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Introduction: Gastroparesis is a complex disease with limited pharmacologic treatment options. Pyloric dysfunction is increasingly recognized as playing an important role in the pathophysiology of the disease which has led to increasing interest in pylorus-directed therapy. The novel endoscopic functional lumen imaging probe (EndoFLIP) and the EsoFLIP catheter allows for dynamic measurement and directed intervention.
Case Description/Methods: A 34-year-old man with a past medical history of diabetes mellitus and gastroparesis was admitted after presenting with significant epigastric pain, nausea and vomiting. His initial glucose was 451 mg/dL. The patient was initially treated with an insulin drip, intravenous fluids, and antiemetics including alternating ondansetron, promethazine, and metoclopramide. Despite improvement in the patient's hyperglycemia, the symptoms of nausea and vomiting persisted. The patient underwent esophagogastroduodenoscopy (EGD) with therapeutic intent. The initial endoscopic exam ruled out any mucosal lesions or mechanical obstruction. The EsoFLIP catheter was placed side-by-side the endoscope and under direct visualization was advanced past the pylorus. Proper balloon placement was verified by an hourglass shape of the balloon displayed on the monitor. Measurements were obtained of the cross-sectional area of the pylorus at various balloon volumes starting at 30 ml. The balloon is inflated stepwise at 5 ml intervals and measurements were obtained. The initial pylorus diameter was measured to be 13.7 mm. Care was taken to directly visualize the mucosa during the procedure. The pylorus was dilated up to a diameter of 25 mm. Mucosal rents (tears) were seen after the balloon was deflated. The patient tolerated the procedure well without any immediate complication. His symptoms resolved and he was able to tolerate a regular diet.
Discussion: Endoscopic functional lumen imaging probe uses impedance planimetry to calculate pyloric distensibility. Therapeutic dilation using the EsoFLIP system allows real-time and dynamic visualization of the pyloric sphincter with measurements of diameter, cross-sectional area and intra-balloon pressure. This case highlights the therapeutic protentional of EsoFLIP pylorus dilation for refractory gastroparesis. Here we follow a previously described step wise protocol for using the EsoFLIP with the goal of achieving a target pylorus diameter of 25 mm. This protocol has been shown to lead to improvements in symptoms and FLIP metrics as demonstrated in our case.

S3555 Presidential Poster Award

See Something, Say Something: GPS Tracker Foreign Body Ingestion as a Unique Presentation of Human Trafficking

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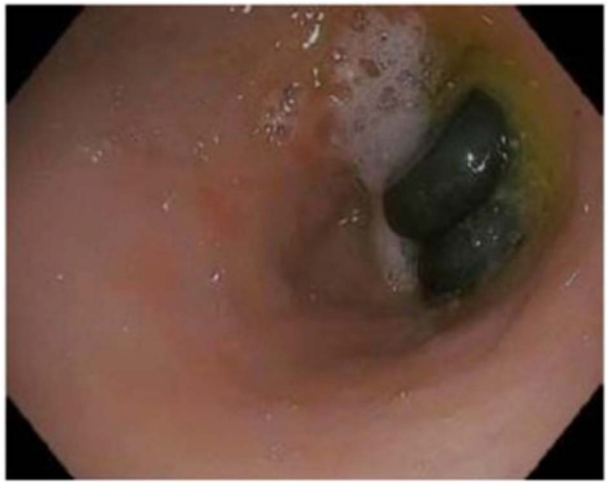
Introduction: An estimated 20 million people are victims of human trafficking around the world annually. In the United States, human trafficking is a federal crime under the Victims of Trafficking and Violence Protection Act of 2000. US studies have shown that up to 88% of human trafficking victims seek medical care. Therefore, as physicians we have a unique opportunity to recognize these acts and potentially intervene. The human gastrointestinal cavity is often used for illegal purposes, such as narco-trafficking leading to foreign body ingestion. We present a unique case of a 28-year-old female who was a sex trafficking victim and presented to the hospital after she was forced to swallow two global positioning system (GPS) trackers by her traffickers.
Case Description/Methods: A 28-year-old female with history of seizures, presented to the emergency department with 1 week of hematemesis. She reported that she was a human trafficking victim, forced to swallow two GPS trackers 8 days prior. Blood pressure was 106/72, pulse 67, temperature 97.8 °F. Physical examination was negative for abdominal tenderness or distention. Hemoglobin was 10.1 g/dL. CT scan of abdomen and pelvis showed two metallic disc shaped objects in the gastric antrum measuring 2.1 × 0.6 cm each. The gastroenterology team was consulted and performed an urgent esophagogastroduodenoscopy. At EGD, 2 "TILE" tracking GPS devices were found in the antrum, and were removed with Roth net without complication. The social work team was involved, and the retrieved objects were transferred to Homeland Security. Prior to further investigation, the patient left against medical advice, without subsequent return (Figure).
Discussion: To our knowledge, this is the first reported case of endoscopic removal of GPS trackers from a patient's stomach in the US. This case highlights use of GPS devices for malicious purposes and the clinical challenges posed for healthcare providers. Human trafficking is underrecognized in medicine due to the associated legal and social stigma, with women, children, and financially challenged populations being more likely targets. Victims may not disclose any history of abuse due to fear of retribution. Physicians should have a high level of suspicion when potentially encountering such patients as one interaction and physician intervention may be potentially life-altering or lifesaving for victims of human trafficking.



[3555] **Figure 1.** Two GPS trackers in the gastric antrum.

S3556 Presidential Poster Award

Unique Approach to Refractory Nausea With Ketamine Infusion

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Introduction: Functional refractory nausea is defined as nausea that persists for more than 4 weeks. Nausea can result from complex interactions between afferent and efferent pathways of the central nervous system and gastrointestinal tract. Management of refractory nausea, especially if it is associated with migraines, can be difficult to treat as conventional therapies such antiemetic and prokinetics are ineffective. We present a case of functional refractory nausea that was incidentally treated successfully with ketamine infusion.
Case Description/Methods: A 37-year-old male with a history of pancreatic insufficiency, migraines, and chronic refractory nausea since 2016 with recurrent ED visits presented this time with headache and nausea for 7 days. He had tried multiple prophylactic medications at home including triptans and muscle relaxers without relief. For his nausea he tried ondansetron but it only provided temporary relief for 15-20 minutes. In the ED, the patient received prochlorperazine, diphenhydramine, and ketorolac for his headache and nausea. He continued to complain of his symptoms and was subsequentially given 20.4 milligram of ketamine infusion over 1 hour with resolution of his headache as expected. Surprisingly, the patient's nausea concomitantly resolved with the ketamine infusion. After discharge, he was followed in GI clinic after one week and 3 months where he stated he was completely free of nausea without the use of his prophylactic medications.
Discussion: Functional refractory nausea has been associated with decreased quality of life for patients. This presents as an economic burden in terms of health care costs and resources with recurrent admissions and ED visits. Conventional treatments for nausea include the use of antiemetics and prokinetics to name a few. The use of ketamine infusion has only been reported in one other case study for abortive and prophylactic therapy for nausea. Ketamine is a noncompetitive antagonist to N-methyl-d-aspartate receptor. The mechanism by which it helps with refractory nausea is still unclear but it is believed to be related to reduction of neural transmissions by ketamine. Ketamine is a generic medication that is cost effective. Side effects of ketamine are dose dependent and include cystitis and liver toxicity, which is unlikely with the doses given for nausea treatment. This case represents incidental resolution of nausea with ketamine administration and more studies are required for its role in abortive and prophylactic therapy.

S3557 Presidential Poster Award

Angiotensin Receptor Blockers-Associated Lymphocytic Gastritis: A Case Series and Review of the Literature

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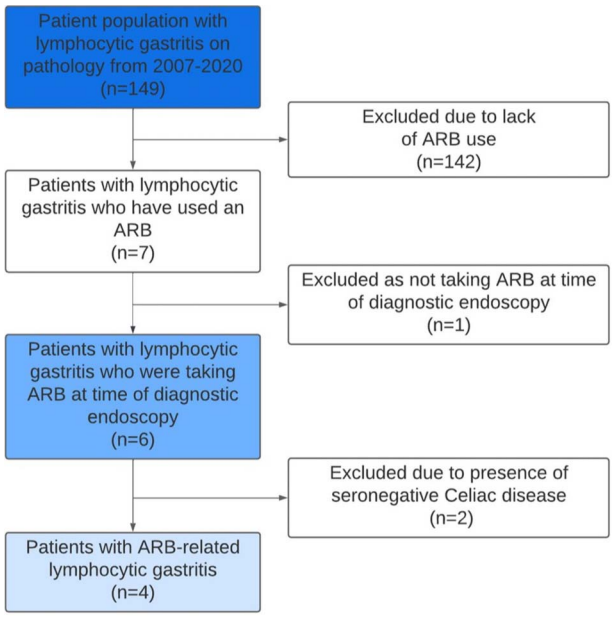
Introduction: Lymphocytic gastritis (LG) has traditionally been associated with celiac disease (CeD), *H. pylori*, varioliform gastritis, common variable immunodeficiency, Crohn's disease, and human immunodeficiency virus, and less frequently with gastric lymphoma, esophageal carcinoma, gluten ingestion, and inflammatory polyps. However, there has been evidence associating chronic angiotensin receptor blocker (ARB) use (including olmesartan and valsartan) with about ten cases of LG. Patients with ARB- associated LG presented with chronic epigastric pain, nausea, early satiety, and weight loss, with pathology showing gastric intraepithelial lymphocytosis (at times with associated duodenal lymphocytosis). Patients experienced resolution of symptoms and LG after cessation of the ARB. Our case series aimed to further expand upon what is known about the prevalence and presentation of ARB-associated LG.
Case Description/Methods: The case series was performed in a large academic health system where 149 adult patients were found to have LG on endoscopic pathology from 2007-2020. We performed a retrospective chart review on these patients and found that 6/149 (4.0%) patients had been on an ARB (valsartan, olmesartan, or losartan). Of those, 2/6 had seronegative CeD. The remaining 4 patients (2.7%) did not have any of the abovementioned LG-associated comorbidities. These four patients were diagnosed with ARB-associated LG (Figure). The mean age of these patients was 70.8 years, 75% were Asian, and 75% were female (Table). They presented with symptoms including post-prandial abdominal pain, bloating, nausea, vomiting, diarrhea, anorexia, and weight loss. Their gastroduodenal biopsies were negative for CeD, Crohn's disease, inflammatory polyps, malignancy, and *H. pylori*. Interestingly, one patient had LG with associated duodenal lymphocytosis, while another had the more commonly described ARB-induced sprue-like enteropathy.
Discussion: Based on the findings of this literature review and case series, following exclusion of the common causes of LG, physicians should consider ARB-associated LG, especially in elderly females from Asian descent. Increased awareness of this rare disease process could significantly improve the health outcomes of affected individuals.



[3557] **Figure 1.** Determination of the patient cohort with lymphocytic gastritis (LG) in the setting of angiotensin receptor blocker (ARB) use, with no other risk factors for LG, n = 4.

Table 1. Demographic, clinical, and histologic characteristics of the patients with lymphocytic gastritis (LG) in the setting of angiotensin receptor blocker (ARB) use and no other associated risk factors for LG, n= 4

Patient	Age (Years)	Gender	Race	Presenting Symptoms	Gastric Histology	Small Intestine Histology
Case 1	85	Female	Asian	Post-prandial abdominal pain and nausea, weight loss	LG with mild inflammation and focal intestinal metaplasia in antrum; LG with moderate inflammation in angularis; LG with moderate inflammation and multifocal intestinal metaplasia in body	None
Case 2	70	Female	White	Chronic nausea, vomiting and diarrhea, early satiety, significant weight loss	LG in antrum	Severe active duodenitis with complete villous atrophy; mild active inflammation and significant crypt dropout in jejunum
Case 3	71	Female	Asian	Unknown	LG in body and fundus; chronic antral and oxyntic gastritis	Increased intraepithelial lymphocytosis in the duodenal bulb
Case 4	57	Male	Asian	Chronic post-prandial abdominal pain and bloating	LG of antrum	Unremarkable

S3558

A Tale of Two Sisters: Two Pediatric Cases Within a Familial Cluster of Hereditary Diffuse Gastric Carcinoma

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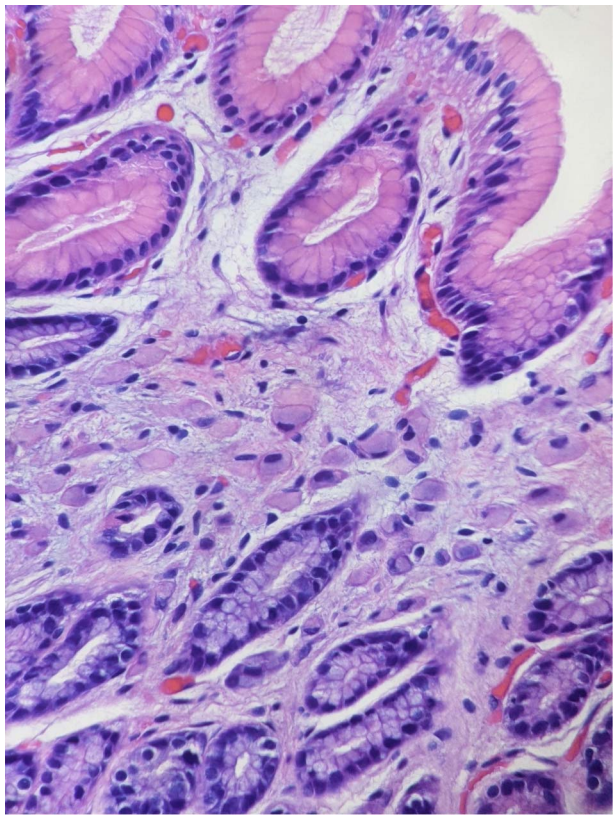
Introduction: We report a case of HDGC in two sisters, (10 and 15 years old) and their father (41 years old).
Case Description/Methods: Our patient is a 15-year-old Caucasian female who initially presented to our clinic with a 4-month history of right lower quadrant tenderness and generalized abdominal pain, which she characterized as "stabbing pain." Review of systems was significant for intermittent diarrhea and constipation. Family history was significant for a paternal great-aunt who reportedly died from gastric cancer at age 28. Abdominal ultrasound showed no significant abdominal pathology and no appreciable stomach wall thickening. EGD revealed diffuse mild inflammation of the stomach with normal appearing rugae without ulceration or masses and normal proximal duodenum. Biopsy results from the antrum revealed poorly differentiated signet ring cell carcinoma. The patient underwent a second EGD and imaging to confirm and stage the cancer. The patient subsequently underwent a laparoscopic roux-en-Y esophagojejunostomy, jejunojejunostomy with exploratory laparoscopy. Based upon the unusual occurrence of SRCC in a young female, the patient and her family underwent genetic testing. The patient was found to be positive for a CDH1/E-cadherin mutation. It was found that the patient's father and her 10-year-old sister also carried this mutation. The 10-year-old sister and the father underwent screening EGD with greater than 40 biopsies taken throughout the stomach, esophagus, and duodenum in representative areas. Surprisingly, both patients were found also to have gastric SRCC. The father has since undergone chemotherapy, radiation, and a laparoscopic roux-en-Y esophagojejunostomy, jejunojejunostomy. The family is opting for conservative management at this time for the 10-year-old patient with plans to undergo the same surgery when she is older (Figure).
Discussion: Gastric carcinoma in the pediatric population is exceedingly rare. HDGC should be considered when a patient presents with gastrointestinal symptoms and has a positive family history of gastric cancer among 1st and 2nd degree relatives, particularly if a relative was diagnosed before the age of 50. For carriers of the CDH1 mutation, prophylactic total gastrectomy is recommended with intraoperative confirmation of squamous epithelium in the esophagus at the proximal margin and duodenal mucosa at the distal margin. If gastrectomy is contraindicated, yearly endoscopic surveillance with random biopsies is recommended.



[3558] **Figure 1.** Biopsy from gastric antrum demonstrating poorly differentiated signet ring cell carcinoma present in the lamina propria.

S3559

Acute Gastric Ischemia Caused by Median Arcuate Ligament Compression Syndrome

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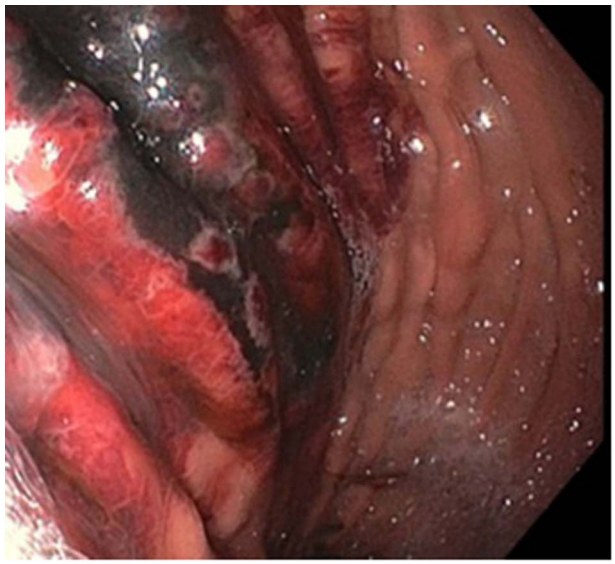
Introduction: Gastric ischemia (GI) results from diffuse or localized vascular insufficiency and carries a poor prognosis. Although infrequently reported in the medical literature, it may be under-recognized clinically and histopathologically. We report a case of acute GI in a healthy 28-year-old woman due to underlying median arcuate ligament compression and precipitated by orthostatic hypotension that improved with supportive care.
Case Description/Methods: A 28-year-old woman with no past medical or substance use history presented to a community medical center with one day of severe, acute epigastric pain with associated nausea, emesis, and diarrhea. She had been experiencing episodes of orthostatic hypotension for the preceding several weeks. Vital signs and labs were normal. A nasogastric tube on suction revealed coffee-ground material. Abdominal CT showed mesenteric and portal venous gas, which prompted urgent transfer to a tertiary medical center. Upon arrival, an IV proton pump inhibitor was initiated, followed by esophagogastroduodenoscopy (EGD). A non-bleeding ulcer measuring 20 mm × 30 mm was found in the gastric fundus, and biopsies were taken. A subsequent CT angiogram showed a partial-thickness defect at the gastric fundus with no extraluminal gas to suggest perforation, median arcuate ligament compression of the celiac artery, and otherwise no vascular abnormalities. Pathology returned as oxyntic type gastric mucosa with acute hemorrhagic gastritis, consistent with acute ischemia. Subsequent management included nasogastric decompression, serial abdominal exams, and antibiotic therapy. Her pain gradually resolved with supportive care, and she was discharged four days later. A repeat EGD at 10 weeks showed grossly normal-appearing gastric mucosa, with histology of the gastric fundus showing mild, chronic gastritis (Figure).
Discussion: GI results from diffuse or localized vascular insufficiency caused by etiologies including arterial atherosclerosis, systemic hypotension, vasculitis, and disseminated thromboembolism. GI is infrequently reported in the medical literature, under-recognized clinically and histopathologically, and typically carries a poor prognosis. GI is a rare presentation of median arcuate ligament compression syndrome. Our case of GI is unique in that it occurred due to both localized and diffuse vascular insufficiency, with the combination of her underlying vascular structural abnormality and transient systemic hypoperfusion.



[3559] **Figure 1.** Gross appearance of gastric ulcer.

S3560

Who Knows When It All Began? A Case of Autoimmune Gastritis

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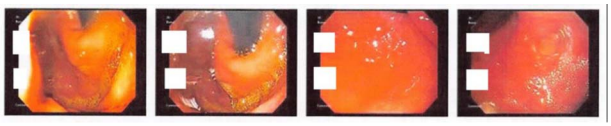
Introduction: Gastritis is a common entity that manifests as erythema of the gastric mucosa seen on EGD. The most common cause of Gastritis is infection, specifically H pylori. Atrophic gastritis is suggested endoscopically by loss of rugal folds and appearance of the submucosal vessels. Autoimmune Metaplastic Atrophic Gastritis (AMAG) is a subtype and is suggested pathologically by full thickness chronic inflammation, oxyntic gland destruction, prominent eosinophils, metaplasia, or parietal cell pseudohypertrophy. Endoscopic surveillance remains controversial. Management strategies include eradication of H pylori infection. We present a case of AMAG assoc with Lupus.
Case Description/Methods: A 45-year-old Caucasian female with history of Lupus presented with persistent, dull, aching epigastric pain aggravated by solid food intake and anemia. She had no previous history of H pylori, no previous use of antacids, NSAIDs, or digestive enzymes. When she was younger, she had iron deficiency anemia thought to be solely nutritional or related to heavy menses. Her Mother had Hashimoto's thyoiditis. Laboratory work up showed mild microcytic anemia Ferritin 253 ng/mL, Iron 143 ug/dL while on Iron supplementation. EGD showed loss of rugal folds with edematous change in fundus and body. Biopsy showed chronic gastritis with intestinal metaplasia. Repeat EGD in 1 year showed loss of rugal folds and pallor to the mucosa. Biospies were done according to mapping protocol for intestinal metaplasia of greater and lesser curvature of antrum, incisura and body showed atrophic/autoimmune gastritis. Gastrin level was 1419 pg/mL, Antiparietal cell Antibody 108.1 Units (>24 U being positive), and Intrinsic factor Ab was low 1.0 AU/mL (Cut off is 1.1 AU/mL). She was managed with Iron supplementation, assessment for other vitamin deficiencies (B12 and folate were normal), and with yearly surveillance EGDs with mapping due to presence of intestinal metaplasia (Figure).
Discussion: The endoscopic findings in Atrophic Gastritis can be very subtle. It is important that endoscopists are aware of these findings in order to better identify this illness. Additionally regimented biopsies per protocol ensure that this diagnosis is not missed. Beyond eradication of *H. pylori* further surveillance measures remain controversial. These should be considered on a case by case basis taking family history, region, smoking history, age, comorbidities, obesity, and alcohol consumption into consideration. More research is required to make universal screening guidelines.



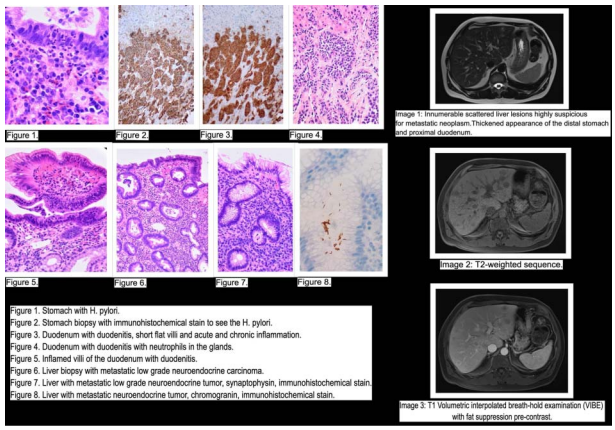
[3560] **Figure 1.** Stomach showing atrophic folds.

S3561

Metastatic NET of Unknown Primary Associated with *Helicobacter pylori* and Chronic Gastritis

Jasparit Minhas, MD[1], Vijay Gayam, MD[1], Praneeth Bandaru, MD[1], Srilaxmi Gujjula, MD[1], Suut Gokturk, MD[1], Vikash Kumar, MD[1], Heidi Budke, MD[2], Andrew Popp, MD[2], Denzil Etienne, MD[1], Madhavi Reddy, MD[1], Vinaya Gaduputi, MD, FACG[2].
[1]The Brooklyn Hospital Center, Brooklyn, NY; [2]Blanchard Valley Health System, Findlay, OH.

Introduction: Neuroendocrine tumors (NETs) are slow growing epithelial neoplasms which cause hormonal syndromes. It originates in lung or the gastrointestinal (GI) tract. NETs are discovered incidentally on imaging as metastasis and a tissue biopsy is needed to diagnose the primary tumor. Hypergastrinemia plays a critical role in development of gastric carcinoids which can be associated with chronic atrophic gastritis or *Helicobacter Pylori* (*H. Pylori*) infection. We present to you a case of metastatic NET of unknown primary location associated with *H. pylori* gastritis.
Case Description/Methods: A 50-year-old healthy male presented with epigastric pain, nausea and vomiting for one week duration. Computed Tomography (CT) of the abdomen and pelvis revealed hepatic osseous lesions suggestive of metastasis. Magnetic resonance imaging/Magnetic resonance cholangiopancreatography (MRI/MRCP) revealed scattered liver lesions and lesions in the osseous structures suspicious for metastasis with a thickening of stomach and duodenum (Figure). Esophagogastroduodenoscopy (EGD) showed multiple clean-based non-bleeding ulcers in the duodenal bulb with indurated, erythematous and friable mucosa. Colonoscopy was negative for any gross mass or obstructive lesions. Biopsies taken during the EGD were negative for malignancy but positive for H. pylori gastritis. Liver biopsy revealed metastatic low grade neuroendocrine carcinoma. Patient was successfully treated for H. pylori gastritis. He was referred to oncology for metastatic well-differentiated NET of unknown origin.
Discussion: Gastric NETs are derived from enterochromaffin-like cells (ECL) of its mucosa. Gastric G cells secrete gastrin that binds to cholecystokinin-2 receptors located on ECL cells which releases histamine stimulating parietal cells to produce hydrochloric acid. A negative feedback regulates this process in which somatostatin inhibits G cells to stop gastrin secretion. In autoimmune atrophic gastritis there is achlorhydria resulting in G cell hyperplasia and hypergastrinemia without negative feedback. This causes ECL cell dysplasia and NETs. H. pylori causes atrophic gastritis which progresses to NETs. Patients may exhibit symptoms based on the primary tumor invasion, metastases or systemic hormonal secretion. In our patient, based on the imaging there were signs of metastases but the NET site of origin remained unknown.



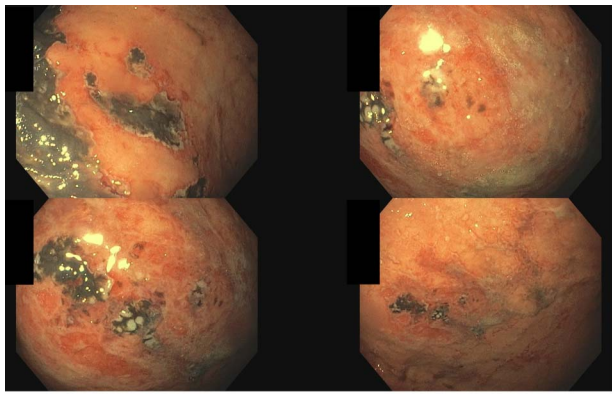
[3561] **Figure 1.** Biopsy and Imaging.

S3562

The Aerated Stomach

Baha Aldeen Bani Fawwaz, MBBS[1], Nihal Ijaz Khan, MBBS[2], Aimen Farooq, MD[1], Gurdeep Singh, DO[1], Abu Hurairah, MD[1].
[1]AdventHealth Orlando, Orlando, FL; [2]Allama Iqbal Medical College, Sarnia, ON, Canada.

Introduction: The presence of air inside the gastric wall, termed gastric pneumatosis, is a rare but often worrisome finding on imaging. Four mechanisms have been proposed for its pathogenesis, sometimes thought to be acting concomitantly; these include ischemic insult, damage to the mucosal barrier, infiltration by gas-producing bacteria and extension of dissecting mediastinal air secondary to other pathologies. Here we describe a case of acute onset abdominal pain found to have gastric pneumatosis with mesenteric and portal vein gas.
Case Description/Methods: A 76-year-old male with a medical history of coronary artery disease and DM presented with complaint of new-onset generalized abdominal pain associated with nausea and non-bloody vomiting for 2 days. On admission, he was afebrile with a soft, diffusely tender abdomen. CT scan of the abdomen revealed air in the gastric wall along with air in the portal and mesenteric veins. The patient underwent a subsequent CT angiography which revealed some gastric pneumatosis, resolution of the portal and mesenteric vein gas and no vessel occlusions. An initial EGD was remarkable for severe inflammation in the stomach, erythema, friability and deep ulcerations with areas of necrosis. Biopsies were obtained with results revealing acute necrotizing erosive gastritis. The patient was kept NPO with NG tube placed for drainage. Repeat EGD 4 days later showed significant improvement in gastric features. The patient continued to improve clinically with supportive care. He was discharged with a plan for follow up in 2 weeks and an EGD in 6 weeks (Figure, Table).
Discussion: Gastric emphysema and emphysematous gastritis are parts of a spectrum of findings; although both are rare conditions, the former is a relatively benign finding resulting from mucosal disruption with air tracking, whereas the latter is a consequence of infection with gas-producing bacteria and is considered life-threatening. Risk factors for emphysematous gastritis include alcohol use, gastric erosions/ulcers and immune suppression states such as DM. Obstruction to the gastric outlet leads to increased intragastric pressure that can also contribute to gastric pneumatosis; this seemed to be the case in our patient, given the absence of any pulmonary findings or vessel abnormalities. The approach to and the clinical outcomes of gastric pneumatosis depend on the clinical status and the type of gastric pneumatosis. In hemodynamically stable patients, conservative approach is employed, whereas in unstable patients,surgery is usually recommended.



[3562] **Figure 1.** EGD showing severe gastritis.

Table 1. Laboratory values on presentation

Labs	Patient's results	Normal range
White blood cells	13.2 10*3/uL	4.4 - 10.5 (10*3/uL)
Hemoglobin level	9.6 g/dL	12.6 - 16.7 (g/dL)
Platelets count	118 10*3/uL	139 - 361 (10*3/uL)
Creatinine level	3.4 mg/dL	0.6 - 1.2 (mg/dL) Baseline for the patient is 1.7 mg/dL

S3563

Immunosuppression and the Course of Gastric Cancer: A Role for Closer Surveillance

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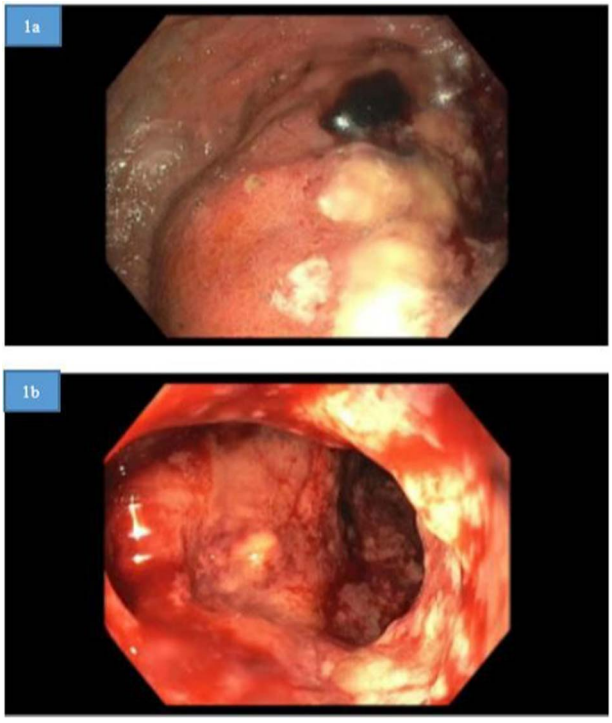
Introduction: Gastric cancer usually has a grim prognosis given that it is often diagnosed at advanced stages. Predisposed patients with gastric intestinal metaplasia have an increased risk of progression to gastric cancer by 3 fold. For organ transplant recipients, there is a 4 time increased risk of cancer, with higher levels of immunosuppression being linked to a more aggressive course. Literature is sparse when it comes to surveillance of gastric cancer in transplant patients, regardless of presence of intestinal metaplasia. We propose a case that reveals how aggressively gastric cancer could progress when a predisposed patient is also immunosuppressed.
Case Description/Methods: A 63 year old male with intestinal metaplasia and an orthotopic liver transplant 5 years prior for cirrhosis secondary to autoimmune hepatitis on immunosuppressants, presented to clinic with weight loss and nausea. The remaining review of systems was negative. He had been diagnosed with incomplete intestinal metaplasia of the antrum 2 years ago. His vitals were stable and abdominal exam was benign. Laboratory tests were significant for microcytic anemia. Esophagogastroduodenoscopy revealed a fungating mass in the cardia and body, of which biopsies showed metastatic signet ring adenocarcinoma (Figure a, b). The patient had multiple re-hospitalizations for malignant ascites and failure to thrive. The patient passed away within two months of diagnosis (Figure).
Discussion: Our patient had numerous risk factors that predisposed him to developing gastric cancer, including incomplete, noncardia metaplasia, and immunosuppression. The chronicity of immunosuppression is associated with worse 5-year survival rates, suggesting how the course of the cancer is likely to be more rapidly progressive with the addition of immunosuppression. Incidental diagnoses of gastric cancer, even in immunosuppressed transplant recipients, resulted in an earlier stage malignancy with better prognosis. Further research should be conducted to address differences among specific organ transplants, immunosuppression regimens and their associated gastric cancer course. While intestinal metaplasia and immunosuppression are independent risk factors for developing gastric cancer, our case suggests how immunosuppression contributes to the aggressive course of gastric cancer and calls for closer surveillance in this population.



[3563] **Figure 1.** 17 cm fungating, circumferential mass of (a) gastric cardia and (b) gastric body.

S3564

Use of EUS to Characterize a Rare Gastric Tumor with EWSR1-CREM Fusion

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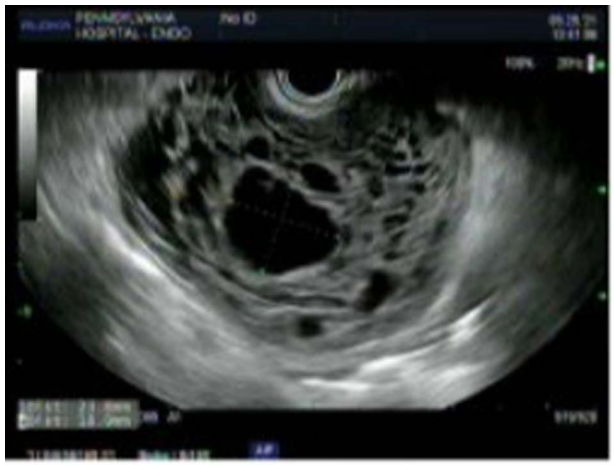
Introduction: The discussion of abdominal epithelioid neoplasms with *EWSR1/FUS-CREB* fusion has emerged in the literature. Though precise classification is unclear, these tumors have features of mesothelioma and angiomatoid fibrous histiocytoma (AFH). We describe the case of a male with persistent abdominal pain found to have a gastric lesion characterized on EUS that required surgical resection. Histology and molecular/cytogenetic studies revealed an *EWSR1-CREM* fusion making this one of only two reported gastric tumors of this kind.
Case Description/Methods: A 47-year-old male with medical history of asthma, GERD, IBS, and anxiety presented with six months of epigastric discomfort worsened by eating. On exam, he had a soft non-distended abdomen with diffuse left-sided tenderness. Labs were unremarkable. CT Abdomen showed a mass extending from the lateral wall of the stomach fundus. EUS characterized it as a solid, heterogeneous, and multicystic lesion that appeared to originate from the muscularis propria. It measured 7.6 × 5.3 cm with well-defined borders, subjected to transgastric FNA/FNB (Figure). EUS cytology showed tumor cells positive for SMA, negative for C-KIT, DOG1. Biopsy showed sheets of epithelioid cells with vesicular nuclei and clear to eosinophilic cytoplasm without necrosis. Patient underwent partial gastrectomy. Pathology revealed an epithelioid tumor involving the gastric wall and serosa. It displayed mesothelial and AFH features by immunohistochemistry and morphology, respectively. FISH showed an EWSR1 translocation and RNA fusion panel confirmed an EWSR1-CREM fusion. Since surgical resection, the patient's symptoms have improved to date. He is being followed by a multidisciplinary team without adjuvant therapy as use of radiation or chemotherapy in this tumor entity has not been defined. CT scans are planned for monitoring since there is no data on risk of recurrence.
Discussion: A recently described group of tumors referred to by one paper as 'malignant epithelioid neoplasms with a predilection for mesothelial-lined cavities' harbor a fusion of *EWSR1/FUS* and *CREM/CREB*. While the majority of such newly reported tumors have occurred intra-abdominally, our case appears to be only the second found in the stomach. Given the growing number of such discovered neoplasms, this tumor etiology should be included in the differential for intra-abdominal masses. EUS plays an important role in distinguishing this malignancy from other intramural tumors.



[3564] **Figure 1.** Intramural Lesion of Gastric Fundus on EUS measuring 7.6 × 5.3 cm with the largest cyst measuring 2.4 × 1.9 cm.

S3565

Atypical Presentation of Metastatic Breast Cancer

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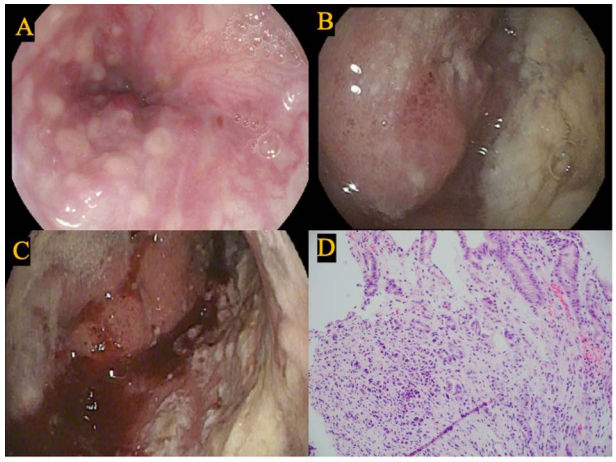
Introduction: Gastrointestinal (GI) sites of metastatic breast cancer (BC) are rare, compared to more frequent sites of bone, lung and brain. Incidence of stomach metastasis from primary tumors is < 1-2%, and according to literature as low as 0.3% from primary BC. The hormone receptor profile of metastatic sites is discordant in up to 15% of cases with triple negative metastatic sites from primary hormone receptor positive tumors. We present a case of metastatic BC to the stomach with tumor discordance.
Case Description/Methods: A 49-year-old African American female was admitted after undergoing an esophagogastroduodenoscopy (EGD) for complaints of progressive dysphagia, 50 lb. weight loss, and reflux for 6-months. 10-years ago, patient was diagnosed with Stage II estrogen receptor (ER) and progesterone receptor (PR) positive, human epidermal growth factor receptor 2 (Her-2/neu) negative, invasive ductal carcinoma with lobular features. She underwent right breast lumpectomy and was treated with tamoxifen successfully. 4-years ago, inflammatory breast changes and flank pain revealed cancer recurrence with osseous metastasis. She was treated with several hormonal chemotherapies and radiation, and her disease was stable on a positron emission tomography scan 6-months ago. Bone marrow biopsy 1-month ago revealed ER/PR+ disease with PIK3CA gene mutation, with a treatment regimen of alpelisib and fulvestrant. EGD revealed nodular, erythematous, friable mucosa at the distal esophagus, causing inability to transverse EGD scope further (A). EGD scope was changed to ultraslim endoscope and advanced to show gastric mucosa that was nodular, friable, with ulcerations that bled upon contact with endoscope (B). Immunohistochemistry stain (IHC) of gastric biopsies revealed ER/PR/Her-2/neu negative (triple negative), cytokeratin 7 (CK7) and GATA binding protein 3 (GATA3) positive, metastatic breast carcinoma (C,D). Surgery was consulted for jejunostomy tube placement to provide nutrition and confirmed severe malignancy encasing the entire stomach.
Discussion: Triple negative BC can rarely metastasize to the stomach, often mimicking primary gastric malignancy on initial presentation. Clinicians should have a higher index of suspicion for metastases in the setting of previous diagnosis of BC, to not delay potential therapies. Timely EGD biopsies, with useful BC specific markers on IHC staining (CK7 and GATA3), assisted in a rare diagnosis of a metastatic discordant triple negative BC in the stomach.



[3565] **Figure 1.** (A) EGD view of distal esophagus. (B) Ultrathin endoscope view of abnormal stomach mucosa. (C) Ultrathin endoscope view of abnormal stomach mucosa. (D) Rare, poorly differentiated malignant cells - consistent with breast primary - that on IHC stain are positive for CK7 and GATA3. Tumor cells are negative for ER, PR, CDX2, CK20.

S3566

Birthing a Baby or Surfacing a Hidden Tumor?

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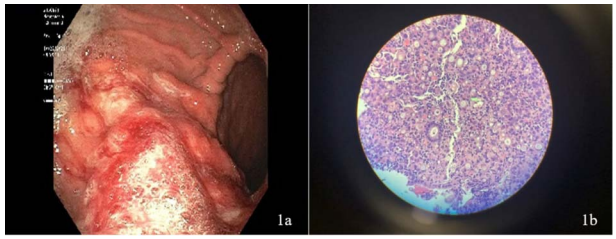
Introduction: Malignancy is a rare finding during pregnancy and if present, often carries poor prognosis. We present to you a case of Krukenberg tumor- a metastatic malignancy of the ovary- in a 29 year old female.
Case Description/Methods: A 29-year-old female with no past medical history, presented to the hospital with preterm labor at 30 weeks gestation which lead to low transverse caesarian delivery secondary to recurrent prolonged decelerations and preterm contractions. Patient had an uneventful pregnancy course until this hospitalization. Intraoperatively, a large right sided ovarian mass was discovered. Tissue

pathology revealed metastatic poorly differentiated adenocarcinoma. CT scan of the abdomen pelvis was suggestive of right adnexal mass measuring 10 × 14 × 13 cm with increased vascularity, large degree of abdominal pelvic ascites, with few lymph nodes in the upper mesenteric arcade, along with moderate thickening of the gastric wall. Esophagogastroduodenoscopy (EGD) revealed a gastric mass at cardia (Figure a), and tissue pathology was consistent with adenocarcinoma with presence of signet ring cells (Figure b). Additional work up was positive for elevated CA 125 and AFP tumor marker measuring 355 U/ml and 10.8 U/ml, respectively. Subsequent follow up with CT abdomen revealed bilateral ovarian metastasis with large volume ascites. Diagnostic paracentesis was negative for malignant ascites. Clinical course was complicated by recurrent ascites and progressive clinical deterioration. Due to poor performance status, the patient did not undergo any surgical intervention. Patient is currently being managed with palliative chemotherapy and paracentesis for symptomatic relief.

Discussion: Krukenberg tumor is a metastatic malignancy of the ovary which is characterized by mucin-rich signet-ring adenocarcinoma that arises primarily from a gastrointestinal site. It accounts for almost 1%–2% of all ovarian tumors. The incidence of gastric cancer in the women of reproductive age group is 0.4%–0.5%, making these tumors extremely rare during pregnancy. Pregnancy symptoms masks the presence of the disease leading to diagnosis at a later stage. Unfortunately, no optimal treatment strategy for these tumors have been identified so far. Chemotherapy as well as radiation therapy does not seem to have any significant role in the prognosis of these patients. Due to metastatic nature and lower rate of resectability, surgery is deferred as it does not offer any increased survival time. The overall prognosis remains poor.



[3566] **Figure 1.** (a) EGD revealing gastric mass at cardia (b) Tissue pathology showing adenocarcinoma with presence of signet ring cells.

S3567

Bowel in the Chest: Clinical Manifestations of a Type IV Hiatal Hernia

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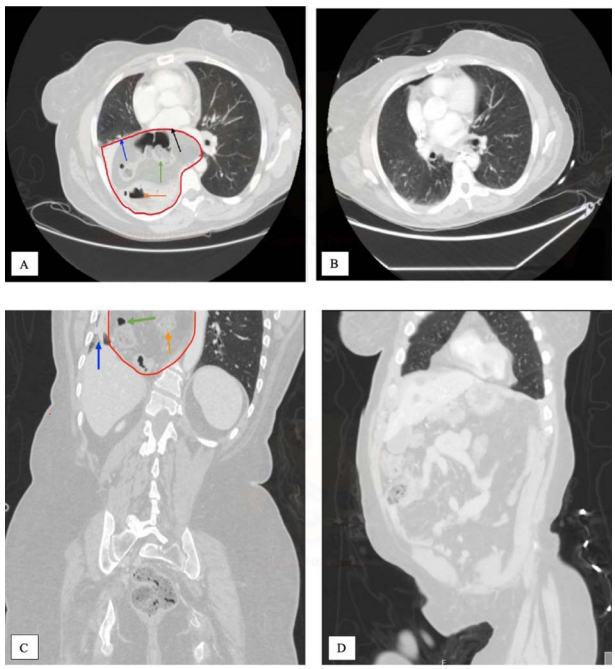
Introduction: Hiatal hernias (HH) result from protrusion of intraabdominal organs into the thoracic cavity through the esophageal hiatus and commonly associated with gastroesophageal reflux disease (GERD). Type IV HH are rare, defined by presence of the stomach and/or other abdominal organs into the thoracic cavity. We report a patient with Type IV HH presenting with atypical pulmonary symptoms caused by mass effect that resolved after surgical operation.

Case Description/Methods: 55-year-old female with past medical history of cerebral palsy and GERD presented with vomiting, productive cough with yellow sputum, and hoarseness for 3 days. Review of systems revealed fever and shortness of breath. Physical examination revealed respiratory rate of 25 with oxygen saturation of 89%, end expiratory wheezing in the left lower lobes and absent sounds on the right. CBC showed a WBC of 12,500 K/mm^3. Chest and abdominal x-ray indicated possible aspiration and large stool burden. She was admitted for aspiration pneumonitis with ileus and received antibiotics, anti-emetics, and laxative medications. CT chest and abdomen (Figure) revealed a large HH with moderate colonic stool burden exerting mass effect over cardio-mediastinal structures. Upper endoscopy and barium enema showed a large Type IV paraesophageal HH containing a long segment of transverse colon with majority of the stomach extending into the posterior right thoracic cavity with mass effect on narrowed colonic loops. She underwent robotic assisted laparoscopic repair with cruroplasty with mesh, esophagopexy and gastropexy. Intra-operatively, colon and stomach were compressing her cardio-mediastinal structures. Postoperative Upper GI study showed successful repair without evidence of leak. CT abdomen showed resolution of HH and small right sided pleural effusions post-operatively. She tolerated a full diet by POD 3 and discharged on POD 4. Postoperative course was complicated by readmission with chylous leak that was controlled by lymphangiographic embolization.

Discussion: This patient presented with pulmonary symptoms leading to a workup for respiratory etiologies. Not uncommonly, paraesophageal HH lead to aspiration and pneumonia, in addition to reflux. Large Type IV HH are unique as they predispose additional organs to strangulation and complications as demonstrated by this case. Heightened awareness for consideration of HHs may promote timely detection and treatment.



[3567] **Figure 1.** CT Abdomen and Pelvis of Type IV Hiatal Hernia (Red) Compressing Mediastinal Structures (Stomach= orange, Colon= green, Lung = blue, Heart = black) [Pre-Operative Axial View (A) with Post-Operative Axial View (B) and Pre-Operative Coronal View (C) with Post-Operative Coronal View (D)].

S3568

Breathing When It Doesn't Add Up: A Metastatic Nodule in the Stomach

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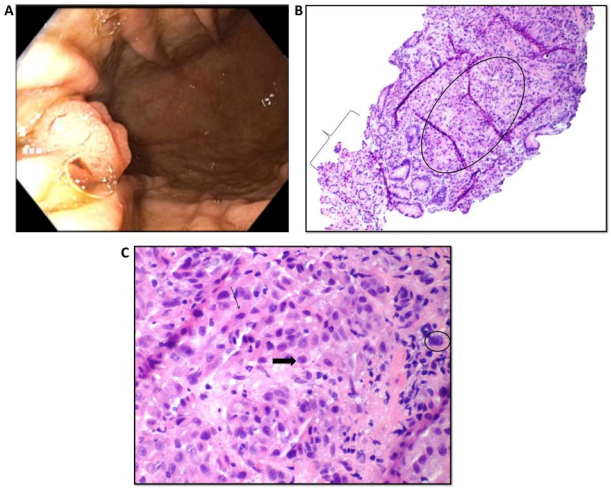
[1]Warren Alpert Medical School of Brown University, Providence, RI; [2]Brown University, Providence, RI; [3]Lifespan, Alpert Medical School, Providence, RI.

Introduction: Metastatic disease to the stomach is rare. From limited published data, primary sources are usually malignant melanoma, breast cancer, renal cell cancer, and esophageal cancer. Of those describing lung cancer as the primary source of metastasis to the stomach, most report squamous cell, large-cell, or small cell carcinoma. Here we present an unusual case of lung adenocarcinoma incidentally found to have metastasized to the stomach.
Case Description/Methods: A 75-year-old female with a past medical history of adenocarcinoma of the lung on carboplatin, pemetrexed, and pembrolizumab with known metastases to the brain and chest wall, gastroesophageal reflux disease, and prior esophageal ring treated with dilation presented for frequent falls. During this hospitalization, the patient endorsed worsened dysphagia and solid food regurgitations. Barium swallow demonstrated delayed esophageal emptying and the test ended early due to patient discomfort. Given these findings and her history of dilation, gastroenterology was consulted. Upper endoscopy showed a non-obstructing Schatzki ring that was dilated to 20 mm with a balloon dilator. An incidental single 9 mm nodule in the gastric fundus was biopsied (Figure A). Pathology reported moderately to poorly differentiated adenocarcinoma without immunohistochemical (IHC) evidence of microsatellite instability. There was no evidence of intestinal metaplasia or dysplasia in the overlying gastric epithelium. The IHC stains from the sample had findings similar to those of prior biopsies of the lung (Figure B, C). After chemo-immunotherapy and radiotherapy, her metastatic masses improved on follow-up imaging.
Discussion: GI tract metastasis from lung adenocarcinoma is rare, 0.5% to 10%; gastric metastasis is rarer, 1.7-3.4%, as the intestines are the more favored targets. Its rarity and lack of clinical symptoms or imaging findings until substantial growth makes detection difficult. In one study, only 2 of 16 gastric metastasis cases were diagnosed before autopsy despite adequate guideline based metastatic workup. Upper endoscopy can identify gastric metastasis earlier, provide key staging information, and prevent hemorrhage or perforation - respectively seen in 53% and 14% of gastric metastasis cases. Clinicians must have increased suspicion for gastric metastasis even when primary malignancy does not commonly go to the stomach or when there are no symptoms. Even incidental findings of gastric metastasis from routine upper endoscopy may be valuable.



[3568] **Figure 1.** 1. Views of the gastric nodule via A. endoscopy and pathology: B. Superficial gastric antral/oxyntic mucosa (bracket) with sheets of pleomorphic cells within the lamina propria (within the round box); C. High power of the sheets of large cells seen in the lamina propria with eosinophilic cytoplasm (thin arrow), high nuclear to cytoplasmic ratio (thick arrow) and pleomorphism.

S3569

Are They Related? A Case of *Cryptosporidium* Colitis Revealing an Underlying Metastatic Gastric Signet Ring Cell Carcinoma

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[1]Palmetto General Hospital, Hialeah, FL; [2]Larkin Community Hospital, Hialeah, FL.

Introduction: The association between cryptosporidiosis and gastrointestinal (GI) malignancy has been reported in the literature but no clear relationship has been established. We report an unusual case of metastatic gastric signet ring cell carcinoma (SRCC) presenting as cryptosporidium colitis.
Case Description/Methods: A 55-year-old-male with no significant medical history presented to the emergency department with severe epigastric abdominal pain, ten episodes of non-bloody diarrhea, and unintentional weight loss. He had recently completed antibiotics for a dental procedure and pneumonia. Stool studies were negative for Clostridium difficile but resulted positive for Cryptosporidium antigen. Computed tomography (CT) of the abdomen and pelvis revealed peripancreatic fat stranding involving the tail of the pancreas suggesting acute pancreatitis, as well as retroperitoneal adenopathy. He had no risk factors for pancreatitis. The patient underwent endoscopic ultrasound (EUS) with biopsies, which revealed high-grade dysplasia at the gastric antrum, moderately differentiated adenocarcinoma with focal mucin production and signet ring cells at the gastroesophageal junction, and evidence of metastatic adenocarcinoma involving the peripancreatic lymph nodes.
Discussion: Gastric cancer is the third leading cause of cancer-related mortality. Despite its overall significant decrease in incidence by detection and treatment of *Helicobacter pylori* (*H. pylori*) infection, gastric SRCC is on the rise. SRCC is known to be an aggressive subtype of adenocarcinoma that is commonly found in an advanced metastatic stage at diagnosis. Cryptosporidium is known for its opportunistic behavior in immunocompromised patients. However, there are only a few reported cases of this infection and its association with GI malignancies. Unlike our patient's case, which presented in the setting of gastric SRCC, all reported cases of cryptosporidiosis have been associated with colon cancer. A review of the literature suggests that cryptosporidiosis may play a potential etiologic role in the development of other GI malignancies. Our patient was fortunate to undergo EUS with biopsies to investigate the peripancreatic adenopathy noted on CT, during which cancer was identified. We emphasize the importance of considering an underlying hidden GI malignancy when diagnosing Cryptosporidium infection in an immunocompetent patient. Further studies are required to support the clinical significance of this association.

S3570

Clinical and Pathologic Response to Vedolizumab in a Young Female Patient With Collagenous Gastritis

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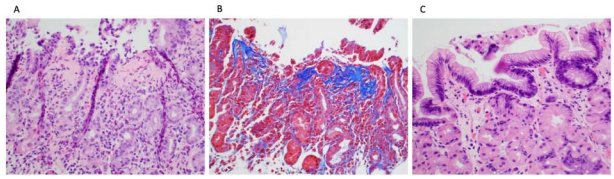
[1]Medical College of Wisconsin Affiliated Hospitals, Milwaukee, WI; [2]Medical College of Wisconsin, Milwaukee, WI.

Introduction: Collagenous gastritis is a rare entity that affects children and adults. The underlying pathophysiology is not well understood and as a result there are limited options for treatment. Here we report a case of collagenous gastritis which was successfully treated with IV vedolizumab.
Case Description/Methods: A 20-year-old female with a past medical history of migraines presented to the gastroenterology clinic with chronic and diffuse abdominal pain with associated nausea, regurgitation, and early satiety. The initial EGD revealed gastric erythema, atrophic gastric body, and significant gastric nodularity. Biopsies revealed patchy foci of increased subepithelial collagen with focal erosion which was suggestive of collagenous gastritis (Figure). Patient was started on topical budesonide 9 mg daily as initial treatment. Subsequent EGD revealed similar endoscopic findings as prior with increased gastric subepithelial collagen layer thickening on histology. Given the lack of improvement and persistent symptoms the patient was started on IV vedolizumab with induction and maintenance dosing. EGD following IV vedolizumab showed both histologic and endoscopic improvement (Figure 1). This was also correlated with an improvement in symptoms.

Discussion: Adults with collagenous gastritis usually present with anemia, abdominal pain, and diarrhea. It is categorized by three different inflammatory environments, a lymphocytic gastritis-like pattern, an eosinophil-rich pattern, and an atrophic gastritis-like pattern. There are many proposed treatments for collagenous gastritis that have not been substantiated with clinical trial data. Observational data suggests that topical budesonide may be efficacious for collagenous gastritis. IV vedolizumab is a monoclonal antibody against a4b7 integrin and is commonly used in inflammatory bowel disease. One proposed mechanism of collagenous gastritis is band-like collagen deposition as a result of inflammation and mucosal injury however this does not consider the active inflammatory milieu found in certain cases. A more likely explanation involves an immune-mediated phenomenon related to epithelial injury and antibody production. Therefore, the efficacy of IV vedolizumab may be related to its ability to reduce the inflammatory response in the intestinal epithelium. Further investigation is necessary to assess the response to vedolizumab in other patients with collagenous gastritis.



[3570] **Figure 1.** Histopathology of gastric body before and after treatment with IV vedolizumab. A, Initial histopathology prior to treatment showing subepithelial collagen deposition of >10 um with sloughing of surface epithelium, loss of specialized gastric glands, and an inflammatory infiltrate of eosinophils, plasma cells, and lymphocytes. B, Initial histopathology prior to treatment with Trichrome stain highlighting collagen deposition. C, Histopathology following treatment with IV vedolizumab showing healthy surface foveolar cells and specialized gastric glands with few plasma cells and no increase in subepithelial collagen. All photomicrographs obtained at 40× original magnification.

S3571

Cocaine and Non-Steroidal Anti-Inflammatory Drug-Induced Perforating Ulcer: The Case of the Double Lumen

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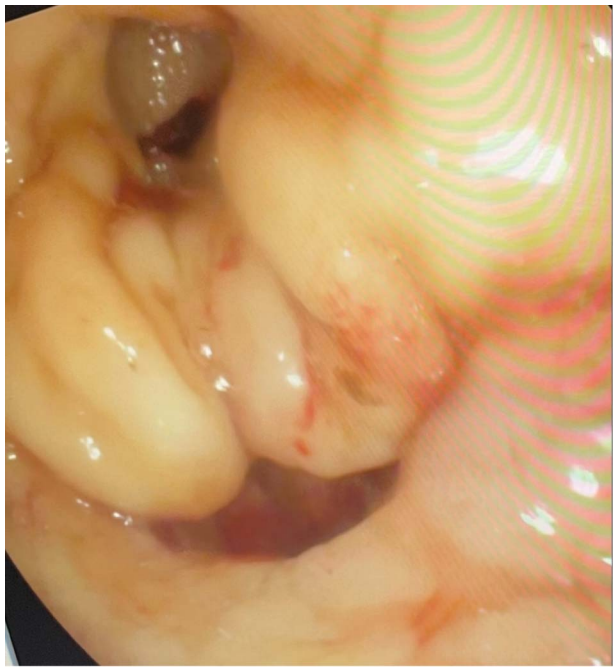
[1]Rutgers New Jersey Medical School, Newark, NJ; [2]East Orange Veteran's Association, East Orange, NJ.

Introduction: Peptic ulcers disease (PUD), or defects in the gastric or duodenal mucosa from a plethora of etiologies, account for over 750 million dollars in medical spending yearly. Although rare etiologies of PUD include infections, vascular insufficiency, infiltrating diseases as well as hormonal hyper secretion states, most common etiologies include *Helicobacter pylori* (*H. pylori*) and Non-Steroidal Anti-inflammatory Drug (NSAID) use. Prior studies have demonstrated a synergistic effect of etiologies in forming PUD as well as increasing risks of complications, especially when discussing alternative medications and NSAID use. Here, we present an interesting endoscopic finding of a perforated peptic ulcer with fistualization into the duodenal bulb discovered during endoscopic evaluation for melena, likely secondary to vascular insufficiency and chronic NSAID use.
Case Description/Methods: This is a 73-year-old male with a medical history of hypertension, hyperlipidemia, ply-substance abuse (cocaine and marijuana), and peripheral artery disease who presented for evaluation of worsening pain and dry gangrene along his second to fourth toes. He underwent an emergent amputation as well as a left femoral to right femoral bypass with vascular surgery. He was loaded on clopidogrel and was admitted to medicine. Twelve hours after his procedure, he developed significant hypotension, tachycardia, and began to endorse melenic stools. An endoscopy showed frank blood in the stomach, duodenal bulb, and duodenum. After lavage of the blood, a lumen was visualized near the pylorus which was able to be traversed via the endoscopy scope. The lumen had areas of ulceration and bleeding, without any visible vessels (Figure).
Discussion: The most common causes of PUD in the United States are NSAID use and *H. pylori*. This is further accentuated by vascular compromising agents such as cocaine. Cocaine is known to cause many gastrointestinal complications including bowel ischemia and gangrene. Most often gastric ulcers secondary to cocaine are found in the prepyloric/pyloric region and the first portion of the duodenum, consistent with this patient's presentation. This patient had a gastroduodenal fistula, also known as an acquired double pylorus which was likely secondary to perforated ulcer in the prepyloric region. The double pylorus is a rare finding, and has been reported in 0.001% to 0.4% of upper gastrointestinal tract endoscopies. It is interesting that this patient endorsed no abdominal pain or dyspepsia.



[3571] **Figure 1.** Endoscopic view of pylorus and pathologic lumen.

S3572

Chronic Abdominal Pain Mystery: Median Arcuate Ligament Syndrome

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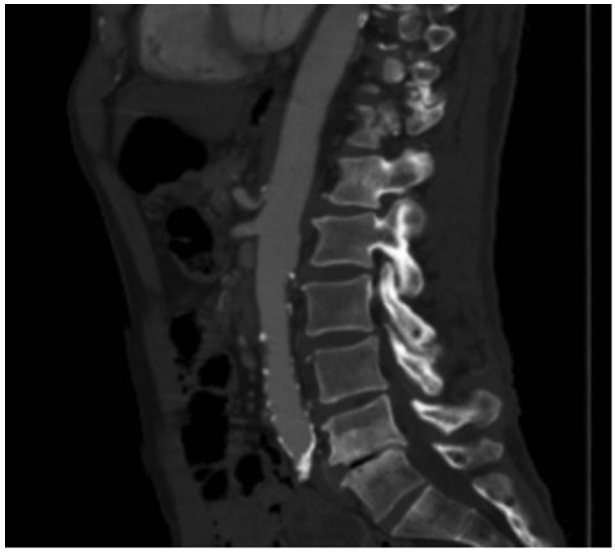
Introduction: Median arcuate ligament syndrome (MALS), also known as celiac artery compression syndrome, is a rare anatomic disorder (2:100,000) that is more prevalent in women (4:1 ratio) with thin body habitus. Average age of presentation is 30 to 50 years old. It is characterized by weight loss, postprandial abdominal pain, nausea, and vomiting. We present a case of MALS in a 68-year-old male with nonspecific GI symptoms.
Case Description/Methods: 68-year-old male with history of alcohol use and ex-lap presents with postprandial dull abdominal pain left to the umbilicus and radiates to the back. Accompanied by early satiety, and 10-20 lbs of unintentional weight loss over one-year. He had normal bowel movements with no melena or hematochezia. He took opioids, pantoprazole, and over the counter pain medications with some relief. He was evaluated with esophagogastroduodenoscopy, colonoscopy, abdominal ultrasound and a computed tomography (CT) of the abdomen and pelvis with contrast. These investigations did not yield any significant findings. CTA abdominal aorta with runoff was ordered due to concern of chronic mesenteric ischemia. It showed focal stenosis of the origin of the celiac axis with minimal post stenotic dilation. Patient was referred to vascular surgery who performed laparoscopic robot assisted median arcuate ligament release. Surgery was converted to open supra-umbilical laparotomy due to difficult visualization of the celiac artery origin. A thick band compressing the anterior surface of the celiac artery was freed. Post-surgery, patient had relief of his abdominal pain and has been recovering well (Figure).
Discussion: Median arcuate ligament syndrome is a diagnosis of exclusion. It usually presents with nonspecific symptoms, and many patients can be asymptomatic and be found incidentally. It is believed that MALS causes inflammation and compression of the celiac plexus causing the symptoms. MALS is difficult to diagnose, especially in the absence of a standardized algorithm to aid in diagnosis and treatment. Our case was unique as our patient did not match with the typical demographics of patients with MALS. He was a male, in his 60's, with average weight. Clinicians should keep a high suspicion of MALS with patients who have postprandial abdominal pain and weight loss with negative initial workup. Diagnosis could be made by ultrasound, CT imaging, or CTA and MRA. Definitive management involves surgery with 85% of patients experiencing postop pain relief in one study.



[3572] **Figure 1.** CTA Image.

S3573

Chronic Gastric Volvulus: A Rare Diagnosis for a Common Constellation of Gastrointestinal Symptoms

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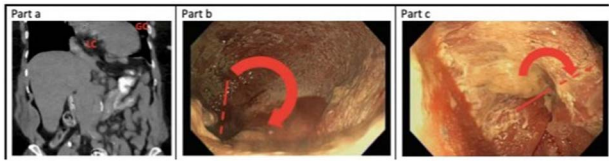
[1]UT HSC - Houston, Houston, TX; [2]Baylor College of Medicine, Houston, TX.

Introduction: Gastric volvulus occurs as a result of pathologic laxity of gastric structures that leads to abnormal rotation of the stomach. The rotation can be either organo-axial, mesentero-axial or both. Gastric volvulus can be primary or secondary and present as acute or go undetected as chronic, with vague gastrointestinal (GI) symptoms, including intermittent epigastric pain, dysphagia, and early satiety. In about 60% of cases of secondary gastric volvulus, patients have an underlying diaphragmatic weakness. Delay in diagnosis can lead to futile work up and deteriorating quality of life for patients.
Case Description/Methods: A 78-year-old woman with history of a hiatal hernia and gastroesophageal reflux disease presents to the hospital with severe nausea, vomiting and epigastric pain. Computed tomography (CT) was notable for a large hiatal hernia and organo-axial rotation of the intrathoracic stomach. Patient subsequently underwent hiatal herniorrhaphy with Nissen fundoplication for paraesophageal hernia repair. Post-operatively, she continued to have poor oral tolerance and epigastric pain. An upper GI series showed changes consistent with a Nissen but there was limited filling of the stomach. An endoscopy (EGD) at that time showed severe ischemic gastropathy. She was placed on bowel rest with medical management and subsequent improvement in her symptoms. Two months later, the patient presented to the hospital with failure to thrive. During the interim, she had persistent epigastric pain, nausea, vomiting, reflux and 20-pound weight loss. CT imaging once again showed organo-axial rotation of the stomach. Repeat upper GI series did not show changes consistent with a volvulus but the procedure was incomplete due to patient intolerance. Remarkably, EGD captured the gastric body volvulus as well as slipped Nissen, which led to its revision. While this patient had multiple CT studies that pointed to a picture larger than simply a severe hiatal hernia as an explanation for her chronic, intermittently worsening epigastric pain, that diagnosis was fundamentally missed (Figure).
Discussion: Chronic intrathoracic organo-axial rotation of the stomach is rare. It may present as a complication of paraesophageal hernia. This case points out the importance of considering chronic volvulus as a presentation for epigastric pain, nausea, and vomiting as well as the importance of reviewing all diagnostic studies and imaging in order to make the correct diagnosis.



[3573] **Figure 1.** Part a. CT Abdomen and Pelvis showing herniation of the stomach into the thoracic compartment and the organo-axial rotation in the coronal view. LC - lesser curvature of the stomach and GC - greater curvature of the stomach Part b and c. EGD showing the leftward torquing required to bypass the twisted gastric body.

S3574

Collagenous Gastritis Treated With Open Capsule Budesonide

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Introduction: Collagenous gastritis is a rare condition characterized by chronic inflammation and collagen deposition in the gastric mucosa. It remains etiologically elusive, with highly variable clinical outcomes and no recognized therapeutic approach. We present a patient with advanced collagenous gastritis accompanied by collagenous colitis and celiac sprue with a dramatic clinical and histological response to therapy.
Case Description/Methods: A 49-year-old previously healthy female presented with 3 weeks of diarrhea, abdominal cramping, and loss of appetite. Stool studies for common pathogens were negative and a colonoscopy showed normal-appearing mucosa. However, random biopsies contained collagenous colitis; she was thus prescribed bismuth subsalicylate. Due to lack of response, she was subsequently switched to budesonide delayed release capsules, which also failed to improve symptoms. After development of new onset weight loss and depression, an esophagogastroduodenoscopy (EGD) was performed revealing white plaques in the gastric antrum; biopsies revealed marked collagen deposition consistent with collagenous gastritis. In addition, duodenal biopsies incidentally showed villous blunting and intra-epithelial lymphocytosis with a sprue-like pattern. Increased tissue transglutaminase IgA antibody levels (139.6 U/mL) corroborated the impression of celiac sprue. Following 2 months on a gluten-free diet and budesonide, her diarrhea, weight loss, and depression resolved, and she remained asymptomatic 1 year later. To assess mucosal healing, she underwent a repeat EGD and flexible sigmoidoscopy, which showed histological normalization of the duodenal and colonic mucosa. However, persistent collagen deposition was noted in the stomach; she was thus restarted on budesonide with instructions to take the medication sprinkled in apple sauce (open-capsule budesonide). An EGD 3 months later showed interval improvement in the degree of gastric mucosal collagen but persistence of lymphocytic inflammation.
Discussion: Collagenous gastritis is a rare disorder characterized by various patterns of collagen deposition in the gastric wall. Clinical symptoms may include abdominal pain, anemia, diarrhea, nausea and vomiting, and weight loss, among others. A number of therapeutic agents have been utilized but there remains no standardized therapy. This case illustrates clinical and histological improvement in a patient with collagenous gastritis, collagenous colitis, and celiac sprue treated with budesonide administration.

S3575

Case of Iron Deficiency Anemia Secondary to a Pyogenic Granuloma

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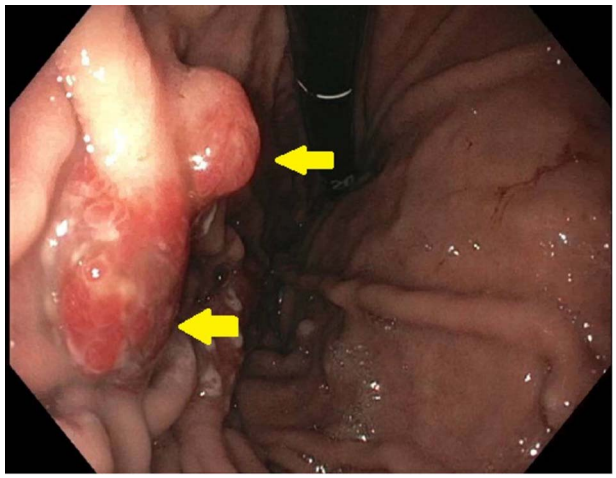
Introduction: Pyogenic granulomas (PG) are lesions in the skin or mucosa composed of vasodilative granulation tissue. Although commonly found in the oral cavity, they are rare throughout the rest of the gastrointestinal (GI) tract. Gastrointestinal PGs typically present as insidious microcytic anemia, which can be severe. We present a case of a patient with iron deficiency anemia secondary to pyogenic granulomas.
Case Description/Methods: A 75-year-old Caucasian female referred to the hospital for evaluation for coronary artery bypass graft. Medical history was significant for coronary artery disease, microcytic anemia, tobacco use. On workup, she was found to have iron deficiency anemia with labs showing a hemoglobin of 8.5 g/dL and mean corpuscular volume of 78.3 fL. Her baseline hemoglobin was 12 g/dL last known 5 years before. Iron studies showed low iron at 24 ug/dL and low transferrin saturation of 7%. She denied any hematemesis, melena, or hematochezia. Digital rectal exam demonstrated soft, brown stool. Diet at that time was unchanged from baseline. No other sources of non-GI bleed were identified. Further endoscopic work-up was obtained. Colonoscopy and video pill capsule were unmarkable. Esophagogastroduodenoscopy revealed three large, gastric polypoid lesions that were consistent with visual findings of pyogenic granulomas (Figure). Biopsy revealed an entirely fibrin composition and inflammatory cells with granulation tissue and a strip of reactive foveolar epithelium. Patient was treated conservatively with iron supplementation.
Discussion: Pyogenic granulomas are a benign polypoid form of capillary hemangiomas. Initially, it was thought that PGs were caused by infection, but they are most likely multifactorial, including mucosal irritation resulting in reactive processes. Endoscopically, these lesions are commonly erythematous, pedunculated polyps. They are typically described as having a smooth, but visibly ulcerated, surface that can be friable or oozing blood. Further, visual aspects of PG include the underlying vasculature causing dark red to fresh sanguine appearance. Histologically, PGs are lobular-patterned hemangiomas with capillary vessels. Similar to this case, granulation tissue and a single layer of endothelial cells may also be present. Conservative management includes supporting blood loss with iron supplementation. If unresponsive, endoscopic management includes resection with a snare polypectomy, endoscopic mucosal resection, band ligation, or heat application.



[3575] **Figure 1.** Semi-pedunculated polyps (arrows) with hyper vascular appearance. No obvious stigmata of bleeding.

S3576

Collagenous Gastritis: A Rare Cause of Anemia

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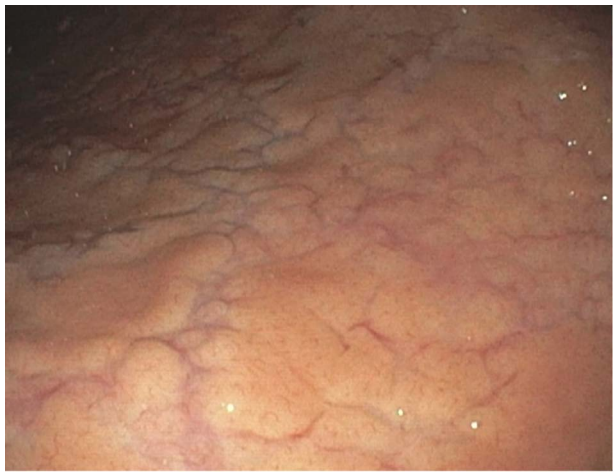
Introduction: A relatively common cause of gastrointestinal symptoms including abdominal pain and diarrhea is microscopic colitis. Much less commonly seen is the related disorder collagenous gastritis, which relies on pathology and high clinical suspicion for diagnosis. We report on a case of a patient with this rare finding.
Case Description/Methods: A 32-year-old male with a past medical history of achalasia status post myotomy presented with symptomatic normocytic anemia. His initial work up was significant for a hemoglobin of 5g/dL with reported use of non-steroidal anti-inflammatory drugs (NSAID). An esophagogastroduodenoscopy (EGD) showed atypical gastropathy with gross cobblestoning in the gastric body. Pathology showed chronic gastritis with focal gastric intestinal metaplasia, normal duodenal mucosal biopsies, and celiac disease serology was negative. Repeat EGD with gastric mapping demonstrated chronic gastritis, no intestinal metaplasia, negative H. pylori. Trichome stain highlighted increased subepithelial collagen layer which was confirmed by a gastrointestinal pathologist, consistent with collagenous gastritis. Colonoscopy was normal; colon biopsies were not taken as patient was asymptomatic. He was started on iron supplementation and remains well. (Figure)
Discussion: Collagenous enteritides are a class of gastrointestinal disorders encompassing collagenous colitis, sprue, and gastritis. While collagenous colitis is relatively common, collagenous gastritis remains very rare. Typical symptoms include abdominal pain, nausea, diarrhea, and anemia. The most common endoscopic findings include gastric nodularity in the gastric body, erosions, and erythema. The diagnosis depends on pathologic findings of subepithelial infiltration with chronic inflammatory cells in the lamina propria, as well as deposition of collagen bands greater than 10 microns in thickness. The pathogenesis remains unclear, but medications like NSAIDs as well as smoking have been implicated. It is also associated with several autoimmune diseases including Sjogren's and ulcerative colitis, causing postulation that there may be overexpression of HLA DR by epithelial cells and CD25 positive cells. There is currently no established therapy, and management is usually supportive care. Our case highlights the importance of a high level of suspicion for this rare disease, and pursuit of accurate diagnosis in the face of clinical perplexity. Likely etiology in our case appears to NSAIDs use which is known trigger for collagenous colitis.



[3576] **Figure 1.** Endoscopic view of the gastric body in collagenous gastritis.

S3577

Chronic Intrathoracic Gastric Volvulus Management: Could Less Be More?

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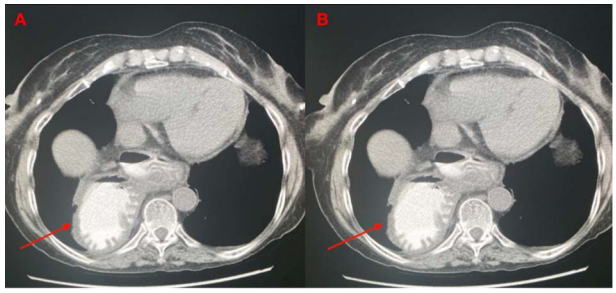
Introduction: Chronic intrathoracic gastric volvulus usually presents with mild vague symptoms requiring high suspicion index to diagnose. Treatment can be either endoscopic or surgical. Nevertheless, neither approach is always ideal. Endoscopic management carries a high risk of gastric perforation, while surgical management may not be suitable due to the risk of anesthesia. In the following case report and literature review we evaluate the role of non-interventional conservative management in high-risk surgical patients with chronic intrathoracic gastric volvulus who experience breakthrough clinical symptoms.
Case Description/Methods: An 88-year-old woman with history of dementia and hysterectomy presented for abdominal pain and vomiting. Vital signs and laboratory work up were stable. CT scan of the abdomen with contrast showed the stomach to be largely contained within the right hemithorax and rotated along its long axis compatible with an organoaxial volvulus, yet was nondilated nor obstructed, with contrast visualized throughout nondilated loops of small bowel which seem to be chronic in etiology as there were intrathoracic bowel loops on abdominal imaging six months prior **(Figure A)**. Review of prior images noted the presence of the intrathoracic stomach on a CT scan done 12 years prior **(Figure B)**. The patient was deemed high risk for sedation and anesthesia, for either endoscopic or surgical management, given the history of worsening dementia, debilitated medical condition, and diminished PO intake with malnutrition. She was started on TPN then 2 days later was switched to PO as her appetite and oral intake improved with frequent re-orientation and her family attempting to orally feed her. On evaluation one-month later, the patient had no more abdominal symptoms, continued to have maintain oral intake, with considerable improvement of her mental status and physical capabilities.
Discussion: In this report, we demonstrated that conservative management is, perhaps, a more appropriate approach in patients with chronic gastric volvulus who are poor endoscopic or surgical candidates. Furthermore, our patient's mental status and ability to tolerate oral diet has improved with adequate supportive measures (frequent re-orientation; meeting needs for nutrition, fluids, and sleep). Nevertheless, our patient remains at a high-risk form symptom recurrence given the history of abdominal hysterectomy for a leiomyoma, and thus close monitoring is necessary for symptom recurrence of the uncorrected gastric volvulus.



[3577] **Figure 1.** Computed tomography scan of the abdomen (axial view) performed on this admission (on the left (A)) vs 12 years prior (on the right (B)) Figure legend: The arrow points to the intrathoracic gastric volvulus.

S3578

CMV Gastritis in an Immunocompetent Patient Masking as Gastric Malignancy

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Introduction: CMV infections of the colon are common but exceedingly rare in the stomach and usually only found in immunocompromised individuals. We present a case of CMV gastritis where no certain risk factors were found for CMV in an otherwise healthy man.
Case Description/Methods: A 54 year old male with a history of H.pylori gastritis and erosions noted on an EGD around 10 years ago and asthma, presented with epigastric pain, bloating, and vomiting for 2 weeks. He was an active smoker but denied any alcohol or illicit drugs. He attributed to frequent use of his albuterol inhalers, but review of systems and his physical exam were otherwise unremarkable. Labs demonstrated mild elevations in ALT and AST, but a normal CBC with differential and BMP. CT demonstrated normal lungs, fatty liver but otherwise normal liver, spleen and pancreas, no lymphadenopathy, and thickening of the stomach. EGD revealed a granular inflamed mucosa surrounding the antrum spreading up in the incisura and distal body highly suspicious for malignancy. Pathology revealed chronic gastritis with erosions with rare enlarged epithelial glandular cells with intranuclear and cytoplasmic Inclusions consistent with CMV gastritis and negative for H.pylori. He initially improved on PPI therapy alone. Upon follow up, HIV was checked and found negative. He was then referred to an infectious disease specialist for proper antiviral treatment and dosing.
Discussion: CMV is a herpes virus which is ubiquitous with a prevalence of up to 80% in North America. It is generally asymptomatic and only causes infections or reactivations in immunocompromised hosts. CMV gastritis is rare even for individuals with a weak immune system, but exceptionally rare for those with no risk factors. Symptoms usually include abdominal pain, nausea and vomiting. Endoscopic evaluations can vary from normal mucosa to ulcerations/erosions to pseudotumors as in our patient. Biopsy must show intranuclear inclusions to make the final diagnosis and treatment is ganciclovir. Our

patient was a healthy male, with no history of any malignancy, immunosuppressives or HIV. One study demonstrated that 4 patients found to have CMV of the GI tract were later found to have a separate malignancy elsewhere. Although no such relationship between CMV and cancers have been established, one hypothesis can be that such patients like this case, should have all age related cancer screenings up to date and closely monitored for any undetected underlying malignancies.

S3579

Collagenous Gastritis in a Young, Healthy Patient on an SSRI: A Potential Pharmacologic Link to a Zebra Diagnosis

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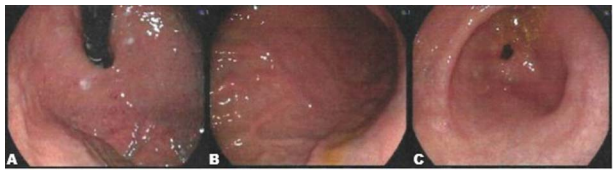
Introduction: Collagenous gastritis is a rare disease primarily affecting the digestive system characterized by thick subepithelial collagen bands (>10 μm) associated with an inflammatory infiltrate of the gastric mucosa. Since it was first reported in 1989, less than 100 cases have been documented in English literature. With fewer than 100 reported cases and no established etiology, no standard therapy exists based on randomized, controlled clinical trials. The objective of this case report is to add to the current knowledge on collagenous gastritis by proposing the need for further work to evaluate a potential pharmacologic link between SSRI use and the disease.
Case Description/Methods: A healthy 25 year old woman a past medical history of generalized anxiety disorder (on longstanding Sertraline) presented for evaluation of several months of generalized abdominal discomfort, frequent eructation, nausea, and bloating. She denied any other gastrointestinal symptoms. The only medication she took regularly was Sertraline 25 mg daily, which she reported taking for at least a year. She did not take nSAIDs, herbal supplements, or vitamins. Physical examination was benign. CBC, CMP, and thyroid function were normal. Serological screening for celiac disease was negative Upper endoscopy demonstrated a normal appearing esophagus, stomach, and small intestine. Biopsies were taken from the antrum, body, and second portion of the duodenum. Gastric biopsies demonstrated collagenous gastritis without evidence of intestinal metaplasia or H. pylori. Duodenal biopsies were normal. The histologic diagnosis was confirmed at Cleveland Clinic. (Figure)
Discussion: The ability of antidepressants to affect the immune system in various ways has been studied extensively. For example, one meta-analysis published in 2015 suggested that serum levels of TNF-alpha and IL-6 significantly decreased while no significant change in CRP concentration before and after treatment was observed. Another meta-analysis of 22 studies showed that the level of IL1-Beta in patient's serum significantly decreased, IL-6 slightly decreased, TNF-alpha levels did not change regardless of taken medication (SSRI, SNRI, or TCA). We propose that the development of this patient's collagenous gastritis was mediated by her use of sertraline, perhaps through downregulation of TNF-alpha and IL-6, known proinflammatory cytokines. Further studies are needed to test this hypothesis.



[3579] **Figure 1.** Actual endoscopic images of patient's stomach: A. cardia B. fundus C. antrum.

S3580

Double Trouble: A Case of Primary Gastric Balloon Cell Melanoma

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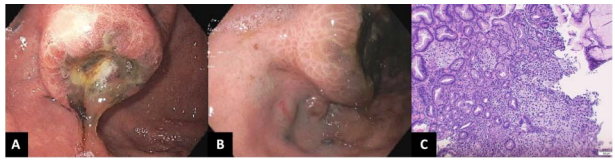
UCSF-Fresno, Fresno, CA.

Introduction: Primary gastric melanoma is a rare malignancy described in isolated case reports. Balloon cell differentiation is a unique histopathological subtype, representing less than 1% of malignant melanoma. We report a case of primary gastric balloon cell melanoma presenting as gastrointestinal (GI) bleed.
Case Description/Methods: A 73-year-old man presented with two days of hematochezia and melena. His physical examination was unremarkable with no suspicious skin lesions. He previously presented with similar symptoms and was found to have gastritis on esophagogastroduodenoscopy (EGD). A computerized tomography (CT) scan of the chest and abdomen, during this admission, revealed distal gastric body wall thickening, a 0.7 cm adjacent soft tissue nodularity, right lung nodule and enlarged hilar lymph node. Repeat EGD revealed multiple submucosal ulcerated, necrotic masses in the stomach (Figure a-b), increased in size from the previous EGD two months ago, suggesting an aggressive process. Gastric biopsy revealed balloon-like submucosal epithelioid neoplasm with necrosis and intracytoplasmic pigment concerning for melanoma (Figure c). Immunohistochemical testing was positive for Melan-A, SOX10, and S100 consistent with melanoma with balloon cell differentiation. The patient was referred to oncology and underwent a PET scan which confirmed intense uptake in the stomach, hypermetabolic pulmonary nodules, and no skin lesions. A CT-guided biopsy of the pulmonary nodules was negative for malignancy, further confirming primary gastric melanoma. The patient remains under close monitoring with plan for initiation of pembrolizumab.
Discussion: Melanoma is an aggressive malignancy that has a predilection for metastasis to the GI tract. However, primary gastric melanoma is a rare entity and balloon cell is one of the rarest histopathological subtypes. Due to paucity of cases, treatment guidelines are limited. While immune checkpoint inhibitors (ICI) have revolutionized gastric cancer treatment, the use of ICI is understudied in primary gastric melanoma. Further studies investigating the molecular basis of melanoma are needed for development of targeted treatments. Our case emphasizes that symptoms of GI bleeding should be evaluated diligently, as early recognition of malignancy can lead to a prompt diagnosis and initiation of life-saving treatment.



[3580] **Figure 1.** A-B. EGD showing multiple submucosal ulcerated and necrotic masses in the stomach. C. H&E image showing lamina propria replaced by infiltrating enlarged, voluminous balloon-like cells with oval nuclei, prominent cherry nucleoli, and intracytoplasmic pigment.

S3581

Common Variable Immunodeficiency and Gastric Carcinogenesis: Two Illustrative Cases

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[1]Texas A&M Intercollegiate School of Engineering Medicine, Houston, TX; [2]Houston Methodist Hospital, Houston, TX.

Introduction: Common variable immunodeficiency (CVID) is linked to an increased risk for gastric cancer which seems to be associated with achlorhydria, H. pylori infection, decreased production of gastric IgA, and autoimmune phenomena. We present two patients illustrating progression of gastric pathology in CVID through dysplasia to cancer.
Case Description/Methods: A 42-year-old woman with CVID presented with dyspepsia, diarrhea and a 75 lb weight loss. Small intestinal bacterial overgrowth was diagnosed and treated. EGD revealed a superficial ulcer at the incisura. Pathological examination demonstrated chronic active gastritis with H. pylori and intestinal metaplasia (IM) without dysplasia. Triple therapy was unsuccessful; repeat EGD 1 year later demonstrated 3 superficial ulcers at the incisura and antrum; biopsies revealed chronic active gastritis with H. pylori and IM without dysplasia. Second-line therapy failed. 3 years later, EGD showed a non-bleeding cratered ulcer with a nodular edge on the greater curvature in the antrum. Biopsies demonstrated an invasive tubular adenocarcinoma arising in a background of IM with low and high grade dysplasia and no evidence of H. pylori. Partial gastrectomy with Roux-en-Y gastrojejunostomy and modified D2 lymphadenectomy was performed. Pathologic examination confirmed a T1aN0M0 moderately differentiated adenocarcinoma. A 64-year-old woman with CVID, celiac disease, pernicious anemia and a CTLA4 gene mutation presented in 2019 for surveillance following removal of a gastric adenoma by

EMR 2 months earlier. From 2018-2022, EGDs with gastric mapping were performed every 6 months and revealed progression from low to focal high grade dysplasia. In 2019, surveillance biopsies showed foci of low and high grade dysplasia in the antrum. EMR of a sessile polyp and ESD of 2 sessile polyps were performed followed by EMR of a sessile antral polyp and EMR of diffusely nodular mucosa at the incisura 5 months later. Biopsies have been consistently negative for H. pylori.
Discussion: These cases illustrate progression to cancer in CVID and exemplify two risk factors: Helicobacter pylori and achlorhydria. Both progressed from low to high grade dysplasia and, in one, to invasive cancer within 4 years. Guidance on surveillance for IM in the non-CVID population varies in terms of frequency and intervals; with the risk of progression to cancer in CVID increased 10-47-fold, there is an urgent need for guidelines on surveillance.

S3582

Disguised as Post-Operative Ileus: A Case of a Giant Gastric Ulcer Causing Outlet Obstruction and Gastric Pneumatosis

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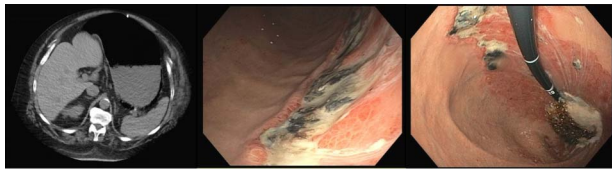
University of Arizona College of Medicine, Phoenix, AZ.

Introduction: Giant gastric ulcers (GGU), defined as ulcers larger than 2-3cm, are relatively rare in the setting of widespread proton pump inhibitor (PPI) use. Though usually located in the lesser curvature, GGU may occur in any part of the stomach. Typical symptoms are similar to that of peptic ulcer disease (PUD), i.e. epigastric pain and gastrointestinal bleeding, however GGU are highly prone to perforation and are more likely to be malignant in the elderly. Overall, gastric outlet obstruction is the least common complication of PUD.
Case Description/Methods: A 74-year-old obese male with history diabetes, sleep apnea, and prior laparoscopic gastric banding surgery was admitted for elective surgery for Charcot arthropathy. Post-operatively, he developed nausea, vomiting and abdominal bloating. Abdominal x-ray showed distention of the small bowel concerning for ileus. Exam showed a non-tender abdomen with distention and tympany on percussion. His emesis resolved with antiemetics, however distention persisted despite passing gas and stool. Three days after surgery, he developed acute anemia without overt bleeding requiring blood transfusions. Abdominal X-ray and CT was performed which showed marked gaseous distention of the stomach and gastric wall pneumatosis. Nasogastric tube was placed for decompression with subsequent resolution of his distention. Due to concern for gastric band erosion, Gastroenterology was consulted. Upper endoscopy was performed which revealed a 4cm clean-based ulcer with overlaying eschar along the greater curvature with surrounding erythema and edema. Biopsies of the ulcer border showed acute erosive gastropathy with focal clustering of eosinophils without evidence of dysplasia. He was started on PPI and sucralfate, and remained clinically stable without further gastrointestinal symptoms. (Figure)
Discussion: Gastric pneumatosis due to gastric emphysema is caused by disruption of mucosa leading to air migrating into the gastric wall. Etiologies vary, including injury from instrumentation, severe vomiting, pulmonary pathology, penetrating gastric ulcers, or gastric outlet obstruction. Few cases reports have described gastric emphysema resulting from gastric band erosion, however there are no reports describing this occurring in the absence of full erosion. Overall, gastric emphysema is relatively rare, as is development of GGU. To our knowledge, this is the first reported case of unperforated giant gastric ulcer resulting in outlet obstruction with gastric pneumatosis.



[3582] **Figure 1.** CT abdomen showing marked gaseous distention of the stomach and gastric wall pneumatosis (Figure 1a). Upper endoscopy findings of a friable, erythematous giant ulcer with clean-base overlaying the greater curvature with significant surrounding erythema and edema in the fundus/cardia (Figure 1b and 1c), as well as multiple surrounding small ulcerations, some with clean-base and some with flat pigmented spots, throughout (not pictured). No evidence of active bleeding, visible vessel, or high-risk features for bleeding.

S3583

Disease Activity Evaluation in Collagenous Gastritis: A Case Report

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Introduction: Collagenous gastritis (CG) is a rare condition with poorly understood pathogenesis characterized by the subepithelial deposition of a collagen band and mucosal inflammatory infiltrates. There are 2 different clinical presentations: adult-onset which manifests as chronic diarrhea associated with collagenous gastroduodenocolitis, and pediatric-onset which presents with abdominal pain, anemia and isolated gastroduodenal involvement. Upper endoscopy (EGD) commonly shows mucosal erythema, nodularity, and ulceration. Several treatment options have been described including hypoallergenic diets, PPIs, corticosteroids, sucralfate, H-2 receptor antagonists, 5-ASA, azathioprine, and budesonide. We present a case that illustrates the benefit of EGD for assessment of disease activity.
Case Description/Methods: A 17-year-old female with history of iron deficiency anemia, chronic constipation and CG presented to establish care. CG was diagnosed 3 years earlier after she presented with dizziness, anemia, and malaise. Hemoglobin was 7.8 with a positive Hemoccult test. She subsequently underwent an EGD (Figure 1) with evidence of diffuse nodular mucosa in the gastric body with biopsies showing patchy thickening of the subepithelial collagen band (Figure 2). Colonoscopy, capsule endoscopy and NM scan for Meckel's were normal. She was started on daily PPI and monthly iron IV supplementation. She experienced occasional reflux symptoms well controlled with PPI and a stable Hgb 12.1 – 14.4 over a two-year period with iron therapy. During her initial consultation, Her PPI and iron supplementation was discontinued, and a short trial of Bismuth administered. She remained asymptomatic for 1 year. She then presented with worsening symptoms including fatigue, heartburn and mild anemia. She underwent a repeat EGD (Figure 3) which demonstrated diffuse severe mucosal changes characterized by congestion, erosion, friability with contact bleeding, and nodularity in the gastric body, with pathology confirming ongoing CG with thickening of subepithelial band and severe gastritis. The PPI was restarted and a 3-month course of open capsule oral budesonide was initiated.
Discussion: Our case highlights the importance of endoscopic follow-up for reassessment of disease activity in patients with a diagnosis of CG. As this patient course demonstrates, clinical manifestations may not parallel gastric inflammation. It is important to assess disease activity in patients with CG even in the absence of ongoing symptoms.

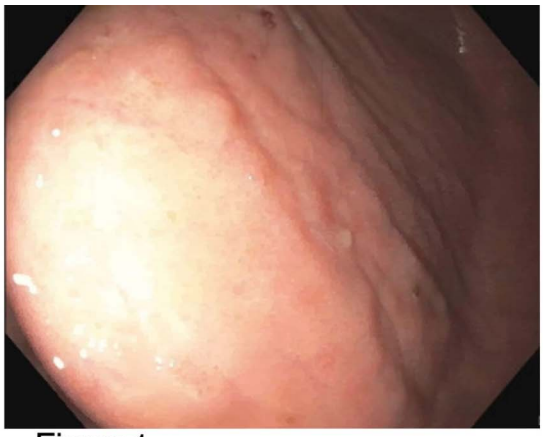

Figure1

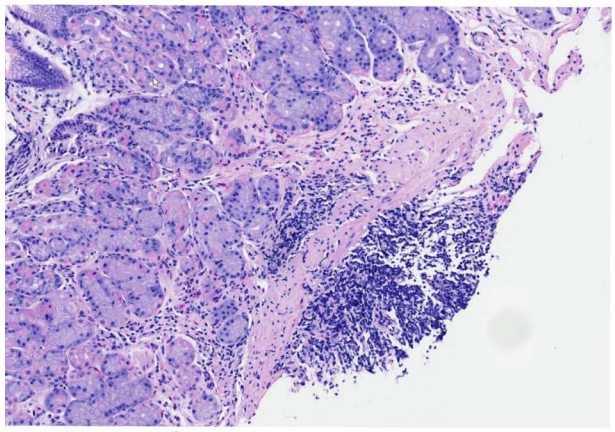

Figure 2

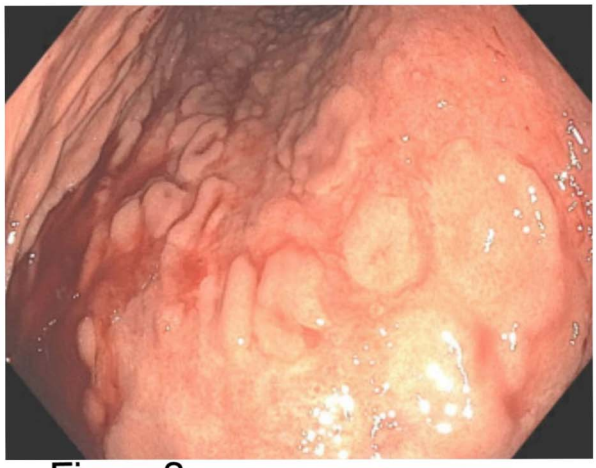

Figure3

[3583] **Figure 1.** 1 EGD at the time of diagnosis with diffuse nodular mucosa in the gastric body. Figure 2 Histological section of gastric body showing nonspecific chronic inflammatory infiltrate with a thickened subepithelial collagen deposit on hematoxylin and eosin stain. Figure 3 Followup EGD with diffuse several mucosa changes characterized by congestion, erythema, erosion, friability with contact bleeding and nodularity in the gastric body.

S3584

Diagnostic Obscurity of Gastrointestinal Subepithelial Tumors: An Organizing Gastric Hematoma

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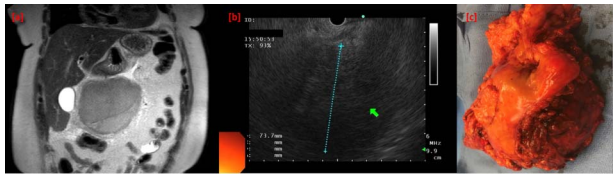
Introduction: Subepithelial tumors (SETs) are frequently encountered in the gastrointestinal tract, the majority of which are asymptomatic and discovered incidentally. Characterized by location, size, and echogenicity, the diagnostic gold standard for SETs is histology and immunohistochemistry, usually via fine or core needle biopsy. There is a spectrum of imaging modalities to diagnose these tumors with two major ones being esophagogastroduodenoscopy (EGD) and endoscopic ultrasound (EUS). They are operator-dependent, though in the right hands EUS approaches a sensitivity of 92% and a specificity of 100%,

being the most accurate method to differentiate SET location. Symptomatic masses should be resected independent of definitive diagnosis. In the case that a biopsy is not conclusive, imaging along with patient symptoms are used to guide operative intervention.

Case Description/Methods: A 64-year-old female with uncontrolled diabetes and a history of a gunshot wound status-post exploratory laparotomy and splenectomy 30 years ago presented with vomiting and epigastric pain for 24 hours. Imaging showed an exophytic, slow-growing mass that appeared to arise from the greater curve of the stomach with heterogeneous properties and extrinsic compression. A gastrointestinal stromal tumor was the most likely possible working diagnosis at the time. Multiple fine needle aspiration biopsies via EUS consistently showed non-diagnostic pathology. The location at the greater curvature of the stomach and its continual increase in size favored a neoplastic formation. However radiographic imaging features concurrently were suspicious for a hematoma formation. The patient was taken to the operating room for an en-bloc resection of the gastric mass and pathology confirmed the diagnosis of fibrosis surrounding an organizing hematoma. (Figure)

Discussion: There have been multiple reports troubleshooting upper abdominal masses with inconclusive biopsies and misdiagnosed imaging modalities that have undergone definitive surgical intervention and noted to have hepatic pathology or acute gastric hematoma. However, to the best of our knowledge, this is the first case report of a chronic enlarging gastric mass as an organizing hematoma. Based on current guidelines, it is important to use multiple diagnostic tools to help guide operative intervention for nondiagnostic subepithelial gastric mass pathologies with surgery being the best definitive treatment option in symptomatic patients.



[3584] **Figure 1.** [a] MRI abdomen with contrast demonstrating a 13 x 10 cm circumscribed, hypovascular mass with adjacent fat stranding arising from the greater curvature of the stomach [b] Endoscopic ultrasound showed a large 8 x 5 cm hypoechoic mass extending from the fourth layer of the greater curvature of the stomach without association to the pancreas [c] En-bloc resection of mass adherent to stomach and transverse colon mesentery with final pathology confirmed to be an organizing hematoma with surrounding fibrosis.

S3585

Don't Forget the Gut: A Case of Gastrointestinal Kaposi Sarcoma

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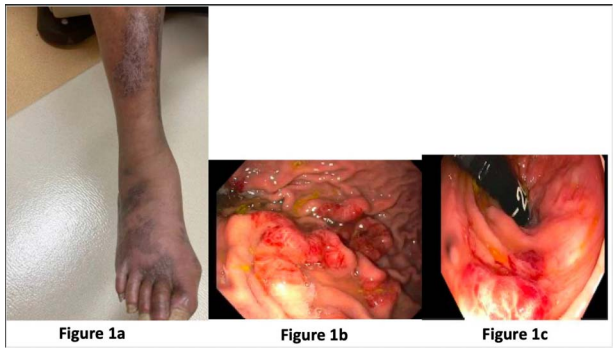
Introduction: Kaposi sarcoma (KS) is a low grade vascular tumor associated with Human Herpesvirus-8 (HHV8) infection. The disease course is indolent with manifestations ranging from cutaneous to fulminant, visceral involvement. In the United States, KS is most often seen in those with AIDS and with increased access to highly active antiretroviral therapy (HAART) the incidence has been decreasing. GI tract involvement of KS is uncommon and few have GI symptoms; therefore, gastrointestinal Kaposi sarcoma (GI-KS) remains under-diagnosed. This case describes a patient with cutaneous involvement of KS found to have GI-KS with no GI symptoms.

Case Description/Methods: A 49-year-old African American male presented with shortness of breath, non-productive cough and a 60-lb unintentional weight loss over the past year. He was diagnosed with HIV in 1999 and has been intermittently compliant with HAART therapy. In the past two years, he was started on Bictegravir/emtricitabine/tenofovir alafenamide but was non-compliant. He recently noticed the development of bilateral non-painful and non-pruritic lower skin lesions (Figure a). His CD4 count was low at 88 cells/mm^3 with an elevated HIV viral load. His lower extremity skin lesion biopsy showed irregular blood vessels lined by atypical endothelial cells with an infiltrating growth pattern consistent with KS. CT chest demonstrated multiple ground glass opacities and bronchoscopy with FNA were negative for any malignancy. CT abdomen/pelvis was unremarkable. EGD and colonoscopy was done to to rule out systemic involvement which demonstrated scattered moderate mucosal changes characterized by erythema, granular nodularity in the gastric body and nodular mucosa in the rectum (Figure b/c). Biopsies demonstrated spindle cell proliferation involving the lamina propria consistent with KS.

Discussion: Kaposi sarcoma is an AIDS-defining rare vascular tumor. Current recommendations for endoscopy are reserved for patients suspicious for GI involvement. This patient had poorly controlled HIV with no GI symptoms and was found to have GI-KS during endoscopy. Management of KS differs based on cutaneous versus systemic involvement. HAART therapy is the first line in management of cutaneous KS while HAART therapy and chemotherapy is first line in management for systemic KS. Therefore, undiagnosed GI-KS in patients with cutaneous KS negatively affects morbidity and mortality. Therefore, clinicians should maintain a high suspicion for GI-KS in those with AIDS and/or cutaneous KS.



[3585] **Figure 1.** a. Lower extremity cutaneous lesions Figure b. Gastric lesions Figure c. Rectal lesions.

S3586

Elucidating with Endoscopy: Investigating Surprising Symptoms in a Patient With a Gastric Electrical Stimulator

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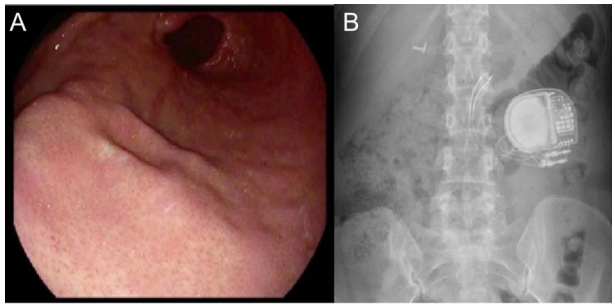
Introduction: Gastric electrical stimulators (GES) are long-term options for patients with gastroparesis refractory to pharmacotherapy and lifestyle changes. As GES use rises, recognizing device complications is crucial for managing patients with complex disease. This scenario highlights a case in which the etiology of the patient's complications was discovered during endoscopy.

Case Description/Methods: A 30-year-old female with gastroparesis related to type 1 diabetes mellitus, and GES placement one year prior, was admitted for electrical shock sensations near her stimulator site, with radiation to her left arm and neck. It occurred about twelve times a day, and was associated with nausea and vomiting. She reported mild abdominal distension and feeling as if her pacer moved. There were no complications during device placement, and follow-up interrogations revealed no abnormalities. The patient denied other gastrointestinal symptoms or trauma to the pacer site area. Her abdomen was soft with mild generalized tenderness, and the surgical scars from GES placement were well-healed. Device interrogation revealed settings at 2.5 volts, and impedance at 503 ohms. AP and lateral abdominal X-ray revealed proper lead placement. The decision was made to shut off the device, which ceased the shock sensations. Upper endoscopy revealed linear, subepithelial protrusions along the greater curvature of the antrum, located approximately 10.0 cm from the pylorus, consistent with typical gastric stimulator leads (Figure). After surgical consultation, stimulator leads were replaced, and the patient was discharged without continued symptoms.

Discussion: Adverse effects related to GES use include disruption of lead placement, erosion in the submucosa or mucosa, and obstruction, with generator site infection as the most common issue. Studies have shown that lead penetration into the gastric lumen occurs in 3% of patients, with 16% of patients requiring a corrective surgical procedure. This patient's presentation demonstrates a rare event after GES placement. Typically, leads are placed in the muscularis propria of the greater gastric curvature. Lead displacement can be detected either on imaging or if impedance values are outside the normal range; however, neither of those occurred in this patient. Abnormal presentations demonstrated by patients with GES should be evaluated thoroughly, with suspicion for hardware malposition. Diagnostic work-up with endoscopy can guide further management.



[3586] **Figure 1.** A: Upper endoscopy revealing linear, subepithelial protrusions at the greater curvature of the antrum, located approximately 10 cm from the pylorus, consistent with typical gastric stimulator leads Figure B: Abdominal x-ray showing an anterior view of gastric pacer generator and lead placement.

S3587

Eosinophilic Gastritis With Antral Pseudopolyps

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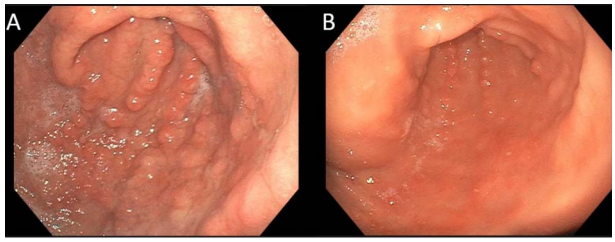
Introduction: Eosinophilic gastritis (EG) is a rare disease distinguished by eosinophilic infiltration likely due to antigen driven humoral immunity affecting about 6 in 100,000 people. Diagnosis and treatment are often challenging due to the heterogeneity of manifestations and endoscopic findings. This case highlights a severe variant of EG.
Case Description/Methods: A 20-year-old man with a history of atopy presented initially with bilateral lower extremity edema of 1 year duration. Initial workup was significant for hypoalbuminemia 2.5g/dL, iron deficiency anemia 8.5g/dL, and leukocytosis with eosinophilia >8 times the upper limit of normal. Liver function tests and Helicobacter pylorii serum antibody were unremarkable. He had one year of nausea and emesis associated with egg consumption but denied abdominal pain, constipation, or signs of blood loss. He was referred to gastroenterology where a colonoscopy was unremarkable and esophagogastroduodenoscopy showed innumerable 3-7 mm semi-pedunculated polyps in the gastric antrum (Figure 1). The duodenal bulb was unremarkable other than a single 3-5 mm polyp. Pathology showed marked gastric eosinophilic infiltration and normal duodenal mucosa. EG was diagnosed and the patient was started on a six-food elimination diet and Prednisone 40 mg for 2 weeks followed by a taper. Repeat EGD at 1 month showed 75% reduction in polyp burden. His anemia and hypoalbuminemia continue to improve though ongoing surveillance has shown persistent mild disease.
Discussion: The most common presenting symptoms of EG are nausea, vomiting, and abdominal pain. Weight loss, failure to thrive, hypoalbuminemia, and iron deficiency anemia in EG have been reported but poorly characterized as malabsorptive complications. In patients such as this with symptomatic edema and anemia, it is important to consider EG as a mucosal infiltrative disease that can induce such a malabsorptive syndrome. The endoscopic findings in EG are variable and few prospective studies have elucidated the breadth of possible findings. Gastric pseudo-polyps have been described in case reports and are likely a high-severity feature of EG, correlating with this patient's manifestations. However, as normal mucosa or erythema are the most common findings, random biopsies are important in its diagnosis. Pseudo-polyps also prove a clinical challenge in this demographic as polyposis syndromes must be considered. Histopathologic evaluation and region of involvement are important differentiators of EG from polyposis syndromes.



[3587] **Figure 1.** Gastric antrum before (A) and after (B) treatment.

S3588

Eosinophilic Gastroenteritis and Colitis After Intragastric Balloon Placement

Jianyi Yin, MD, PhD[1], Eric Wu, MD[1], Jenny Jan, MD[1], Toby Gray, MD[2], Shawn Shah, MD[1], Ngozi Enwerem, MD[1].
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Introduction: Eosinophilic gastrointestinal diseases (EGIDs) are a group of rare disorders characterized by infiltration of eosinophils in the gastrointestinal tract. Hypersensitivity to food or environmental allergens is believed to play a pivotal role in the pathogenesis. Intragastric balloon (IGB) has been demonstrated as an effective and safe therapy for weight loss. Interestingly, a previous report described development of eosinophilic esophagitis (EoE) following IGB placement, suggesting a possible association between IGB and EGIDs.
Case Description/Methods: A 61-year-old male underwent endoscopic placement of an Orbera® intragastric balloon for weight reduction. Forty days later, he presented with a 3-day history of watery and non-bloody diarrhea, abdominal pain, and nausea. Labs were notable for severe peripheral eosinophilia over 15,000/mL. Extensive infectious workup were unremarkable. His IGB was removed as he had reached his goal weight. Then, he underwent esophagogastroduodenoscopy and flexible sigmoidoscopy with biopsy. Endoscopic exam was notable for diffuse erythema in the stomach and duodenum, and congestion in the colon. Histologically, dense inflammatory infiltration of eosinophils and plasma cells in the lamina propria was found in the stomach, duodenum, and colon. After removal of the IGB, his symptoms and peripheral eosinophilia improved rapidly, and were resolved completely within 1 month without need for immunomodulatory therapies or diet modifications.
Discussion: We describe a case of eosinophilic gastroenteritis and colitis with severe peripheral eosinophilia following IGB placement, in whom rapid resolution occurred after IGB removal without additional therapies. To our knowledge, this is the first case report that suggests a possible association between IGB and non-EoE EGIDs, which warrants clinicians' awareness and further studies.

S3589

Eosinophilic Gastroenteritis: A Rare Case of Unrelenting Strife

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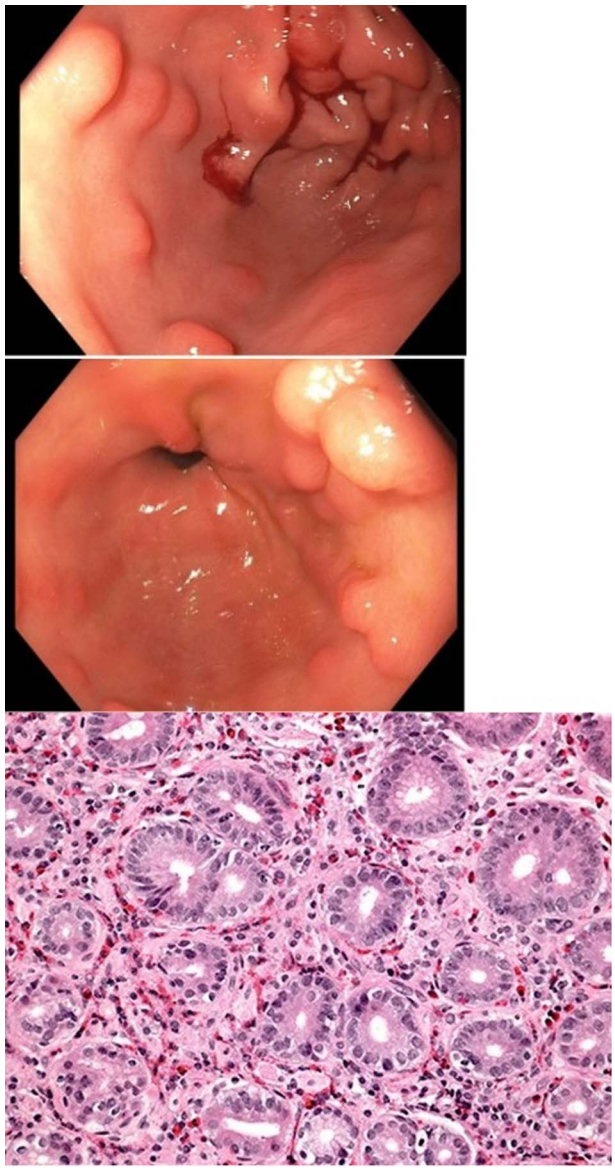
Introduction: Eosinophilic gastrointestinal diseases (EGIDs) are chronic, immune-mediated disorders characterized histologically by a pathologic increase in eosinophil-predominant tissue causing inflammation. Clinically, this group of disorders presents with chronic, non-specific gastrointestinal symptoms that can affect the entirety of the GI tract. Eosinophilic gastroenteritis specifically has a predilection for the distal antrum and proximal small bowel. In the literature, there are a small number of cases that describe eosinophilic gastroenteritis. We present a rare case of eosinophilic gastroenteritis, treated effectively with steroids leading to rapid clinical improvement.

Case Description/Methods: A 45 year-old female patient with a past medical history of obesity and uncontrolled hypothyroidism presented to our institution with a five-year history of abdominal pain, nausea, and diarrhea. Prior workup showed eosinophilia but had remained unaddressed. Imaging revealed diffuse wall thickening throughout the GI tract, concerning for IBD. Extensive lab testing showed hypereosinophilia but otherwise was unremarkable. EGD revealed nodularity in the antrum with diffuse erythematous appearance. Colonoscopy was remarkable for multiple polyps in all parts of the colon. Biopsies were done and pathologic evaluation showed prominent eosinophilic infiltration in the lamina propria of the antrum and proximal small bowel. Other causes of hypereosinophilia were ruled out and our patient was diagnosed with eosinophilic gastroenteritis. She was started on a combination of steroids, a leukotriene receptor antagonist, and a mast cell stabilizer leading to improvement in symptoms with good recovery. (Figure)

Discussion: The pathogenesis of eosinophilic gastrointestinal diseases is not well understood and has been studied as a hypersensitivity reaction. Infiltration of eosinophils can involve any layer of the GI tract with symptoms varying depending on depth and location of infiltration. EGIDs have been shown to persist through eosinophil-induced cytokine activation and release of eosinophil major basic protein. Therapy has not been standardized but involves steroid therapy along with various other medications and dietary modifications. Eosinophilic gastroenteritis should remain on the differential during the workup of patients with eosinophilia and GI manifestations.



[3589] **Figure 1.** Nodular appearance of the antrum with active oozing seen after biopsy. Figure 2: Pyloric view showing continued nodularity, consistent with eosinophilic gastritis. Figure 3: Hematoxylin and eosin staining showing eosinophilic infiltration of the lamina propria.

S3590

Emphysematous Gastritis

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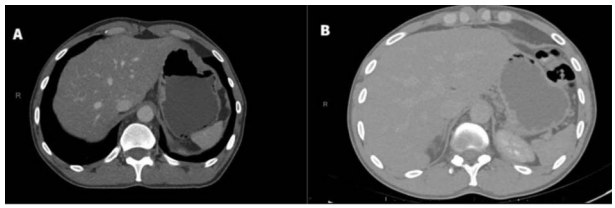
Introduction: Emphysematous gastritis is a rare and severe condition characterized by the presence of air and bacteria in the gastric wall. It usually presents with severe abdominal pain and diagnosed by presence of gas within the gastric wall on imaging. It has a high mortality rate of about 60-80%. Conservative management is the mainstay of treatment.
Case Description/Methods: A 36-year-old male with a past medical history of alcohol use disorder and major depressive disorder presented with severe diffuse abdominal pain with post-prandial worsening, intractable nausea, and vomiting. This was preceded by binge drinking of alcohol. He reported poor appetite over one month associated with 17lb weight loss and early satiety. No history of liver disease, peptic ulcer disease, excessive NSAID or aspirin use. He was tachycardic and normotensive. No signs or symptoms of overt GI bleeds. Physical exam was negative for guarding or tenderness. Labs were remarkable for lactic acidosis of 3.6 mmol/L with an anion gap of 21. Lipase and LFTs were normal. CT abdomen showed gastric emphysema and mild diffuse circumferential thickening with fat deposition through the cecum and sigmoid colon, suggestive of emphysematous gastritis. General surgery was consulted but recommended no acute surgical intervention. He was started on a clear liquid diet, pantoprazole drip, empiric IV Piperacillin-Tazobactam, pain medications, and IV fluids. EGD showed moderate gastritis, no necrosis, mild duodenitis. Biopsy showed mild chronic gastritis. Patient improved clinically and repeat CT abdomen in 2 days showed improvement in gastric emphysema. He was discharged with a 7-day course of oral Amoxicillin-Clavulanate and indefinite pantoprazole 40mg BID (Figure).
Discussion: Emphysematous gastritis starts with disruption of the integrity of gastric mucosa with secondary infection. Isolated organisms include *Streptococci, S. Aureus Enterococci, Clostridium, Klebsiella, Pseudomonas, E.Coli, Enterobacter*. Ischemia is an inciting event as seen in volvulus, SMA occlusion, acute gastric dilation. Mechanical causes include forceful emesis, gastric outlet obstruction, malignancy, and iatrogenic causes like gastrostomy or NG tube insertion, myotomy and biliary stents. Risk factors are alcohol use, NSAID and steroid use, cytotoxins, diabetes, abdominal surgery, and burns. Optimal conservative management with diet management, IV fluids, antibiotics has good outcomes as demonstrated by the above case and additional recent cases in literature.



[3590] **Figure 1.** A- Gastric emphysema and mild diffuse circumferential thickening with fat deposition through the cecum and sigmoid colon, suggestive of emphysematous gastritis B- Significantly decreased air locules along the periphery of the proximal gastric mucosa.

S3591

Eosinophilic Gastritis: An Unusual Cause of Chest Pain and Dyspepsia

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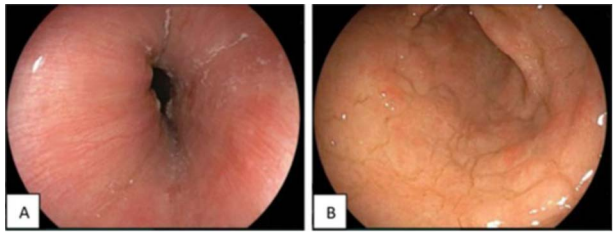
[1]University of South Alabama, Mobile, AL; [2]University of South Alabama College of Medicine, Mobile, AL.

Introduction: Eosinophilic gastrointestinal diseases (EGIDs) are chronic inflammatory diseases characterized by eosinophilic infiltration of the gastrointestinal tract without other known causes of eosinophilia. These are rare diseases which can affect patients of any age but typically present in the third through fifth decade. We present a case of a 30 year old female who presented with dyspepsia and chest discomfort who was found to have eosinophilic gastroenteritis.
Case Description/Methods: A 30 year old female presented to outpatient gastroenterology clinic after a recent ER visit for post-prandial chest discomfort with a negative cardiac workup. She reported a 1.5 year history of progressive dysphagia requiring regurgitation of solid foods, as well as epigastric pain and nausea. The patient was prescribed proton pump inhibitor therapy and scheduled for an esophagogastroduodenoscopy (EGD). Her EGD revealed an esophagus with linear furrows and exudate and diffuse hyperemic edematous gastric mucosa (Figure). Biopsies from both the esophageal and the gastric mucosa revealed elevated eosinophils. Peripheral eosinophils were measured and found to be elevated. Testing for other etiologies of eosinophilia, including inflammatory bowel disease and strongyloidiasis, were negative. The patient was started on steroids and had resolution of her symptoms. Repeat EGD showed no increase in eosinophils on biopsy. The patient was referred to allergy-immunology and had no improvement despite dietary modifications. While tapering steroids, she began having an increase in her previous symptoms along with flushing and hives. Given recurrence of symptoms, the patient was continued on the lowest dose of steroids tolerated and is transitioning to Dupilumab (Dupixent), an Interleukin-4 Receptor Antagonist.
Discussion: Clinical features of EGIDs vary and are related to the location, extent of organ involvement and layers of the GI tract with eosinophilic infiltration. Non-EoE EGIDs are rare, associated with allergic and atopic conditions, and typically affect female patients. Unlike EOE, other EGIDs do not have well defined diagnostic criteria or treatment algorithms. Management typically involves dietary therapy and glucocorticoids once other etiologies of esoinophilia have been evaluated. The pathogenesis of non-EoE EGIDs are not well known but thought to be similar to EOE. Dupixent was recently approved by the FDA as the first treatment for EOE but, to our knowledge, has not been studied in other EGIDs.



[3591] **Figure 1.** EGD revealed an esophagus with linear furrows and exudate (A) and diffuse hyperemic edematous gastric mucosa (B).

S3592

Eosinophilic Gastritis as a Differential Diagnosis in the Setting of Chronic Abdominal Pain

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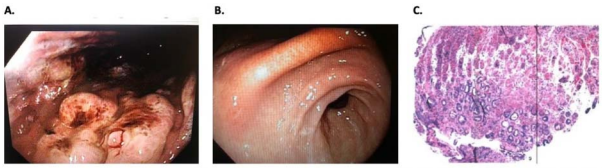
Introduction: Eosinophilic gastritis (EoG) is a rare entity, found in 9 to 28 per 100,000 individuals in the United States. It is characterized by eosinophilic infiltration of the bowel wall, causing symptoms that are nonspecific, leaving EoG often underdiagnosed and clinicians perplexed on the management of their patients.
Case Description/Methods: A 43 year old woman with asthma, GERD, and diabetes mellitus, presented with epigastric non radiating abdominal pain. She denied weight loss, nausea, vomiting, diarrhea or constipation. She doesn't smoke, drink alcohol or use recreational drugs. Her abdomen was soft and tender in epigastric area but otherwise unremarkable. Laboratory workup revealed a normal white blood cell count but with an elevated eosinophil count of 910 per uL. IgE level was also elevated 156 KU/L (normal< 100 KU/L). Abdominal ultrasound revealed cholelithiasis for which she had a cholecystectomy, however, her pain persisted. Subsequent upper endoscopy revealed erythematous gastric folds with diffuse erosions and prominent folds in the proximal body. The pathology from the antrum and body showed

prominent infiltration of eosinophils in the lamina propria and the glands, no parasites were identified. Immunostains for CD25 show no evidence of mast cell abnormalities and stains for Helicobacter pylori were negative. The food allergy panel was negative as well as repeated stool tests for ova and parasites. The patient was started on 40mg of prednisone for two weeks and her abdominal pain dramatically improved. (Figure)

Discussion: EoG is an inflammatory and immune mediated disorder characterized by the infiltration of eosinophils in the gastric mucosa. Clinical manifestations are variable and nonspecific. Laboratory tests are significant for elevated peripheral eosinophil count, and IgE level. Endoscopy is essential for diagnosis, with histology showing more than 30 eosinophils per HPF in at least 5HPFs in the absence of known associated causes of eosinophilia. Steroids are the mainstay of therapy, however, there is a high chance of disease recurrence after discontinuing steroids. Food-elimination diet has been tried with success. For induction and maintenance of remission, limited studies have shown that use of Immunosuppressive drugs, leukotriene inhibitors, and immunomodulators can be used. When routine workup and treatment for chronic abdominal pain is unrevealing, clinicians should consider EoG when pathological specimens show elevated eosinophils, and consider treatment with steroids.



[3592] **Figure 1.** A. Endoscopic view, Gastric body B. Endoscopic view, Gastric antrum C. Histology with prominent intramucosal eosinophils.

S3593

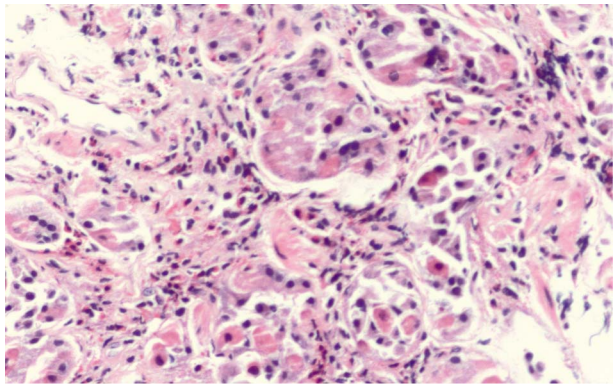
Eosinophilic Gastritis in Idiopathic Hypereosinophilic Syndrome: A Case Report

Ifrah Fatima, MD[1], Fouad S. Jaber, MD[1], Adel Muhanna, MD[1], Hanae Benchbani, MD[1], Quinton Palmer, MD[1], Husam Barakat, MD[2].
[1]University of Missouri-Kansas City, Kansas City, MO; [2]University Health/Truman Medical Center, Kansas City, MO.

Introduction: Idiopathic hypereosinophilic syndrome (IHES) is a group of myeloproliferative disorders causing multi-organ dysfunction with unknown etiology. We report a case of IHES in a patient presenting with gastric wall thickening, multiple organ damage including acute coronary syndrome, encephalopathy, and multiple cortical infarcts.

Case Description/Methods: A 47-year-old male patient with past medical history significant for type 2 diabetes mellitus and hypertension presented with nausea, vomiting, abdominal pain, and food intolerance for 7 days. He also complained of intermittent, substernal chest pain for 1-2 days at presentation. His labs were significant for elevated troponin of serum creatinine of 2.85mg/dL and significant leukocytosis (32.80 10^3/cmm). Absolute eosinophilic count was elevated at 14.70 10^3/cmm. Echocardiogram showed hypokinetic mid inferior and inferolateral walls. CT chest/abdomen angiogram was done for concerns of dissection. It showed diffuse gastric wall thickening with upper abdominal retroperitoneal lymphadenopathy and extensive retroperitoneal fat stranding. He was started on antiplatelet agent and heparin drip. Ischemic workup was deferred as troponin plateaued and patient had new-onset altered mental status. MRI brain showed numerous punctate cortical and subcortical foci of restricted diffusion consistent with acute watershed distribution infarcts. In view of possible need for dual anti-platelet therapy and the high concern for gastric malignancy on CT that required tissue biopsy, gastroenterology was consulted for esophagogastroduodenoscopy (EGD). It did not show any gastric mass but diffuse gastritis. Biopsy showed mild chronic gastritis and a focal area showing increased eosinophilic infiltration with eosinophilic cryptitis (Figure). An extensive workup for eosinophilia including infectious etiology returned negative. No secondary causes of hypereosinophilia were identified. Patient was started on 1mg/kg of prednisone with normalization of eosinophils to 0 within 24 hours. Steroids were tapered and patient improved clinically with resolution of altered mental status, abdominal pain, and chest pain. Follow-up EGD has been scheduled to re-evaluate eosinophilic deposits.

Discussion: The stomach biopsy showing eosinophilia was the key to diagnosis. Resolution of peripheral eosinophilia with steroids confirms the diagnosis in the absence of a secondary cause. A repeat EGD with biopsy is scheduled to look for histopathological resolution.



[3593] **Figure 1.** Gastric mucosa with increased eosinophilic infiltration within the lamina propria and focal glandular involvement with eosinophils.

S3594

Extramedullary Plasmacytoma in the Stomach Presenting With Massive GI Bleed

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Introduction: Multiple myeloma can rarely spread beyond the bone marrow and form an isolated plasmacytoma, which is a localized growth of plasma cells. We present a case of massive GI bleeding from a gastric plasmacytoma, a seldomly reported presentation for a plasmacytoma.

Case Description/Methods: A 63 year old female with COPD, presented with shortness of breath, weakness, and melena for 3-5 days. She presented ill-appearing and was hypotensive with initial labs revealing hemoglobin of 5 and an elevated BUN/Cr of 40/0.77. She was resuscitated with massive transfusions, given proton pump inhibitors and after she was stable, she had an EGD which revealed a large ulcerative mass with stigmata of recent bleeding in the fundus. She later had CT which also demonstrated a mass lesion with wall thickening of the fundus. After her bleeding subsided, a repeat EGD with biopsies revealed a CD20+ and CD138+ kappa restricted extramedullary plasmacytoma negative for H.pylori. She later was referred to oncology, where she had a bone marrow biopsy, which demonstrated 80-90% with diffuse plasma cells infiltration, consistent with a diagnosis of multiple myeloma. She was to start chemotherapy, however, she elected to obtain a second opinion at a tertiary care center.

Discussion: Multiple Myeloma is the production of malignant plasma cells in the bone marrow. Extramedullary spread has a reported incidence of 6-20%, and it can happen either through direct skeletal invasion (more commonly) or hematogenous spread. Hematogenously, it can involve any organ but more commonly the liver, kidney, or brain, and very rarely the GI tract. Symptoms depend on the GI organ involved but usually include nausea, vomiting, early satiety, and weight loss. As in our patient, GI bleeding is extremely rare and has only been reported as case reports. Endoscopically, gastric plasmacytomas have been reported to appear as ulcerated or polypoid masses. For diagnosis, histopathology needs to reveal a plasma cell clonal population by staining for CD138, the hallmark marker for plasma cells. For primary gastric plasmacytomas that do not involve other organs or the bone marrow, surgical and radiotherapy should be attempted, and few case reports have demonstrated good 5-year mortality. However, as

in our patient, who has multiple myeloma with the presence of bone marrow involvement, chemotherapy is the treatment of choice. We hope this case provides insight on GI bleeding from plasmacytomas and improves management for patients to come.

S3595

Gastric Glomus Tumors: Silent Until Ulcerated

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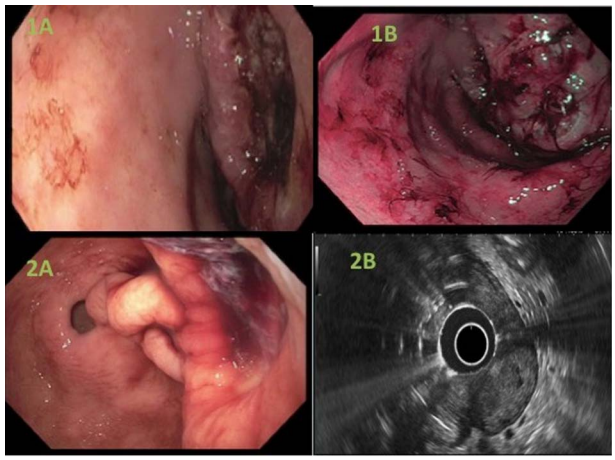
Introduction: Glomus tumors are rare and mostly benign mesenchymal neoplasms comprising fewer than 2% of all soft tissue tumors. They arise from the modified smooth muscle cells (glomus cells) of the glomus body, an arteriovenous shunt typically found in peripheral soft tissue of the extremities. Rarely, glomus tumors can occur in the gastrointestinal (GI) tract, where they arise from the submucosa or muscularis propria. We present two interesting cases of gastric glomus tumor (GGT) with different clinical outcomes.
Case Description/Methods: A 46-year-old female presented with shortness of breath and fatigue for 3 months. Labs showed iron deficiency anemia with a hemoglobin of 4.4 gm/dl. Esophagogastroduodenoscopy (EGD) revealed a large, ulcerated, partially circumferential mass in the gastric (Figure 1A, 1B) Imaging showed a solid 7.8 cm mass in the gastric antrum with multiple hepatic metastases. Gastric biopsy showed glomus tumor, with a positive smooth muscle actin (SMA) stain and abundant background necrosis. Liver biopsy also confirmed metastasis of the glomus tumor. Patient is currently undergoing chemotherapy to downsize the primary tumor before surgical intervention. A 72-year-old female with a history of breast cancer was admitted with hematemesis and melena. EGD revealed a large submucosal ulcerated gastric mass with signs of bleeding. Endoscopic ultrasound (EUS) showed the mass was arising from the muscularis propria, in the antrum of the stomach (Figure 2A, 2B) Fine needle aspiration was performed which expressed only synaptophysin (Syn), suggestive of gastric neuroendocrine tumor. Patient underwent an exploratory laparotomy and distal gastrectomy for continued GI bleeding. The tumor was sent for surgical pathology, which expressed both smooth muscle actin and Syn, confirming glomus tumor. The patient was stable following gastrectomy.
Discussion: GGTs account for approximately 1% of all GI mesenchymal tumors and are difficult to differentiate from other richly vascularized tumors, such as gastrointestinal stromal tumor (GIST). The definitive diagnosis relies on EGD, histopathologic examination with immunohistochemical staining and EUS-guided fine-needle aspiration. Glomus tumor cells stain positive for SMA and vimentin, while Syn and CD34 can be positive in some cases. Surgical resection is the treatment of choice and offers a favourable prognosis. Metastatic spread as seen in one of our cases is extremely rare. There are no standard of care chemotherapeutic regimens for treatment of GGTs.



[3595] **Figure 1.** Two gastric glomus tumors seen on esophagogastroduodenoscopy (EGD) and endoscopic ultrasound (EUS).

S3596

Extremely Rare Case of Plasmablastic Lymphoma in a HIV-Negative, Immunocompetent, EBV-Positive Patient

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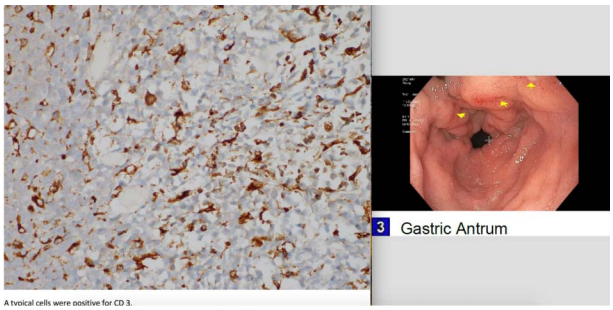
Introduction: Plasmablastic lymphoma (PBL) is a rare and aggressive large B-cell lymphoma commonly diagnosed in the oral cavity in patients with human immunodeficiency viruses(HIV), however, it has been occasionally seen in patients who are immunocompromised as well as with EBV (Epstein-Barr virus). About 95 percent of the world's population is affected by EBV and in most cases, causes no symptoms to minor non-specific symptoms to infectious mononucleosis. Infected individuals become lifetime asymptomatic carriers and in some very extreme cases, these carriers develop EBV-positive plasmablastic lymphoma. PBL in an immunocompetent patient is rare and when present most often is seen in the gastrointestinal (GI) tract. When present in the GI tract, most cases present with B-symptoms.
Case Description/Methods: The patient is a healthy 61-year-old female with a history of GERD who presented with complaints of 4 weeks of fevers, nausea, vomiting, epigastric pain, poor appetite with 20 pounds of unintentional weight loss. On physical exam, the patient was afebrile and tachycardic. She had epigastric tenderness and splenomegaly. Initial laboratory testing showed the following: Hemoglobin 5.9 g/dL, White blood cell 8.25 k/uL, platelets 85 k/uL, aspartate aminotransferase 142 U/L, alanine aminotransferase 61 U/L, alkaline phosphatase 220 U/L, total bilirubin 10.7 mg/dL, prothrombin time 34.3 seconds, fibrinogen 95 mg/dL, and d-dimer 6.5 ug/mL. CT (computed tomography) of the chest, abdomen, and pelvis showed diffuse fatty infiltration of the liver, grossly enlarged liver, and mild upper abdominal and retroperitoneal adenopathy. Infectious work up for HIV (human immunodeficiency virus) negative Hepatitis C virus weakly positive. EBV positive. Esophagogastroduodenoscopy was done and gastric body biopsy showed fundic type mucosa showing infiltration of the lamina propria by monomorphic large atypical cells with a moderate amount of cytoplasm, eccentric nuclei, and prominent nucleoli, consistent with high-grade lymphoma. Atypical cells are CD3 positive (>50%) and negative for CD20 and CD30. Bone marrow biopsy showed plasmablastic lymphoma, 80-90% involvement of bone marrow. (Figure)
Discussion: PBL is a rare and aggressive lymphoma with a poor prognosis. Five-year survival rate recorded no more than 33.5%. It requires a high level of suspicion and awareness both by physicians and pathologists to diagnose and treat. No chemotherapy regimen is considered a standard of care for PBL at this time.



[3596] **Figure 1.** Atypical cells positive for CD3.

S3597

Extensive Gastric Mucormycosis in a Patient With Newly Diagnosed Diffuse Large B-Cell Lymphoma of the Stomach

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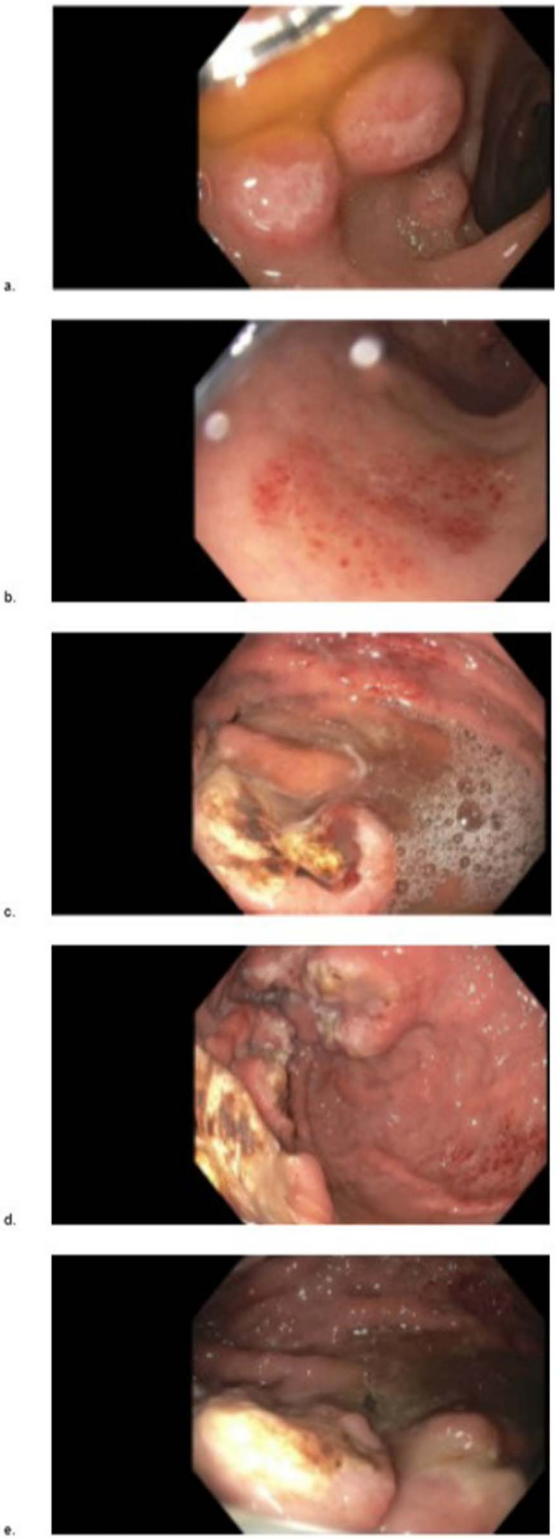
Introduction: Non-Hodgkin's lymphoma (NHL) affects the gastrointestinal tract in 10 to 15 percent of the cases. Mucormycosis in the gastrointestinal tract is rare and may cause severe infection in immunocompromised patients with hematological malignancy. We present a case of newly diagnosed diffuse large B-cell lymphoma (DLBCL) with malignant masses in the stomach and extensive ulcerations with mucormycosis.
Case Description/Methods: A 62 year-old man with a history of hypertension presented with left abdominal pain and weight loss, associated with decreased appetite. Abdominal exam unremarkable, but there was a nontender left supraclavicular mass. Initial labs revealed mild microcytic anemia with elevated ferritin and C-reactive protein. Computed tomography showed multiple lymphadenopathy above and below the diaphragm with gastric wall thickening at the fundus. Upper endoscopy revealed multiple duodenal nodules, mucosal inflammation at the antrum and multiple masses with non-bleeding deep ulcers at the fundus (Figure). Biopsy revealed CD20 positive large atypical cells with flow cytometry confirming the diagnosis of DLBCL with germinal center type. Fluorescent in situ histochemistry (FISH) was negative for double-hit lymphoma. Biopsy of the ulcers also showed Mucorales identified by GMS and PAS-D stains. Patient was started on posaconazole prior to initiation of chemotherapy with R-CHOP.
Discussion: The stomach is the most common gastrointestinal location of extranodal NHL. Diagnosis is confirmed by immunohistochemistry or flow cytometry. Germinal center B cell (GCB) is associated with a favorable prognosis. FISH is used to rule out double or triple-hit high-grade lymphoma with MYC and BCL2 and/or BCL6 rearrangements. Standard treatment consists of six cycles of R-CHOP (rituximab, cyclophosphamide, doxorubicin, vincristine, prednisone) with 60 percent cure rate in patients with DLBCL. Mucormycosis is caused by mold found in decaying vegetation and soil. Immunocompromised hosts are at risk of potentially fatal angioinvasive infection with local ischemia, necrosis and deep ulcerations. Gastrointestinal mucormycosis occurs in only 7% of reported cases, most commonly affecting the stomach. Empiric treatment with polyene antifungal is necessary. Surgical resection may be needed if there is massive bleeding or impending perforation. Delaying treatment increases mortality by two-fold. Early diagnosis and treatment of mucormycosis is imperative for successful outcome.

Figure 1



[3597] **Figure 1.** Endoscopic findings in the stomach; a. 5-8 mm nodular masses at the duodenal bulb; b. Scattered mucosal inflammation at the gastric antrum; c, d & e. Malignant mass with ulceration at the gastric fundus.

S3598

Esophageal and Gastric Adenocarcinoma with Concurrent Basal Cell Carcinoma

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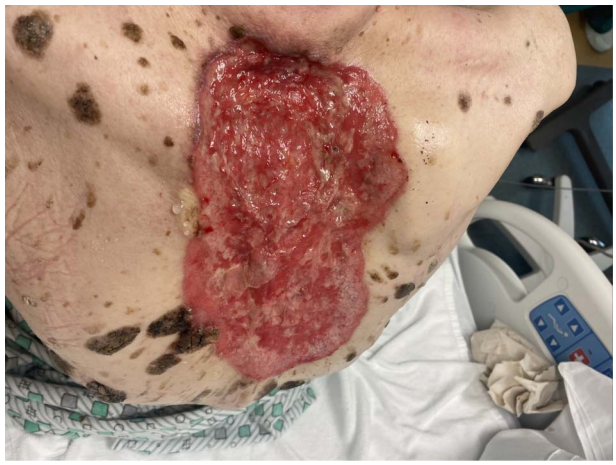
Introduction: Basal cell carcinoma (BCC) is one of the most common skin cancers that affects one in five patients in the United States. If diagnosed early it has great prognosis however with delay in recognition and treatment it can lead to advancement in the disease and overall increased mortality. One such complication is progression to other cancers such as breast, colon, prostate, and blood. We present a rare case of basal cell carcinoma with advanced esophageal and gastric adenocarcinoma (GAC).
Case Description/Methods: 75-year-old male with no prior medical history presented to the hospital for evaluation of dysphagia with solid foods and unintentional weight loss of 40 to 50 pounds over 3 to 4 months. He also complained of multiple seborrheic keratosis lesions on his back, upper and lower extremities. CT of chest and abdomen revealed bulky mass within the cardia of the stomach involving the distal esophagus. Gastroenterology were consulted who performed upper endoscopy which revealed malignant esophageal tumor in the middle third of the esophagus and the lower third of esophagus. Biopsy of the mass revealed invasive differentiated adenocarcinoma. Biopsies of the diffuse seborrheic keratosis with multiple fungating lesions were taken which were significant for basal cell carcinoma, infiltrative type, extending to deep and lateral margins. Oncology were consulted who recommended PET scan in the outpatient setting to evaluate extent of metastatic disease and palliative care consult regarding overall poor prognosis. (Figure)
Discussion: Surveillance of BCC is essential as it has high morbidity because of its local destruction, metastasis, and proximity to vital organs. Treatment for BCC involves multiple modalities including therapeutic treatment, surgical methods, and traditional chemotherapies. However, due to the rarity of the malignancy systematic trials are sparce and no superior treatment modality exists. Diagnosis of GAC imposed a considerable challenge in evaluation and treatment of this patient. GAC has a median survival of only 9-10 months in advanced disease and multidisciplinary treatment is paramount in treatment selection. Surgical resection has been shown to reduce mortality in early stages of the cancer. The patient in the case had poorly differentiated adenocarcinoma in the gastric cardia as well as esophagus requiring further workup for treatment guidance. However, due to poor prognosis he eventually elected for hospice which is a common outcome for patients with concurrent cancers.



[3598] **Figure 1.** Advanced Basal Cell Carcinoma.

S3599

Gastric Cancer Presenting With Bilateral Ureteral Obstruction

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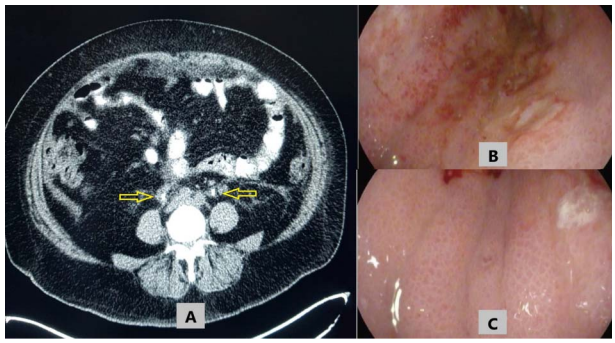
Introduction: Ureteral obstruction can occur due to metastases in patients with pelvic malignancy. However, its occurrence in non-pelvic malignancies, e.g., gastric cancer, is very rare and has a poor prognosis. Here, we report a patient who initially presented with bilateral ureteral obstruction and was subsequently diagnosed with gastric cancer.
Case Description/Methods: A 58-year-old female patient with a history of diabetes mellitus and hypertension presented to the hospital due to bilateral flank pain and anuria; she also reported early satiety and non-intentional weight loss of 10 kgs. Her physical examination was remarkable for bilateral flank tenderness. Blood tests showed creatinine of 656.96 umol/L and urea of 16.9 mmol/L. Her baseline creatinine was normal. Renal ultrasound revealed bilateral hydronephrosis. CT of the abdomen with contrast was notable for bilateral hydronephrosis with no renal or ureteric stones, and diffuse thickening of the stomach wall with omental nodules and ascites. She underwent bilateral double J-stent placement (Figure a), and subsequently, her kidney function improved. EGD (Figure b,c) showed edematous and thickened gastric mucosal folds that didn't flatten with insufflation. Gastric histopathological examination reported poorly differentiated adenocarcinoma (MMR intact, and negative for HER2/neu and H. pylori). Furthermore, PET scan revealed metastatic lymph nodes above and below the diaphragm with peritoneal involvement. The patient was started on FOLFOX chemotherapy regimen and Nivolumab. A follow-up abdominal CT scan after she received five cycles of chemotherapy showed moderate tumor regression.
Discussion: Here, we described a patient with gastric cancer that presented with bilateral ureteral obstruction. Different mechanisms for ureteral obstruction in gastric cancer have been described. One of the mechanisms is the direct extension of the primary tumor, peritoneal deposits or lymph nodes to the ureters. Other mechanisms include retroperitoneal fibrosis as a reaction to the malignant cells and distant metastases to the ureter from the primary gastric tumor. In our patient, the most likely etiology of the ureteral obstruction is an extension of the peritoneal metastases to the ureter. Our case provides an example of an unusual clinical presentation of gastric cancer and adds to the growing literature about acute bilateral obstructive uropathy as an initial presentation of gastric cancer. Physicians should be aware of such a rare presentation of gastric cancer.



[3599] **Figure 1.** A) Computed Tomography scan image demonstrating the thickened ureters (yellow arrows) mainly on the right side with the double J-stents seen inside their lumen. Endoscopic images of the gastric body (B, C) demonstrate thickened, edematous gastric mucosal folds, with a waffle-like appearance, that did not flatten with insufflation consistent with linitis plastica.

S3600

Gastric Crohn's Disease

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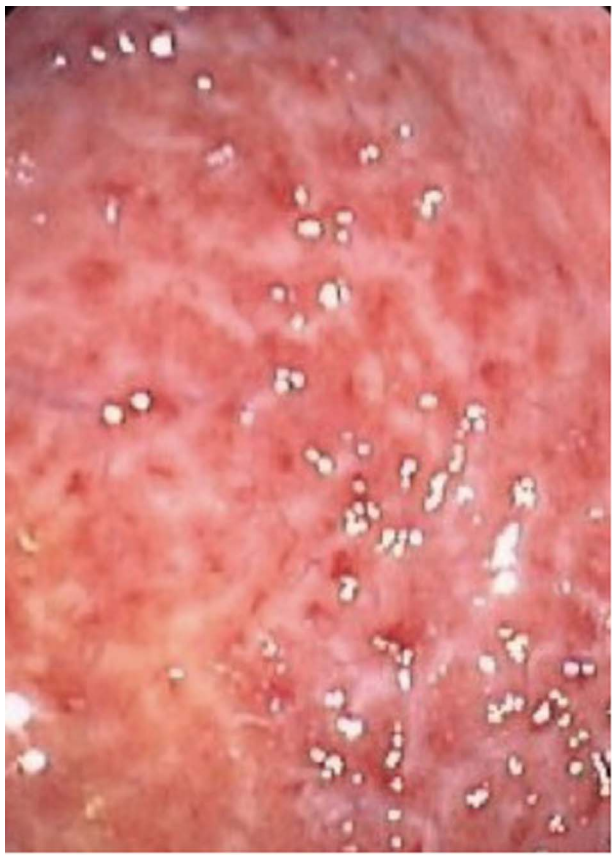
Introduction: Crohn's disease is an idiopathic transmural, segmental inflammatory disease of the gastrointestinal tract mostly involving the small intestine, colon, and anorectal region. We report a very rare case of isolated gastric Crohn's disease (GCD).
Case Description/Methods: A 26-year-old African- American male was referred to the outpatient gastroenterology clinic for a complaint of worsening dyspepsia, nausea, and vomiting for a year. The patient received a 16-week course of pantoprazole with partial relief. The preliminary laboratory workup for the patient was negative. The upper endoscopy of the patient revealed gastritis in the antrum of the stomach and a biopsy revealed non-caseating granuloma with giant cells. Helicobacter pylori test was negative and the serological test was negative for anti-saccharomyces cerevisiae antibody. The chest X-ray of the patient was normal. A barium follow-through and a colonoscopy of the patient were normal. After ruling out other causes of granulomatous gastritis a diagnosis of isolated gastric Crohn's disease was made. The patient was started on oral steroids and his dyspepsia completely resolved in the 3 months follow-up. A repeat endoscopy after 6 months revealed resolution of gastritis and a biopsy revealed no granulomas. The diagnosis of Crohn's disease in typical presentations is made based on a combination of clinical, laboratory, endoscopic and pathological findings. In our case, the patient had an atypical presentation and ASCA was negative. In such cases, other possible etiologies like Helicobacter pylori infection, tuberculosis, eosinophilic gastritis, sarcoidosis, and lymphoma must be ruled out for establishing the diagnosis. (Figure)
Discussion: Patients with GCD generally present with epigastric pain, nausea, and vomiting and an upper endoscopy generally shows diffuse inflammation and granular lesions. It is important to keep GCD as a differential diagnosis for young patients who present with dyspepsia-like symptoms and don't respond to proton pump therapy.



[3600] **Figure 1.** The image shows granulomatous gastritis on the upper endoscopy.

S3601

Gastric Inflammatory Myofibroblastic Tumor Presenting as Chronic Abdominal Pain in a Young Female

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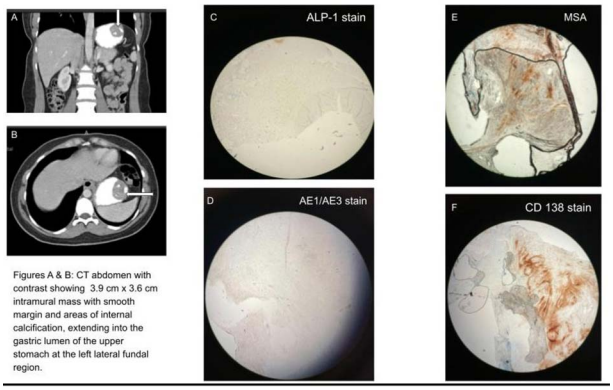
Introduction: Inflammatory Myofibroblastic Tumor (IMT) is a rare mesenchymal tumor, commonly seen in children and adolescents. Lung is the most common site. Here we present an extremely rare case of a gastric IMT in a 28 year old lady.
Case Description/Methods: Pt presented with intermittent epigastric pain for 8 years. This was associated with bloating and regurgitation and weight loss.These symptoms worsened along with new symptoms of chest pain, Cardiology workup was unremarkable. CT abdomen with contrast ordered to investigate further revealed 3.9 cm x 3.6 cm intramural mass with smooth margin and areas of internal calcification, extending into the gastric lumen of the upper stomach at the left lateral fundal region. Pt was referred to a local gastroenterologist. EGD performed showed confirmation of the lesion. Pt was referred to surgical oncologist at tertiary care hospital. EGD performed with biopsy of the lesion showed Benign gastric mucosa with small separate fragment of gastric mucosa containing smooth muscle-like tissue consistent with a tangentially section muscularis mucosa vs benign smooth muscle mass. Given the inconclusive diagnosis, partial gastrectomy was performed after detailed discussion with the patient. Gross pathology showed a submucosal mass, corresponding to the serosa lesion, measuring 4.3 x 4.2 x 3.7 cm. Microscopic pathology showed spindle cells with variable Cellularity with prominent lymphoplasmacytic infiltrates along with dystrophic calcification and osseous metaplasia. There is regional expression of ALK-1,and regional subserosal expression of SMA and MSA. Lesional cells do not express CD117, DOG-1, and desmin. The immunoprofile supports interpretation of IMT. Patient was seen eight months post surgery with resolution of all the symptoms. (Figure)
Discussion: Primary gastric IMT is extremely rare. There have been a handful of cases in literature. Gastric IMT is most commonly associated with abdominal pain and upper GI bleeding. Most common treatment is partial gastrectomy. There is some potential of IMT to turn into malignancy. IMT are associated with high local recurrence rates. There are no guidelines on surveillance though common consensus is to perform EGD 6 months to a year initially followed by increasing the interval later. As GI clinicians, we should be aware of these symptoms associated with IMT.



[3601] **Figure 1.** CT images and Histology.

S3602

Gastric Outlet Obstruction Secondary to Metastatic Breast Carcinoma 25 Years After Initial Diagnosis: A Mimic of Primary Gastric Carcinoma

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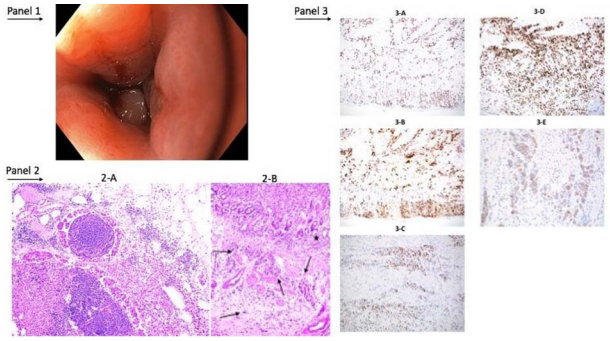
Introduction: Breast cancer is the most common cancer in women with a yearly incidence rate of 43.1 per 100,000 women. While bone, lung, liver, and brain are the most common sites of distant metastasis, gastric metastasis is exceedingly rare, occurring in only 0.3% of cases. This case of breast carcinoma metastatic to the stomach occurred 25 years after initial diagnosis- a length of time not documented in the literature.
Case Description/Methods: A 71-year-old female with a history of breast cancer, diagnosed and treated 25 years prior (considered disease free), presented with nausea, vomiting and weight loss. Initial esophagogastroduodenoscopy (EGD) revealed gastric outlet obstruction with circumferential thickening at the antrum (Panel 1) and later endoscopic mucosal resection (EMR) was performed, but a definitive diagnosis was unable to be made from this specimen. Surgical specimen from Billroth II showed a poorly cohesive carcinoma involving all layers of the stomach with lymph node metastasis (Panel 2). The histopathology (Panel 3) ruled out gynecologic and intestinal malignancy and matched the previous profile from the patient's previous breast cancer 25 years prior. No concurrent breast primary site was found on subsequent workup. Thus, a diagnosis of chronologically late metastatic breast cancer to the stomach was made.
Discussion: One of the challenges in evaluation of metastatic carcinoma to the stomach is obtaining an adequate biopsy of diagnostic quality. Given that the foci of metastases may be within the gastric wall or even confined to the subserosa or serosa, a surgical specimen may be required to obtain a sample of optimal quality. This was true in the case of our patient where even EMR specimen showed focal involvement and surgical resection was diagnostic. Since breast cancer accounts for over a quarter of cases of gastric metastatic cancer, it is important for both clinicians and pathologists to have a high level of suspicion since ancillary immunohistochemical studies are often required to make the diagnosis. Unique features of this case include absence of a concurrent breast lesion and long time to recurrence of 25 years. Literature review revealed this to be the longest time from diagnosis of primary breast cancer to distant metastasis in the stomach documented, illustrating the importance of not only a thorough history, but of clinical correlation for both pathologists and clinicians.



[3602] **Figure 1.** Panels 1-3: Panel 1: Circumferential thickening at the level of the level of the gastric antrum. Panel 2 A-B (both hematoxylin and eosin at 10X magnification): A: Breast carcinoma located in the subcapsular space of lymph node; B: Poorly cohesive breast carcinoma in the submucosa, splitting the muscularis mucosa (arrows) and very focally in the mucosa (star). Panel 3A-E (all

10X magnification except E-cadherin at 20X): Carcinoma is positive for A: GATA3; B: Mammaglobin; C: Estrogen receptor; D: Progesterone receptor; E: E-Cadherin, confirming metastatic breast ductal adenocarcinoma.

S3603

Gastrointestinal Manifestations of Post-Transplant Lymphoproliferative Disorder Following Solid Organ Transplant: A Case Series

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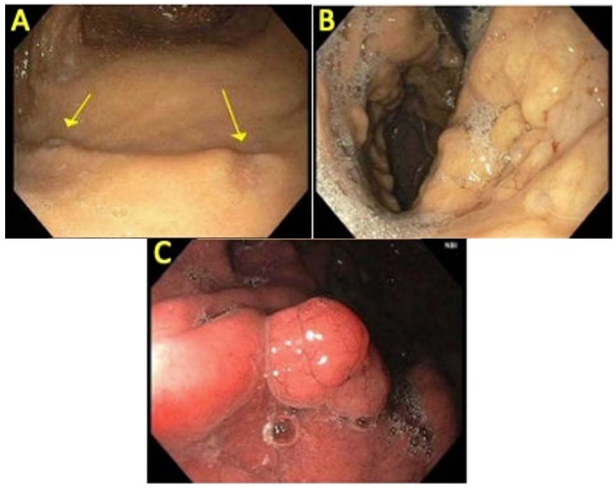
Introduction: Post-Transplant Lymphoproliferative Disorder (PTLD) is a potentially fatal complication of solid organ transplant that occurs in the context of immunosuppression. Increased risk of PTLD is associated with the type of transplanted organ, immunosuppressive regimen and positive EBV status. It commonly presents as lymphadenopathy, fevers, chills, night sweats and weight loss. Gastrointestinal (GI) symptoms may be the primary presenting feature of PTLD. We present 3 cases of PTLD at various intervals following solid organ transplant with differing GI manifestations and involvement of the GI tract.
Case Description/Methods: Case 1 A 58-year-old male 15 years after renal transplant presented with 1 week of fatigue, dark stools, and weight loss. Labs included Hgb 8.8 g/dl, ALP 252 IU/L, ALT 51 IU/L, AST 58 IU/L. EGD revealed multiple umbilicated lesions in the gastric antrum and patchy nodular mucosa in the cardia, fundus, and body (Figure). Biopsy was consistent with monomorphic PTLD, diffuse large B-cell lymphoma (DLBCL). Computed tomography (CT) revealed numerous hypodense hepatic lesions consistent with metastasis. Case 2 A 57-year-old male 6 years after pancreas transplant presented to the GI clinic with 1 month of worsening postprandial abdominal pain. CT showed a 6mm small bowel circumferential mass and mesenteric lymphadenitis. Seven days later he presented with worsening pain, nausea, and vomiting. CT showed small bowel obstruction. Laparotomy with resection of the strictured small bowel and excision of mesenteric lymph nodes was performed. Biopsy the lymph nodes and 2 raised, ulcerated lesions in the bowel showed monomorphic PTLD, DLBCL. Case 3 A 13-year-old male 1 month after small bowel transplant presented with fevers, back and abdominal pain. CT showed mesenteric and retroperitoneal lymphadenopathy, wall thickening of the transplanted bowel and hepatomegaly. EGD showed ileal mucosal congestion, however biopsies were negative for PTLD. Retroperitoneal and axillary lymph node biopsy showed polymorphic PTLD. EBV viral load was increased at 330000 copies/mL. For patient treatment and outcomes see Table.
Discussion: This series illustrates that early and late PTLD can present with predominantly GI manifestations including abdominal pain, bleeding, and obstruction. Clinicians should exercise a high clinical suspicion for PTLD in patients with GI symptomatology in the post-transplant setting. Prompt endoscopic evaluation and biopsy is necessary to classify diagnosis for appropriate treatment.



[3603] **Figure 1.** Multiple umbilicated lesions in the gastric antrum (A), patchy nodular mucosa in the gastric lesser curvature (B) and gastric body (C).

Table 1. Treatment and outcomes of three patients with PTLD following solid organ transplant

Case	1	2	3
Immunosupressive regimen at diagnosis	Mycophenolate Mofetil Tacrolimus	Azathioprine Tacrolimus	Tacrolimus Sirolimus
Recipient EBV Status	-	-	+
Recipient CMV Status	-	-	+
Treatment	Rituximab Cyclophosphamide Hydroxydaunorubicin Vincristine Prednisone Reduction in immunosupression	Rituximab Reduction in immunosupression	Rituximab Cyclophosphamide Prednisone Valganciclovir Reduction in immunosupression
Outcome	Alive, chemotherapy complicated by neutropenic fever, improvement in abdominal symptoms and size of liver metastases on imaging.	Alive, no symptoms or residual disease at 1 month follow up positron emission tomography scan.	Alive, screening colonoscopies unremarkable for graft rejection. No recurrence of PTLD.

S3604

Gastric Plasmacytoma: A Rare Entity Presenting as Profound Anemia

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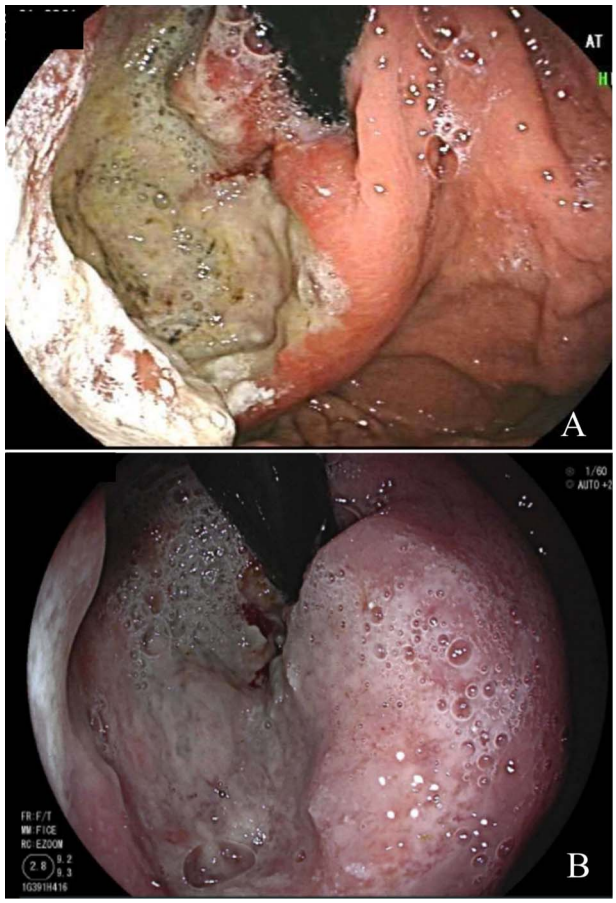
Introduction: Plasmacytoma is defined as a neoplasm of plasma cells in a patient who does not meet criteria for Multiple Myeloma. Roughly 450 plasmacytomas are diagnosed annually in the United States. Extramedullary plasmacytoma, which occurs outside the bone, is rare, accounting for < 5% of all plasma cell neoplasms. They are most commonly found in the upper aerodigestive tract. Gastric Plasmacytoma is an even rarer entity – this case report will detail the discovery and workup of such a lesion.
Case Description/Methods: Patient is a 76-year-old male with history of coronary artery disease and remote prostate cancer who presented to our hospital in December 2021 with complaint of shortness of breath, chest discomfort, fatigue, and 15-pound weight loss in the last three months. Labs notable for hemoglobin level of 3.7g/dL (baseline ~12 with microcytosis several years prior) with low iron and transferrin saturation. Gastroenterology was consulted and performed bi-directional endoscopy. Colonoscopy was unremarkable, but EGD showed a large, ulcerated mass in the gastric cardia without active bleeding (Figure). Biopsy was obtained, with pathology showing a plasma cell infiltrate. Advanced testing at Mayo Clinic, Rochester ruled out B-cell lymphoma and MALT lymphoma – it instead confirmed

monotypic kappa immunoglobulin consistent with a plasmacytoma as well as TP53 & 13q deletions. Additional tests including SPEP, UPEP, and bone marrow biopsy were all negative, which ruled out Multiple Myeloma. PET/CT showed abnormal hypermetabolic activity in the expected area of the stomach only, thus confirming solitary gastric plasmacytoma. Patient completed full course of radiation therapy, with repeat endoscopy pending.

Discussion: Gastric Plasmacytoma is a rare entity. It is most often found in men at median age of 55 years. Patients often present with weight loss, vague epigastric pain/discomfort, and/or gastrointestinal bleeding. Tumor appearance can vary from a simple ulcer to an ulcerated mass. They can occasionally be seen on imaging, but there are no radiographic features to distinguish from other tumors. Diagnosis depends on comprehensive histopathologic examination of a tissue sample. 10-year survival rate is high. There is no standard treatment method. It usually responds well to radiation therapy, but sometimes requires endoscopic or surgical resection. We presented this case due to rarity of the condition and to thus raise awareness for consideration in a differential diagnosis under applicable conditions.



[3604] **Figure 1.** Plasmacytoma in the gastric cardia visualized as a large, ulcerated mass at time of discovery (A) and three months later for bleeding surveillance (B).

S3605

Gastrointestinal Stromal Tumor Presenting as a Fistulizing Cavitary Lesion

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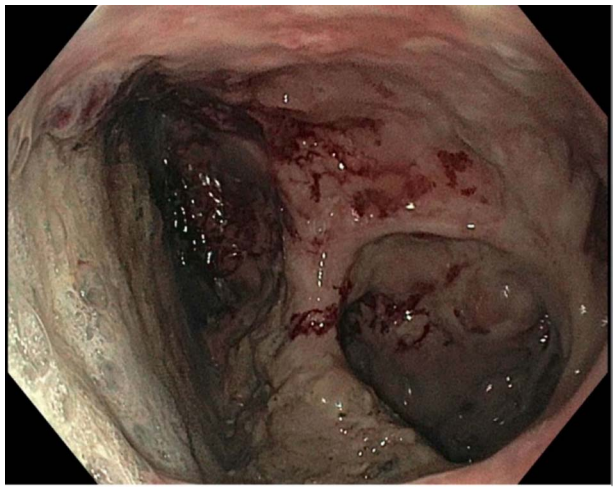
Introduction: Gastrointestinal stromal tumors (GISTs) are the most common mesenchymal neoplasms of the stomach. GISTs can vary from small, asymptomatic lesions managed with surveillance to large lesions presenting with life-threatening complications, including gastrointestinal hemorrhage. Complications such cavitary lesions and luminal GI fistulas have been reported but are exceedingly rare.

Case Description/Methods: A 65 year-old woman developed mild, constant abdominal pain. Her past medical history includes HTN, GERD, COPD and 50 pack-year smoking history. One month after symptom onset, she was admitted to an outside hospital with upper GI bleed. EGD was reportedly normal at that time. She was readmitted one month later with recurrent anemia. CT scan showed a large gastric diverticulum or possible cavitary lesion. EGD was repeated and showed an opening to a large diverticulum or cavity distal to the gastroesophageal junction with ulcerated cavity wall. Pathology showed ulcerated gastric mucosa and granulation tissue with atypical spindle cells. Biopsies were negative for H. pylori. She was then admitted to our hospital for severe anemia and work-up of suspected GIST. A third EGD showed a 2 cm fistula to a 10 cm necrotic cavity on the fundus and proximal greater curvature of the gastric body. Multiple biopsies of the cavity wall were taken. Biopsies were positive for spindle cell-type GIST (CD117+, CD34+, Cam 5.2-). She then had a feeding jejunostomy placed due to difficulty tolerating PO intake. She was treated with pantoprazole and imatinib and discharged with Medical Oncology and Surgery follow-up for resection. (Figure)

Discussion: The most common site of origin for GISTs is the stomach. Radiographic appearance is variable and can include endoluminal, exophytic or dumbbell-shaped pattern and there is frequently necrosis. Other imaging findings include calcifications, cyst formation, cystic degeneration and rarely, cavitary lesions and fistulas. In fact, there are only 2 case reports in the last 10 years of GISTs presenting as a gastric fistula or a gastrobronchial fistula. CT findings including: hemorrhage, necrosis, calcifications, intralesional cavitation, cystic degeneration, size >10cm, irregular margins and heterogeneous enhancement all portend a poor prognosis. Enlarged feeding or draining vessels can predict relapse. Our patient's case shows that it is important to have a high index of suspicion for diagnosis of GIST, particularly in the setting of atypical presentation.



[3605] **Figure 1.** Upper GI endoscopy image of the interior of the GIST cavity.

S3606

Gastrointestinal Manifestations of Polyarteritis Nodosa

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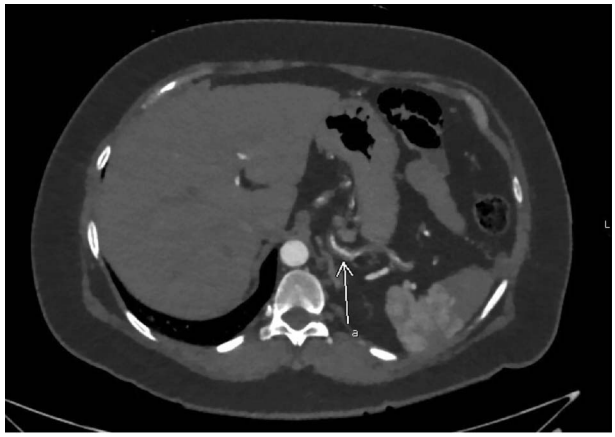
Introduction: Polyarteritis Nodosa (PAN) most typically affects medium and small sized vessels. It usually presents with non-specific symptoms of fatigue, myalgia and arthralgias; however, vasculitis is a late presentation. As it commonly involves vital organs such as GI tract and kidneys, delay in treatment can have a high mortality rate due to potential ischemia or micro aneurysmal rupture.
Case Description/Methods: A 50 year old female with history of smoking presented with sharp abdominal pain radiating to left upper quadrant and back. She denied any associated nausea/vomiting or constipation but reported joint pain in toes and fingers, and nodules in her pubic area. Physical exam was remarkable for palpable non-tender raised skin nodule on suprapubic region. Laboratory analysis was significant for elevated rheumatoid factor at 78, mildly elevated ESR 36 and CRP 13.8, complement C3 C4 within normal limits, negative Hepatitis B, C, and negative ANCA and ANA. Biopsy of the suprapubic nodule showed a hemorrhagic nodule with organizing abscess. A CT of abdomen and pelvis revealed a 7.2 x 2.9 x 6.6 cm splenic infarct, perivascular infiltration in the celiac artery extending to common hepatic artery and short gastric artery. The distribution of vessel involvement along the branches of celiac artery suggested PAN. The patient received pulse dose steroids with IV methylprednisone for 3 days. She was discharged on prednisone taper and started on Cyclophosphamide therapy outpatient which resulted in symptomatic improvement. (Figure)
Discussion: PAN has a predilection for skin, peripheral nerves, GI tract and the kidneys. A classic GI manifestation is mesenteric vasculitis leading to transmural necrotizing inflammation and bowel ischemia. The pathological changes of PAN are limited to the arterial system favoring branch point and thus can be detected with CT or angiography, which is a gold standard for assessment with a sensitivity of 89% and a specificity of 90%. Our case demonstrates a rare complication of PAN vasculitis. Vascular imaging demonstrated celiac trunk involvement that extended into splenic artery leading to subcapsular splenic infarction whereas mesenteric, common hepatic and bilateral renal arteries appeared patent. Timely diagnosis of this condition is important to prevent progression which can include splenic rupture. Our patient experienced symptomatic improvement after glucocorticoids and cyclophosphamide initiation. Follow up vascular imaging is also recommended to monitor for treatment response.



[3606] **Figure 1.** Ring of low attenuation seen around Celiac artery extending to involve common hepatic, short gastric and splenic artery (as pointed with white arrow).

S3607

Gastropericardial Fistula as a Complication of a Perforated Marginal Ulcer in a Patient With Roux-en-Y Gastric Bypass Surgery

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Introduction: Gastropericardial fistula is a rare occurrence. The most common risk factor for non-traumatic pneumopericardium or gastropericardial fistula is a gastroesophageal surgery such as a Nissen Fundoplication; however, it is also seen with perforation of malignant or benign gastric ulcers (1,2,3). Here we report a gastropericardial fistula presenting with hydropneumopericardium in a patient with a perforation of a marginal ulcer (MU) after laparoscopic Roux en Y gastric bypass (LRYGB) in the setting of excessive NSAID use.
Case Description/Methods: A 48-year-old gentleman 13 years out from an uncomplicated LRYGB had an EGD for abdominal pain after chronic NSAID use and anemia. He was found to have a gastrojejunal (GJ) anastomosis ulcer. Random stomach biopsies were negative for H pylori. Care was taken to avoid biopsy of the ulcer. The patient was prescribed high dose, twice daily PPI with plans for repeat EGD in 8 weeks. 10 days later, he presented to the ED with shortness of breath and chest pain. Vital signs upon arrival were notable for heart rate in the 110s but otherwise unremarkable. Labs were remarkable for

leukocytosis 18,000 cells per liter, hemoglobin 10 g/dl, BNP 500 ng/l, and normal troponin. Initial CT chest without contrast demonstrated pericardial effusion with associated pneumomediastinum. The subsequent CT chest with oral contrast had findings of a hydropneumopericardium and large amount of oral contrast within the dependent portion of the pericardial sac. A fistula from the pericardial sac to the GJ anastomosis was seen. An echocardiogram demonstrated a very echodense large circumferential pericardial effusion suspicious for food. The patient went to the operating room and underwent pericardiectomy and reconstruction of the prior gastrojejunostomy. (Figure)

Discussion: This case demonstrates a rare development of gastropericardial fistula in a LRYGB patient taking NSAIDs causing a MU and subsequent perforation. The mainstays of conservative therapy for MU in RYGB patients include twice daily high dose PPI or H2 antagonist and sucralfate as well as avoidance of NSAIDs (4). A systematic review by Coblijn et al discusses that of 67.9% of patients (N=801) presenting with MU (including those with perforation) after RYGB utilized conservative therapy as mentioned above (5). Alternative options include revisional surgery or radiology assisted drainage, which is typically reserved for recalcitrant ulcers, perforation, fistula development, or dilated pouch (6).

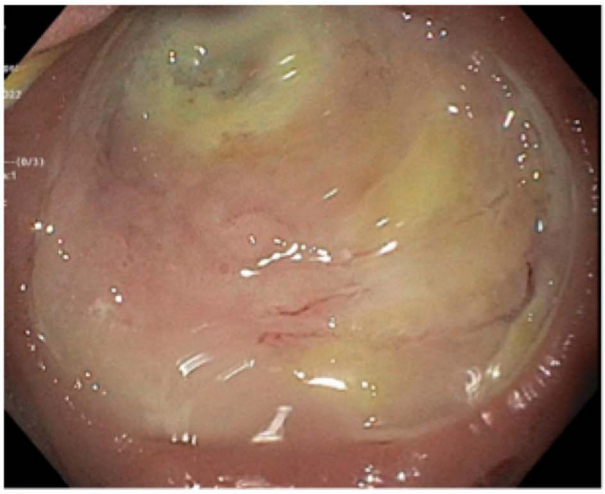

Figure 1

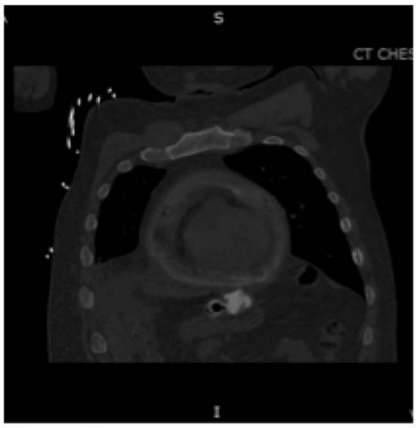

Figure 2

[3607] **Figure 1.** Endoscopic view of gastrojejunal anastomosis ulceration. Figure 2. Coronal view of gastropericardial fistula with oral contrast extravasation into pericardium.

S3608

Gastric Nodules Demonstrating Relapsed Melanoma in Abdominal Pain Evaluation

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Introduction: Melanoma is the third most common cutaneous malignancy in the United States, and fifth most common overall. Common sites for metastasis include the skin, brain, liver, and gastrointestinal (GI) tract. Although involvement of the GI tract in metastatic disease is common, it is typically found postmortem and only 0.8%-4.7% of patients have GI symptoms. Within in the GI tract, the small bowel is the most common site of metastasis. Gastric metastasis is a relatively rare occurrence and is generally associated with poor prognosis. Here we discuss a patient who presented with nonspecific epigastric pain and nausea who was found to have gastric melanoma based on biopsy of gastric nodules found on esophagogastroduodenoscopy (EGD).

Case Description/Methods: 57-year-old male with history of stage IIIa melanoma in 2008 in remission presented to clinic for evaluation of nausea, bloating, and epigastric pain of 2-week duration. Review of systems was unremarkable. Symptoms were refractory to dietary modification and esomeprazole. An EGD was pursued and identified multiple fundic gland polyps (not present on EGD 2019) which were biopsied. Pathology supported melanoma through positivity for S100, Melan-A, HMB45 and CD56. After diagnosis, CT abdomen and pelvis showed extensive peritoneal carcinomatosis, hepatic lesions, and pulmonary nodules with further biopsies supporting melanoma. The patient did not have any new skin lesions. He was started on ipilimumab and nivolumab and continues to receive treatment. (Figure)

Discussion: Malignant melanoma (MM) is one of the most common malignancies to metastasize to the GI tract. In the GI tract, metastasis to the small bowel is most common. The ability of MM to spread to the small intestine has been suggested to be a result of the increased expression of CCR9 chemokine receptor on melanoma cells for which its ligand CCL25 is highly expressed in the small intestine. In most cases, once the cancer has metastasized to the small bowel, it will then spread into the stomach and colon. Hence, for patients who have MM identified in the stomach, there should be a strong suspicion for presence of metastasis in the small bowel. Currently no screening is indicated for GI melanoma, and symptoms are only observed in a minority of patients. Given the poor prognosis associated with MM, this presentation reinforces the need to have a higher level of concern for GI metastasis in patients with history of MM.

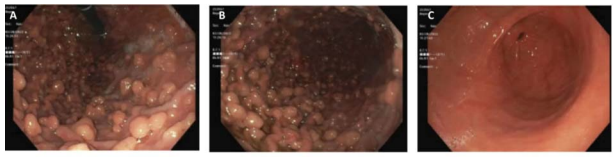

Figure 1A: Fundus of stomach showing multiple polyps, Figure 1B: Body of stomach showing multiple polyps, Figure 1C: Antrum of stomach with no polyps

[3608] **Figure 1.** Gastric nodules secondary to malignant melanoma.

S3609

Gastric Schwannoma in a Patient With Early Satiety

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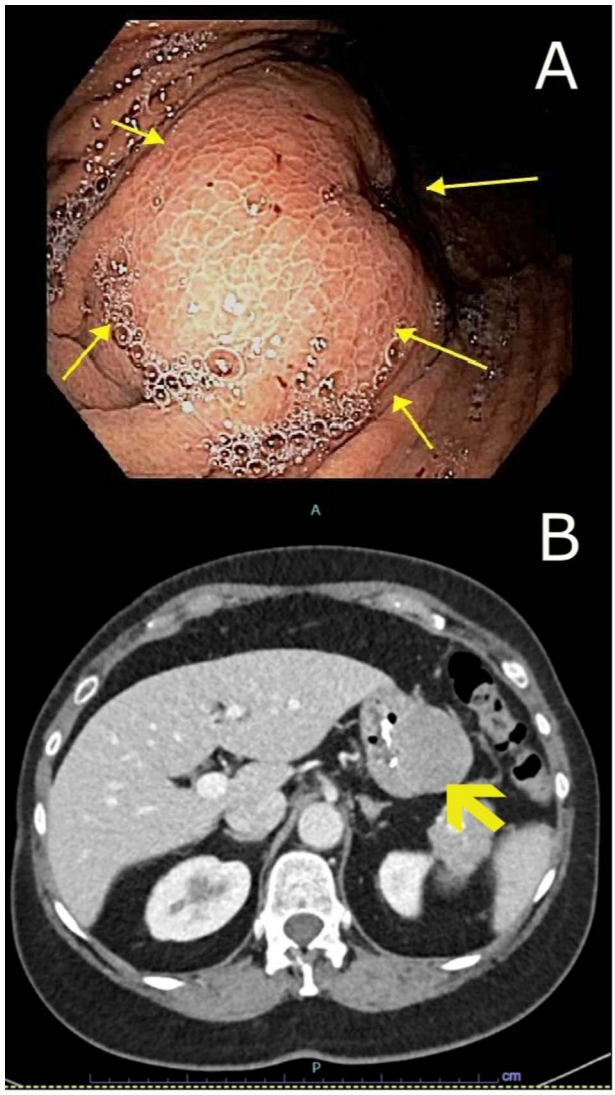
Introduction: Schwannomas are an uncommon subtype of benign gastrointestinal mesenchymal tumor found most frequently in the stomach originating from the Auerbach myenteric nerve plexus. Gastric schwannoma is frequently mistreated as it shares many similarities with GIST. We present the case of a patient with early satiety and iron deficiency anemia who was found to have gastric schwannoma on upper endoscopy.

Case Description/Methods: A 59-year-old female with endometriosis and iron deficiency anemia on oral iron supplementation presented to our clinic with complaints of fatigue, frequent post-prandial cough, early satiety, and dark stools. She reported chronic NSAID use and denied abdominal pain, dysphagia, nausea, and unexplained weight loss. Initial CBC demonstrated a hemoglobin of 9.2 g/dL with positive stool guaiac testing. Cessation of NSAIDs led to hemoglobin improvement within normal limits. EGD revealed a roughly 5 cm smooth submucosal mass in the distal gastric body along the greater curvature with firm consistency and a central depression (Figure A). Colonoscopy was unremarkable. Abdominal CT demonstrated an exophytic mass within the gastric wall with relatively homogenous attenuation and enhancement (Figure B). Endoscopic ultrasound with FNA of the mass revealed pathology suspicious for a stromal cell neoplasm and elective laparoscopic partial gastrectomy was performed with findings of a 4.7 x 3.7 x 3.6 cm submucosal mass consistent with schwannoma with Sox10/S100 positivity and DOG-1/c-KIT negativity. The patient resumed a normal diet 2 days after surgery without complications.

Discussion: Gastric schwannoma is frequently misdiagnosed as GIST due to similar prevalence, clinical symptoms, and appearance. Some studies suggest a misdiagnosis rate of up to 96.7%. Key to the diagnosis is the presence of S-100 positivity in schwannoma as GIST is negative for this marker. Additionally, DOG-1 and c-KIT are markers positive in GIST but negative in schwannoma. Most gastrointestinal schwannomas are solitary with sizes ranging from $<$ 1 cm to 28 cm. Endoscopic ultrasound with FNA biopsy is recommended to increase chances of preoperative diagnosis by approximately 10%. Treatment modalities vary based on tumor size, with endoscopic resection suggested for tumors $<$ 3 cm in diameter and surgical excision for larger sized masses. Malignant transformation is extremely rare occurring in roughly 2% of cases with S-100 expression decreasing as dedifferentiated Schwann cells form.



[3609] **Figure 1.** A. Endoscopic appearance of schwannoma as a smooth exophytic submucosal mass with central depression seen along the greater curvature of distal gastric body. B. Abdominal CT demonstrating luminal compression of the gastric body by a schwannoma with relatively homogenous attenuation and enhancement.

S3610

Gastric Volvulus in the Setting of Paraesophageal Hernia: Early Recognition of Severity and Timely Management Can Prevent Fatal Complications

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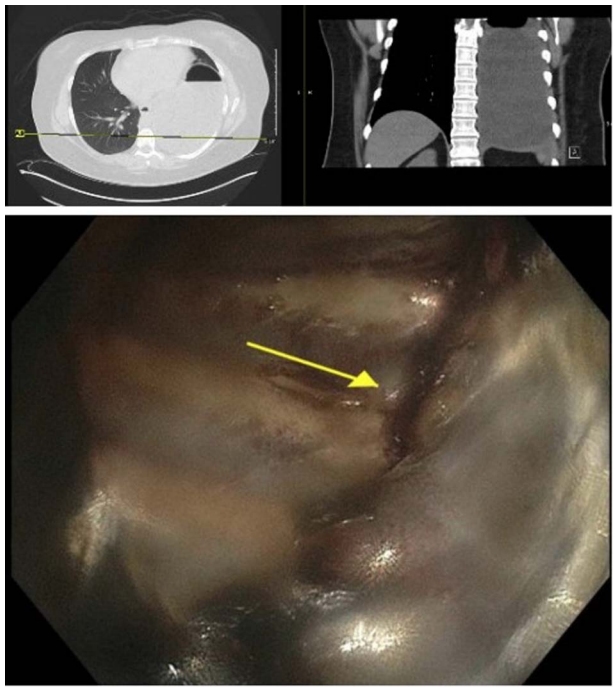
Introduction: A paraesophageal hernia is made of a true hernial sac containing intra abdominal organs. When containing the stomach, gastric volvulus (GV) is one of the most feared complications. Failure to recognize the severity of clinical signs and symptoms on presentation can lead to ischemia, perforation and ultimately death. We are presenting a case where GV proved to be life-threatening.
Case Description/Methods: A 37-year-old female with a past medical history of Nissen fundoplication (NF) and worsening gastroesophageal reflux disease came to the ED with the chief complaint of severe epigastric abdominal pain associated with retching, vomiting and obstipation. On admission, the patient was hypoxic and tachycardic. CT scan of the abdomen revealed a large paraesophageal hiatal hernia containing the stomach (Figure). Considering the suspicion of a GV, the decision was made to endoscopically place a nasogastric tube to decompress the stomach. During the procedure, the thoracic cavity and rib cage was visualized (Figure). The procedure was aborted. Following this, the patient became agitated and then unresponsive. Intubation was performed for airway protection. Soon after, the patient went into cardiac arrest and Cardiopulmonary resuscitation (CPR) was initiated. During CPR, the patient was requiring higher pressure of ventilation and decreased breath sounds on auscultation; with suspicion of pneumothorax due to gastric perforation, bilateral chest tubes were placed. Return of spontaneous circulation was achieved after thoracic cavity decompression with chest tube placement. Emergent exploratory laparotomy revealed a 2 cm perforation at the level of the Nissen fundoplication with 80% of the stomach within the thoracic cavity. The defect was repaired and a jejunostomy was created. Unfortunately, the cardiac arrest was complicated with severe anoxic brain injury. After one month of hospital stay, the patient was eventually discharged with a chronic tracheostomy.
Discussion: Borchardt's triad (acute epigastric pain, retching and failure to pass an NG tube) is highly diagnostic of GV. Gastric volvulus is a late but a rare complication of NF. The mechanism of GV development after NF is thought to be due to adhesions, foreign bodies, gastropexy and gastric herniation through a "transfundoplication" window. A high index of suspicion should be maintained for GV in patients presenting with signs/ symptoms of gastric obstruction. Early recognition of GV is important and surgical treatment should be expedited.



[3610] **Figure 1.** CT Scan of the abdomen revealed a large paraesophageal hernia containing the stomach. Thoracic cavity and rib cage visualization on endoscopy.

S3611

Gastric Metastasis Masquerading as a Polyp

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Introduction: Renal cell carcinoma (RCC) is the most common renal tumor and accounts for 3% of all cancer deaths. Gastric metastasis is a rare event with a reported incidence of 0.2 - 0.7% . There are less than 60 cases of gastric metastasis from a renal cell carcinoma. We present a rare case of a metastatic lesion appearing as a gastric polyp and the importance of the necessity of polypectomy regardless of size during any endoscopy.
Case Description/Methods: 78 year-old male status-post radical nephrectomy 22 years ago for renal cell carcinoma and pulmonary metastasis 8 years ago presented with dysphagia. Patient has been actively followed by oncology and maintained on pazopanib for 10 years. EGD found 2 large polyps in the proximal gastric body along the greater curvature >1 cm. Pathology showed positivity for CAM5.2 and PAX8, confirming the diagnosis of a clear cell type of RCC.
Discussion: Renal cell carcinoma even if treated with radical nephrectomy can become metastatic and recur 30% of the time. Metastatic renal cell carcinoma (mRCC) commonly metastases to the lung (70%), bones (30-40%), liver (20%), adrenal (10%), and brain (8%) [3-5]. Gastric metastases are exceedingly rare (< 1%). A systematic review by Prudhomme et al. identified 38 cases of RCC in the stomach between 1950- and 2018, and 73% presented with multiple metastatic sites (mainly lungs and bones). In spite of radical nephrectomy, given possible microvascular metastases of mRCC, unusual lesions should always be biopsied for malignancy. Given mRCC's variable dormant nature, regardless of chemo-therapy status, clinicians should not hesitate to rule out possible mRCC as lesions can have very slow growth rate ranging from 0.31–211.93 cm^3/year and may be clinical silent for decades. Due to mRCC slow-growing nature, they result in several false-negative chest X-ray/abdominal CT screenings within the first 10 years and mRCC may re-surface decades later with alarm symptoms. Slow growing metastasized lesions are still malignant; the patient's malignant polyp may have been growing 0.045cm/year for two decades. The minimum size cutoff for polypectomy is clinician-dependent with some guidelines recommending a 2-cm minimum and others recommending resection of all polyps greater than 0.5 cm. In patients with noted history of mRCC, regardless of size, all polyps should be biopsied.

S3612

Gastritis Secondary to Nivolumab in a Patient With Metastatic Melanoma

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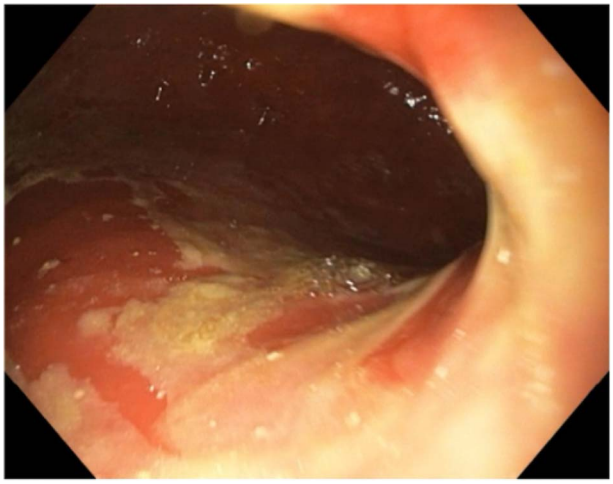
Introduction: Gastritis is an adverse effect of immunotherapy that is less commonly reported than diarrhea or colitis. This case involves a 60-year-old male presenting with vomiting and abdominal pain with upper endoscopy revealing diffuse Helicobacter pylori (H. pylori) and Cytomegalovirus (CMV)-negative gastritis and duodenitis. The eventual diagnosis of immunotherapy-related gastritis was reached, and the patient was treated with proton pump inhibitors and systemic glucocorticoids.
Case Description/Methods: A 60-year-old male with metastatic melanoma being treated with nivolumab monotherapy presented to the hospital with two weeks of abdominal pain and vomiting. He declined nonsteroidal anti-inflammatory (NSAID) use. The patient underwent esophagogastroduodenoscopy (EGD), which demonstrated diffuse ulceration and friability of the gastric and duodenal mucosa. Pathology revealed severe gastritis and duodenitis and was negative for CMV and H. pylori. Intravenous (IV) pantoprazole and oral sucralfate were started, along with IV methylprednisolone, which was later transitioned to oral prednisone. The patient's symptoms improved. The hospital course was complicated by severe oropharyngeal candidiasis treated with nystatin and fluconazole, dysphagia requiring temporary nasogastric (NG) tube placement, hypotension, delirium, QTc prolongation requiring cessation of oral fluconazole, pulmonary embolism requiring anticoagulation, and bacteremia of unknown origin requiring ceftriaxone. Ultimately, he improved, was able to tolerate oral intake, and was able to be discharged home. (Figure)
Discussion: Immunotherapy-related gastritis is less common than immunotherapy-related colitis, yet an increasing number of case reports have been published describing this phenomenon. Other causes of gastritis must be excluded, including NSAID use, H. pylori, and CMV. This patient was not taking NSAIDs, and testing was negative for H. pylori and CMV, thus the most likely etiology was an adverse reaction to immunotherapy. The clinical presentation of immunotherapy-related gastritis is highly variable but typically includes dyspepsia and dietary intolerance. EGD often reveals diffuse gastric edema, ulceration, and tissue sloughing. Biopsy demonstrates a mixed inflammatory infiltrate consistent with gastritis. Treatment for immunotherapy-related gastritis includes systemic glucocorticoids, proton pump inhibitors, and withholding of the causative agent. Infliximab is often used for refractory disease.



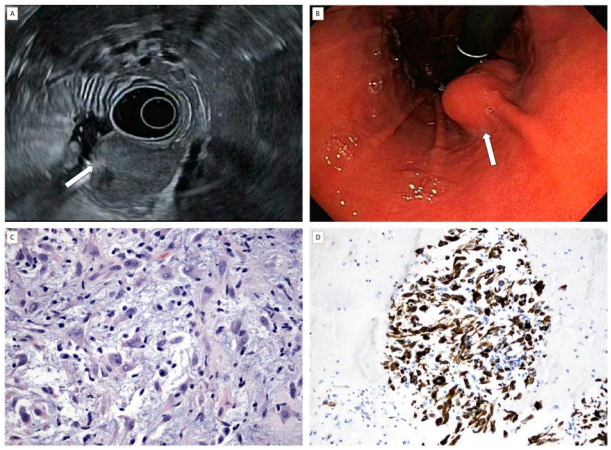
[3612] **Figure 1.** Upper endoscopy revealing diffuse sloughing of the gastric mucosa.

S3613

Gastric Spindle Cell Leiomyosarcoma Is Associated With Chronic Helicobacter pylori Infection

Darian Fard, MD[1], Mahmoud Mansour, MD[2], Harleen K. Chela, MD[2], Alhareth Al Juboori, MD[1], Feng Yin, MD, PhD[2], Ghassan Hammoud, MD, MPH[3].
[1]University of Missouri-Columbia Hospital, Columbia, MO; [2]University of Missouri, Columbia, MO; [3]University of Missouri Health Care, Columbia, MO.

Introduction: Chronic Helicobacter pylori (HP) infection has been shown to be strongly associated with development of gastric malignancies, mostly gastric adenocarcinomas and lymphomas. We present a case of primary gastric leiomyosarcoma in a patient with persistent epigastric pain and HP infection.
Case Description/Methods: A 59-year-old female presented to clinic with persistent, postprandial epigastric pain. Cardiopulmonary workup was negative. She had a history of esophageal leiomyoma resected endoscopically with negative margins 10 years ago. She was treated in the past for HP infection but never had repeat testing to confirm eradication. Abdominal computed tomography showed focal hepatic infiltration. She was advised to have a repeat upper endoscopy for surveillance but was lost to follow-up due to psychiatric comorbidities. She presented 6 years later with epigastric pain. Repeat CT abdomen showed a new 2.8 cm hypoattenuating lesion in the lesser curvature of the stomach. Patient did not follow up due to psychosocial issues. Two years later, she returned to clinic for epigastric pain and underwent repeat upper endoscopy and endoscopic ultrasound (EUS) with fine needle aspiration (FNA). EGD showed sub-gastric nodule attached gastric wall, about 30 mm in maximal dimension and gastric biopsy confirmed active HP infection. The EUS showed a 31.7x23.5 mm hypoechoic homogeneous gastric mass along the lesser gastric curvature. Cytology showed cellular spindle cell neoplasia with myogenic differentiation concerning for possible leiomyoma or leiomyosarcoma. Abdominal magnetic resonance imaging and chest computed tomography revealed no evidence of abdominal or thoracic metastasis. Subsequently, partial underwent sleeve gastrectomy. Pathology revealed Grade 1 myxoid leiomyosarcoma with negative margins. (Figure)
Discussion: Prior studies demonstrated associations between HP infection and gastric malignancies - typically gastric adenocarcinoma or lymphomas. Few studies investigated the relationship between HP infection and gastric leiomyosarcomas.4,5 Importantly, this patient never had clearance of HP infection and may have allowed a leiomyosarcoma to develop. It is imperative that clinicians confirm eradication of HP infection given risk of leiomyosarcoma development in addition to other malignancies HP infections are known to cause.



[3613] **Figure 1.** Endoscopic and histologic examination of gastric leiomyosarcoma. (A) Endoscopic ultrasound visualization demonstrating tumor within lesser curvature of stomach. (B) Upper endoscopy revealing tumor approximately 4 cm from gastroesophageal junction. (C) Hematoxylin and eosin (H&E) stain of gastric tumor biopsy demonstrating spindle cell proliferation in a myxoid background with significant nuclear atypia and pleomorphism consistent with myxoid leiomyosarcoma. Magnification x400. (D) Immunohistochemical staining of gastric lesion biopsy demonstrating strong immunoreactivity to desmin. Not shown are positive stains for smooth muscle actin (SMA) as well as negative stains for Cytokeratin AE1/AE3, Myogenin, MyoD1, DOG-1, CD117, S100, SOX10, CD34, ALK-1 and ER. Positive and negative controls stained appropriately but are not included.

S3614

Gastric Linitis Plastica - An Easily Missed Diagnosis

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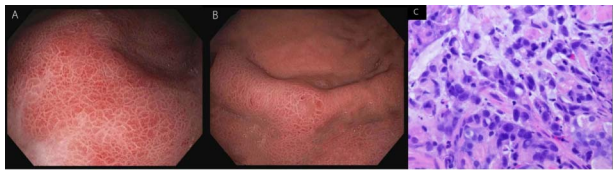
Introduction: Gastric cancer remains one of the most common malignancies worldwide, with large variations based on genetic, ethnic, geographic, and socioeconomic factors. Patients can present with nonspecific abdominal pain, weight loss, early satiety, or anemia from occult gastrointestinal bleeding. Gastric linitis plastica, a diffuse type of gastric adenocarcinoma, results in proliferation of fibrous tissue in the submucosa and muscle layers of the stomach wall. Biopsy will show classic signet ring cells or poorly differentiated tumor cells.
Case Description/Methods: A 54-year-old Caucasian male with a past medical history of end stage renal disease, hypertension, type II diabetes mellitus presented to the hospital for fatigue and melena. His hemoglobin was 7.3 g/dL, which was approximately 3g lower than his most recent hospitalization two weeks prior. He underwent upper endoscopy, which revealed a well-demarcated region of severely congested, erythematous, and friable mucosa with a reticular appearance localized to the gastric cardia, fundus, and body (Figure A and B). Histopathology revealed intramucosal adenocarcinoma with high-grade signet ring features (Figure C), consistent with gastric linitis plastica. Staining for Helicobacter pylori was negative. He was treated with acid suppression. The patient had a prolonged hospital course complicated by hypoxic respiratory failure and eventual cardiac arrest resulting in his death.
Discussion: We present here a case of gastric linitis plastica. This is a diffuse type of gastric adenocarcinoma that involves the deeper layers of the stomach wall, making the stomach firm and non-distensible. It is not associated with Helicobacter pylori infection. Diagnostic upper endoscopy remains the gold standard for evaluation, however such malignancies that spare the mucosa can be easily missed on endoscopy or histopathology. The lack of mucosal involvement decreases the yield of endoscopy and biopsy, and findings on computed tomography imaging of the abdomen lack specificity. Early diagnosis remains challenging, as endoscopic findings are less sensitive. Clinicians should maintain a high index of suspicion for this condition with findings of localized congested-appearing gastric mucosa, especially with distinct demarcation and regional non-distensibility of the gastric lumen. Deeper biopsies using "bite-on-bite" technique or endoscopic ultrasound guided fine needle biopsy should be considered.



[3614] **Figure 1.** A and B. Reticular appearance of gastric mucosa in linitis plastica. Figure C. Pathology of gastric biopsy demonstrating the classic appearance of signet ring cells in linitis plastica.

S3615

Gastric Neuroendocrine Tumor of Indeterminate Type

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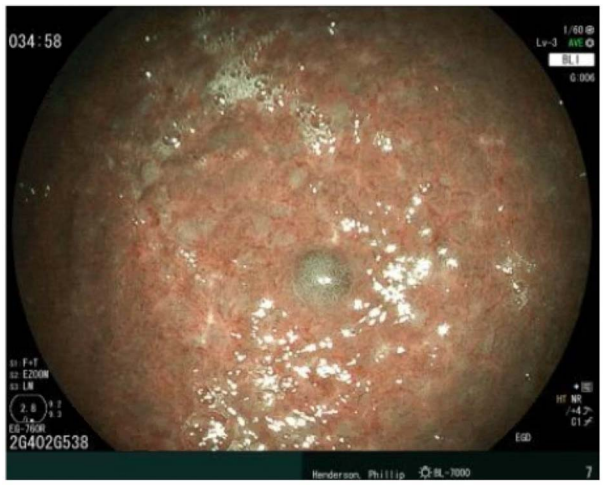
Introduction: Gastric neuroendocrine tumors (GNETs) are rare tumors making up less than 2% of gastric polyps. Type I GNETs are most common (70-80%) and are associated with atrophic gastritis, pernicious anemia, iron deficiency, elevated gastrin, and high gastric pH. These are typically small, low-grade, and may be multifocal. Type II tumors are also associated with elevated gastrin levels but a low pH, as seen in Zollinger-Ellison syndrome. Type III tumors are larger and more aggressive and occur sporadically in the setting of normal gastric mucosa, normal gastrin levels, and normal pH. Here we discuss an unusual case of GNET which does not fit into either category.
Case Description/Methods: A 70-year-old white male with history of gastroesophageal reflux disease (GERD) on chronic proton pump inhibitor (PPI) presented for esophagogastroduodenoscopy (EGD) for worsening GERD symptoms. EGD revealed 2 polyps in the body – each was 4-5 mm and was removed with hot snare. A few smaller polyps were removed with biopsy forceps. The gastric mucosa was grossly normal. Sydney protocol biopsies were obtained. The 2 larger polyps returned as well-differentiated GNETs, grade 1 (Ki-67 index 2.5%). The smaller polyps returned as areas of intestinal metaplasia (IM), but Sydney protocol biopsies did not reveal *H. pylori*, atrophic gastritis, or IM. EGD was repeated off PPI for 1 week and fasting labs were obtained. Gastric pH was 1, serum gastrin was 78 pg/mL (normal), vitamin B12 and ferritin were normal, and intrinsic factor and parietal cell antibodies were negative. (Figure)
Discussion: This case highlights a scenario in which a GNET is difficult to categorize based on classic criteria. As type III lesions are very aggressive with high risk of metastasis, distinguishing between type I and type III lesions is paramount. While grossly and histologically resembling a type I GNET (multifocal, small, low-grade), the GNETs in this case were present in the absence of atrophic gastritis, and the patient had a normal gastrin and low gastric pH off PPI. The lack of atrophic gastritis and normal gastrin levels are more suggestive of a type III tumor, but one would expect a single, large, high-grade GNET in that case. As PPI use has increased in the past 30 years, so has incidence of GNETs; it is possible that a chronic, PPI-induced "hyper-gastrin" state was responsible for this patient's GNETs and that gastrin normalized once PPI was discontinued. More studies are needed to further categorize GNETs with indeterminate features.



[3615] **Figure 1.** Gastric Polyp.

S3616

Gastric Outlet Obstruction Due to a Large Paraesophageal Hernia: An Uncommon Etiology with Fatal Consequences

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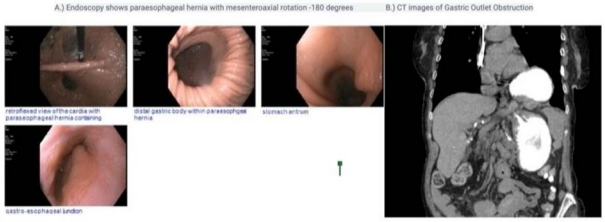
Introduction: Paraesophageal hernias are known to be relatively benign and asymptomatic and account for 5% of all hiatal hernias. Patients often present with vague abdominal symptoms such as GERD, nausea, vomiting, postprandial pain, dysphagia and in severe cases hematemesis. Complications with paraesophageal hernias include gastric mucosal necrosis, perforations, strangulation, erosive ulcers and gastric volvulus. We present a case of an 84 year old female with a large paraesophageal hernia causing gastric outlet obstruction ultimately requiring surgery.
Case Description/Methods: This is a 84 year old female with a known history of having CKD, IDA, paraesophageal hernia and GERD who presented to the hospital for evaluation of post prandial nausea, vomiting, and early satiety, which has been ongoing for a week. She denied having hematemesis or weight loss. On a physical exam, her abdomen was distended but with no tenderness or guarding. CT abdomen and pelvis revealed a gastric outlet obstruction with a partial organoaxial volvulus involving the gastric antrum associated with a paraesophageal hernia. A nasogastric tube was placed for decompression and the patient was taken to endoscopy the following day. On endoscopy a large paraesophageal hernia was seen with mesenteroaxial rotation within the entirety of the distal stomach, antrum and duodenum entrapped within the paraesophageal hernia with no signs of ischemia, however, attempts to reduce the hernia endoscopically was unsuccessful. The patient was transferred to a tertiary hospital and underwent an urgent laparotomy which revealed a Type 3 paraesophageal hernia with an incarcerated stomach. The hernia was easily reduced and removed and a GORE bio mesh was placed. Her symptoms improved greatly post-operatively with a plan to have a repeat endoscopy in 12 months. (Figure)
Discussion: Gastroenterologists should be aware of life threatening complications associated with paraesophageal hernias as early misdiagnosis can be life threatening. Our case highlights the diagnostic challenge seen with paraesophageal hernias and once confirmed with the correct diagnosis, requires immediate treatment. Treatment options include decompression with endoscopy and/or emergent surgery with reduction or hernia repair. Symptomatic paraesophageal hernias can present in the elderly, and although a rare entity, can have a high mortality (40%-50%).



[3616] **Figure 1.** Endoscopy and CT images of paraesophageal hernia causing gastric outlet obstruction.

S3617

Gastrocolic Fistula After Roux-en-Y Gastric Bypass: A Case Report

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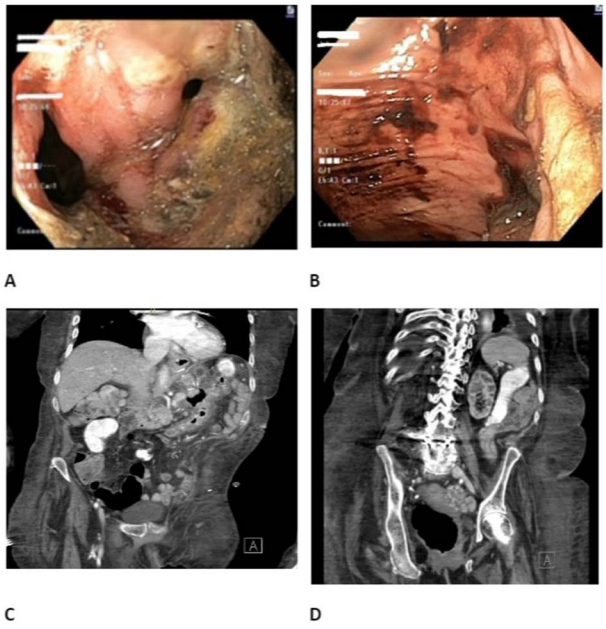
Introduction: Gastric Fistula is a well-recognized complication after Roux-en-Y gastric bypass (RYGB). We present a rare case of gastro-colic fistula that occurred many years following a RYGB.
Case Description/Methods: Our patient is a 68-year-old female nursing home resident with a past medical history of hypertension, diabetes, stroke, chronic ventilator-dependent respiratory failure and retrocolic RYGB surgery in 2001 who presented with dark maroon stool. The patient's vitals were stable, abdominal exam was benign, and she had a gastrostomy tube in place (remnant stomach). Laboratory workup showed a Hgb of 6.4 mg /dl. Upper endoscopy showed ulceration and stenosis of gastro-jeujenostomy and gastro colic fistula. The fistula was intubated and showed feculent material from the transverse colon(Figure A,B). The biopsies of the ulcers revealed chronic inflammation. Computed tomography (CT) imaging with oral and IV contrast showed contrast filling in transverse colon and changes consistent with gastro colic fistula(Figure C,D). General surgery and bariatric surgery were consulted. However, she was not a candidate for surgical intervention due to her overall condition. She was discharged to a nursing home after management with a proton pump inhibitor (PPI) along with a blood transfusion.
Discussion: Fistulous complications occur in up to 1- 6% of patients who undergo RYGB surgeries. This is historically related to incomplete division of gastric tissue upon creation of gastric pouch. However, with new stapler technology, the staple line is completely divided and the chances of fitulous complications are signficantly decreased. Gastro-jeujenal anastomosis ulcer, leaks, and chronic infection might be contributing to contemporary fistulas. Like ulcers, most gastro gastric fistulas present with epigastric abdominal pain, oral intolerance, failure to thrive and/or bleeding. The patient was not a candidate for surgery due to her overall medical condition. Had the patient been a surgical candidate, exploratory laparoscopy with en-bloc resection of the fistula and reconstruction would have been the definitive surgical treatment for her gastro colic fistula. It is strongly recommended that clinicians take a multi-disciplinary approach to this rare, but critical complication of bariatric surgery to ensure overall patient health optimization.



[3617] **Figure 1.** (A) Gastric pouch to transverse colon fistula, (B) Contrast seen in descending colon, (C) Gastric pouch to transverse colon fistula, (D) Transverse colon visualized through the fistulous tract.

S3618

Gastric Outlet Obstruction as a Presenting Symptom of Duodenal Adenocarcinoma

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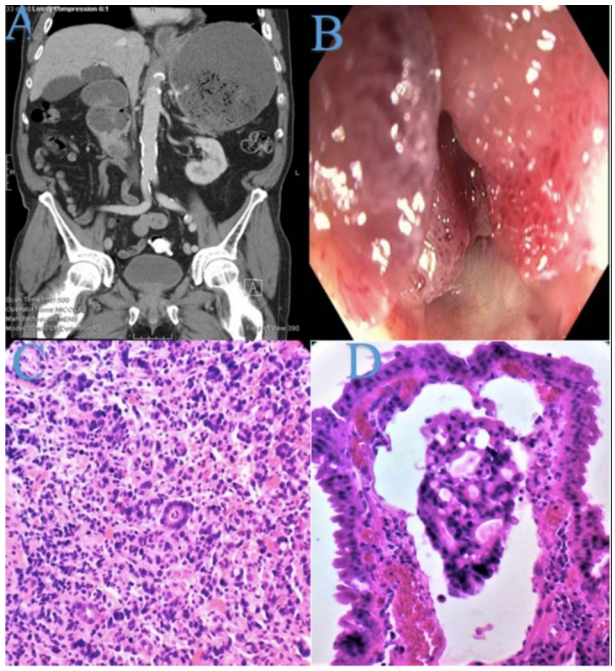
Introduction: Gastric outlet obstruction (GOO) can be due to benign or malignant causes. Benign etiologies of GOO have been down-trending, resulting in 50-80% of cases of GOO attributable to malignancy. Of the malignant causes leading to GOO, pancreatic adenocarcinoma with extension to the duodenum or stomach is the most common cause, followed by distal gastric cancer. However, primary duodenal adenocarcinoma as the cause of GOO is relatively rare, and we present a case of moderate to poorly differentiated duodenal adenocarcinoma leading to GOO.
Case Description/Methods: An 82-year-old man with no reported past medical history presented to the hospital with epigastric abdominal pain associated with worsening distention, nausea, multiple episodes of non-bloody projectile vomiting, and associated weight loss of 12 pounds in the past 2 months. The abdominal exam was unremarkable. Labs were nonsignificant. A computer tomography (CT) scan of the abdomen and pelvis revealed a massively dilated stomach with suspected circumferential narrowing in the distal stomach suggestive of gastric outlet obstruction (Figure A). NGT was placed for decompression, with significant relief of symptoms. The patient underwent EGD, and no gross mass or obstructive etiology was noted in the entire stomach, including pylorus and antrum. There was inflammatory appearing mucosa characterized by extensive edema and contact oozing resulting in mass effect with severe luminal narrowing in the duodenal sweep/D2 regions (Figure B). Biopsies were obtained and showed moderate to poorly differentiated adenocarcinoma (Figure C, D). Subsequently patient underwent palliative duodenal stent placement with symptomatic relief.
Discussion: Clinical history is important in suspecting the diagnosis of GOO. Cross-sectional imaging aids in diagnosis but sometimes does not help differentiate benign vs. malignant etiologies. EGD is helpful when imaging is inconclusive and for definitive pathological diagnosis. Most patients achieve symptomatic relief with conservative measures like NPO and NGT decompression. The definitive treatment for GOO varies based on etiology. Most patients with malignant causes need surgery for a cure if suitable candidates. Until recently, surgical gastrojejunostomy was the primary approach for palliative purposes. However, duodenal stent placement has become the primary palliative option as it is a cost-effective, minimally invasive option with adequate symptom relief, shortened hospital stay, and faster resumption of oral intake.



[3618] **Figure 1.** A: CT abdomen/pelvis showed massively dilated stomach with suspected circumferential narrowing in the distal stomach suggestive of gastric outlet obstruction. Circumferential thickening and narrowing of the descending duodenum. B: EGD revealing inflammatory appearing mucosa with extensive edema and contact oozing resulting in mass effect with severe luminal narrowing in the duodenal sweep/D2 regions. C: Immunohistochemistry/histology of biopsies obtained during EGD revealing duodenal adenocarcinoma with tumor glands. D: Tumor emboli in the lymphatics of the duodenal villi.

S3619

Hiatal Hernia-Induced Non-ST Elevation Myocardial Infarction (NSTEMI): A Unique Complication of Hiatal Hernia

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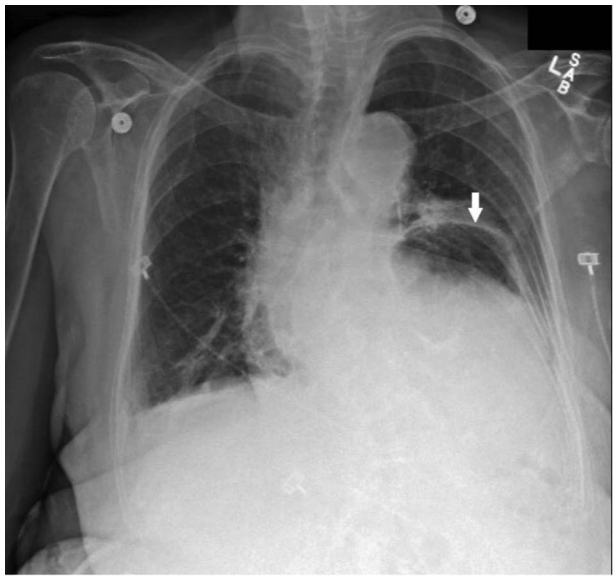
Introduction: Hiatal Hernia (HH) is characterized by the displacement of abdominal viscera into the mediastinum. It is usually an incidental finding on imaging or endoscopy, but may present with non-specific clinical signs and symptoms, often linked to gastroesophageal reflux disease (GERD). However, some patients may develop cardiac complications secondary to the direct compressive effects of a large HH. We describe a unique case of HH leading to Non-ST Elevation Myocardial Infarction (NSETMI) in an elderly female.
Case Description/Methods: A 90-year-old female with a past medical history of GERD presented to the emergency department (ED) for worsening nausea, vomiting, and epigastric abdominal pain for the past 3 days. She described the abdominal pain as sharp, severe, non-radiating, and associated with vomiting consisting undigested food particles without blood. She noted worsening of her abdominal pain 30 minutes after oral intake and on lying down shortly after meals. She denied prior abdominal surgeries. However, she admitted to increasing use of over-the-counter antacids for symptomatic relief of her GERD. On clinical evaluation, she was hemodynamically stable. However, abdominal examination elicited mild tenderness in the epigastric region. A chest x-ray in the ED showed the presence of a large hiatal hernia (Figure). Laboratory investigations revealed elevated troponin level of 0.721 ng/mL and electrocardiograph demonstrated new T-wave inversions in leads V5 and V6. She was given aspirin, atorvastatin, ticagrelor, metoprolol, pantoprazole and started on a heparin infusion. Cardiology was consulted and a diagnosis of HH-induced NSTEMI was established. A nasogastric tube (NGT) was inserted for decompression and led to a downtrend in troponin levels. She was deemed a poor candidate for cardiac catheterization and HH repair by cardiology and cardiothoracic surgery due to her advanced age. She was eventually discharged home on appropriate medications, and outpatient cardiology and gastroenterology follow-up.
Discussion: To our knowledge, this is one of the few cases of HH-induced NSTEMI reported in literature. Per the American College of Cardiology guidelines, these patients should be given aspirin, ticagrelor, metoprolol, and heparin to reduce myocardial oxygen demand. Additionally, decompression via NGT may result in decreased cardiac compression by the large HH. Furthermore, in select patients, HH repair may be a viable treatment option to treat the underlying cause and prevent further episodes.



[3619] **Figure 1.** Chest x-ray obtained in the emergency department showing presence of a large hiatal hernia (arrow).

S3620

IgG4 Gastropathy: Hemorrhagic Gastropathy as the Culminating Presentation of Undiagnosed IgG4-Related Disease

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Introduction: IgG4 related disease (IgG4-RD) is a newly recognized, immune-mediated disease with IgG4-positive plasma cell infiltration. Serum IgG4 levels are often elevated (although not required for diagnosis). IgG4-RD can affect a multitude of organs, including but not limited to the pancreatic-biliary system, salivary/lacrimal glands, retroperitoneum, liver, aorta, lymph nodes, and rarely, the gastrointestinal tract. This case highlights the rare GI tract presentation of a patient's heretofore unrecognized IgG4 disease.
Case Description/Methods: An 81-year-old woman with past medical history of Sjogren's disease, myelodysplastic syndrome, and chronic myelomonocytic lymphoma presented to the emergency department for melena. Physical exam was unremarkable, but melena confirmed on digital rectal exam. Laboratory studies with hemoglobin nadir at 5.0 g/dL (baseline 8), hypergammaglobulinemia (without monoclonal peak) and elevated IgG4. Gastroenterology was consulted and performed esophagogastroduodenoscopy, showing hemorrhagic gastropathy and friable tissue. Biopsy showed gastric mucosa with patchy severe chronic gastritis and predominant plasma cell infiltration (without light chain restriction), thought to be isolated IgG4 gastropathy. Melena resolved with supportive care. Bone marrow biopsy obtained, appropriately decreased cellularity, no monocytes on flow cytometry. Abdominal computerized tomography with intravenous contrast showed diffusely atrophic pancreas, 4.8 cm infrarenal aneurysmal abdominal aorta (AAA), and post cholecystectomy changes. Reported history of pancreatitis (records unavailable), fine needle aspiration of pancreatic head and tail (ten years prior) showed predominantly acute inflammatory cells, necrotic tissue debris and benign ductal epithelial cells, respectively. Salivary gland biopsies (ten years prior) showed benign mucinous gland tissue and multiple reactive lymphoid follicles. The clinical picture was concerning for possible systemic IgG4 disease. Unfortunately, four months after initial evaluation, patient suffered from a cerebrovascular event and passed away a month later after progressive debilitation.
Discussion: On initial evaluation, patient appeared to present with isolated IgG4 gastropathy. Given history of salivary gland disease, pancreatic disease, and AAA, high degree of suspicion exists for underlying IgG4- RD connecting previous diagnoses. Although rare, IgG4-RD may present in various ways, and clinicians must remain vigilant for appropriate diagnosis and treatment.

S3621

Imaging Finding as a Clue for Accidental Salicylate Toxicity

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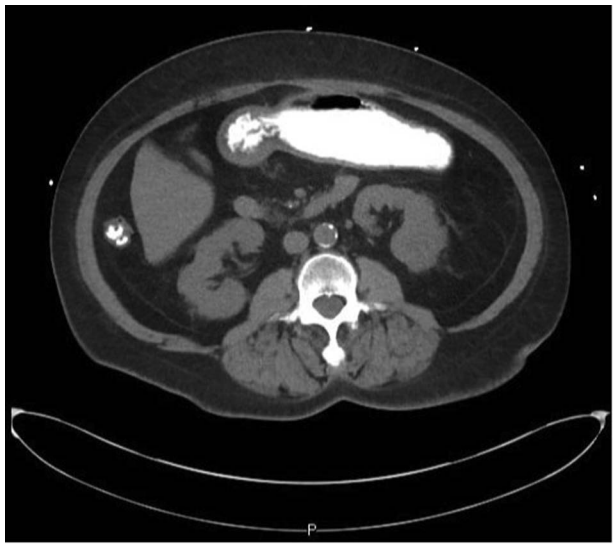
Introduction: The rise of acetaminophen use as an antipyretic in children dramatically decreased the incidence of salicylate toxicity in children. However, it is still relatively common in adults and usually overlooked by physicians especially in elderly patients due to non-specific presentation and unawareness of salicylate-containing medications. We present a case of salicylate toxicity secondary to Pepto-Bismol abuse. Suspicion was raised after a radiopaque density was found in a non-contrast CT abdomen.
Case Description/Methods: A 62-years-old female with a history of compensated heart failure, COPD, and hypertension presented with lethargy, diaphoresis, and epigastric pain. The pain was associated with nausea and occasional vomiting. Vital signs showed HR 105, BP 110/60, RR 18, and oxygen saturation of 94 % on ambient air. Physical exam was remarkable for scattered mild expiratory wheezes. Lab results were significant for high anion gap metabolic acidosis with HCO3 16 mmol/L, Creatinine 1.4 mg/dL, and BUN 30 mg/dL. Non-contrast CT abdomen showed a contrast material in the stomach (Figure). Further history was then taken from the patient who reported ingestion of around 60 tablets of Pepto-Bismol over the last 48 hours trying to relieve her stomach pain. Salicylate toxicity was then suspected, and the salicylate level was checked and it was 26 mg/dl. The patient was then treated with activated charcoal and supportive IV fluids. The patient's symptoms were resolved and she was discharged home.
Discussion: Diagnosis of salicylate toxicity is challenging, specifically in the elderly with the non-specific presentation. In addition, salicylate is an ingredient of many over-the-counter (OTC) medications, that many physicians are not aware of, such as Alka-seltzer, Bufferin, Vanquish, Pepto-Bismol, etc. Our patient had salicylate toxicity after ingestion of around 60 tablets of Pepto-Bismol. Suspicion was raised after finding a picture of oral contrast in the patient's stomach in a non-contrast study. Pepto-Bismol (bismuth subsalicylate) can appear as a contrast on imaging due to the hyperdense property of the bismuth ingredient. The property of this medicine should be taken into consideration. Otherwise, such incidental findings can be missed as a clue for a certain condition (as in our patient) or lead to unnecessary workup, patient anxiety, and waste of resources in other situations. Our case also demonstrates the importance of taking a thorough history including OTC medications.



[3621] **Figure 1.** Non-contrast CT abdomen shows a picture similar to contrast material secondary to Pepto Bismol ingestion.

S3622

Idiopathic Culture-Negative Suppurative Gastritis With Gastric Abscess

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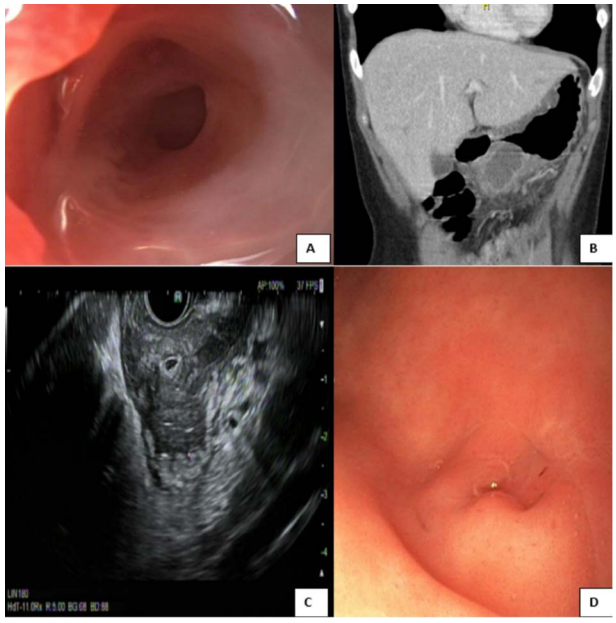
Introduction: Suppurative gastritis is an uncommon infectious process involving the gastric wall from direct mucosal injury caused by a foreign object, reflux of proximal intestinal bacteria, and hematogenic or lymphatic spread from a distant infection. Intramural gastric abscess is rare with high mortality and morbidity if left untreated. Immediate management is required once there is clinical suspicion.
Case Description/Methods: A 23-year-old female with unremarkable medical history presented to the emergency department with epigastric pain for 1-week. She endorsed chills, nausea, and non-bilious vomiting. There was no history of foreign body ingestion, prior endoscopy, proton pump inhibitor, tobacco, or recreational drug use. Patient reported drinking two bottles of wine a week over the month before her illness due to stress and constant use of non-steroidal anti-inflammatory drugs (NSAIDs) for relieving menstrual pain. On exam, she had mild epigastric tenderness. Laboratory work was significant for mild leukocytosis. Computed tomography revealed a lobulated mural thickening and submucosal edema involving distal gastric body & antrum, with a 4.3 cm rim-enhancing intramural collection suggestive of an abscess (a) The patient was started on empiric broad-spectrum antibiotics & Pantoprazole and intravenous fluids. Endoscopy showed a cratered ulcer in the antrum with a central sinus tract leading to the gastric wall. There was no pus exuding, and the abscess appeared to have drained spontaneously (b) Mucosal biopsies were negative for Helicobacter pylori. On endosonography, there was wall thickening of the distal stomach, measuring 20 x 35 mm, with a central hypoechoic sinus tract. The lesion originated from the deep mucosal layer (c) Fine needle biopsy revealed acute inflammation with pus in the gastric wall compatible with abscess. Cytology was negative for malignant cells. The patient was discharged on oral amoxicillin-clavulanate to complete ten days of therapy. Upon repeating endoscopy, two months later, the distal gastric ulcer healed completely, and the patient was doing very well (d).
Discussion: Intramural gastric abscess is rare. Foreign body ingestion, systematic spread of infection, or prior endoscopic intervention have been described as etiologic factors. NSAIDs could be a potential contributing factor. Prompt recognition, endoscopic drainage, and antibiotic therapy are essential to improve the outcome.



[3622] **Figure 1.** EUS Finding of gastric mural abscess with a visualized sinus tract inside the thick antral wall.

S3623

Holy Foley: Iatrogenic Duodenal Obstruction From a Make-Shift Gastrostomy Tube

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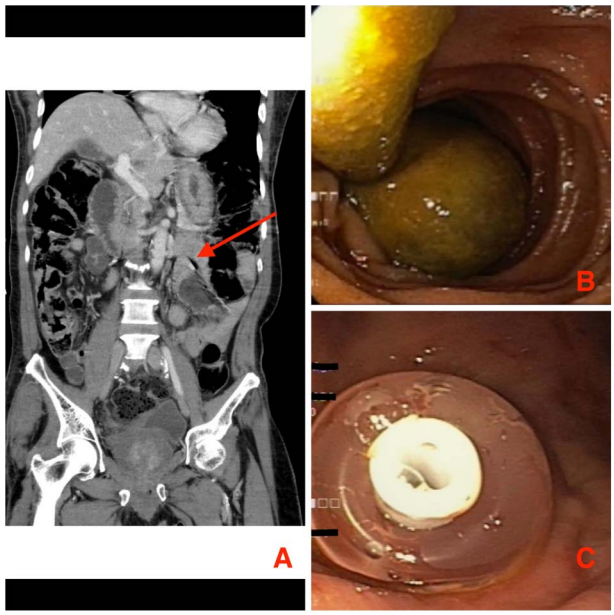
Introduction: Enteral feeding is a physiologic process of providing adequate nutrition and has been shown to improve both mortality and quality of life in patients with inadequate oral intake. Improved critical care medicine and recent wave of Coronavirus Disease 2019 (COVID-19) has left us with a large proportion of patients needing alternative enteral nutrition. Although rare, intussusception is an important differential for patients presenting with acute abdominal pain post makeshift percutaneous endoscopic gastrostomy (PEG) tube placement.
Case Description/Methods: A 58-year-old male was admitted to the hospital for coffee ground emesis over three days accompanied with epigastric pain. He had right sided hemiparesis secondary to cerebrovascular accident with PEG tube for enteral nutrition. Examination was significant for epigastric tenderness with normal bowel sounds. PEG tube aspiration revealed bile-tinged fluid. Significant labs included white blood cell count of 11,600 /mm3, hemoglobin 10.2 g/dL, and lactic acid of 2.3 mmol/L. A computerized tomography of the abdomen with IV contrast showed a small segment duodeno-duodenal intussusception at the horizontal segment around the distal end of the tube was noted (Figure A). An urgent esophagogastroduodenoscopy (EGD) revealed a Foley catheter acting as a makeshift PEG tube extending across the pylorus into the duodenum. The distal tip of the Foley catheter was visualized with an inflated balloon seen in the third portion of the duodenum (Figure B) The inflated catheter balloon acted as a lead point causing intussusception in a ball-valve effect. The balloon was deflated, and the catheter was replaced (Figure C) with a 20 Fr PEG tube.
Discussion: Gastric outlet obstruction is an uncommon complication reported in few cases caused by migration of the gastrostomy tube. Rarely this migrating gastrostomy tube can invaginate the duodenum or the jejunum causing intussusception. Only handful of cases have been reported in the literature. Patients usually present with epigastric pain, vomiting or rarely hematemesis. CT scan of the abdomen is the investigation of choice. Amidst the pandemic and supply shortage, Foley catheters have been deemed as a viable alternative to gastrostomy tubes and are being used more often. It is important to recognize this rare complication and use of balloon catheter should raise further suspicion. Timely endoscopic intervention can help avoid bowel necrosis and surgical intervention.



[3623] **Figure 1.** Computerized tomography of the abdomen with IV contrast showing a small segment duodeno-duodenal intussusception at the horizontal segment around the distal end of the tube. Figure B: Esophagogastroduodenoscopy (EGD) - Distal tip of the Foley catheter was visualized with an inflated balloon seen in the third portion of the duodenum. Figure C: Esophagogastroduodenoscopy (EGD) -The balloon was deflated, and the catheter was replaced with a 20 Fr PEG tube.

S3624

Incidental Finding of Gastric Signet Ring Cell Carcinoma: A Case Report

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Introduction: The incidence of Gastric signet ring cell carcinoma (GSRC) has been on the rise in the United States (U.S.). GSRC is estimated to account for approximately 8% to 30% of all gastric cancers in the U.S., and despite this increase in cases, there are no population-wide screening guidelines allowing for early detection. It is notable that GSRC is typically not diagnosed until it has already reached an aggressive stage with a poor prognosis and low chemosensitivity. In this case, we present a patient with a family history of gastric cancer who was incidentally found to have early-stage GSRC on random gastric biopsies taken on endoscopy.
Case Description/Methods: A 48-year-old male with family history of gastric cancer in his sibling presented for routine colonscopy. Although asymptomatic, he had an upper esophagogastroduodenoscopy (EGD) at the time of colonoscopy due to interest in screening for cancer. The patient was noted to have mild antral gastritis and gastric biopsies were taken at the time of the procedure. On random 0.7 mm gastric biopsies, the pathology was consistent with GSRC. He then underwent a subsequent EGD with mapping protocol in which biopsies were obtained from the incisura, antrum (lesser and greater curvature), and corpus (lesser and greater curvature). The lesion was found to be restricted to the antrum and he underwent a partial gastrectomy to prevent progression of disease.
Discussion: This case describes an asymptomatic patient found to have GSRC on endoscopic biopsies at a time that allowed for early intervention. Currently, there are no definitive guidelines for screening gastric cancer or metaplastic changes in the U.S., placing the decision-making burden onto the physician. In the setting of increasing incidence of gastric cancer in the U.S., establishing and broadening guidelines for screening patients who are at higher risk than the average population, notably those with family history, male sex, tobacco use, and of certain ethnicities, is becoming increasingly important. The odds ratio of a first-degree relative developing gastric cancer is estimated to be anywhere from 2 to 10 depending on the corresponding risk factors and demographics of the patient. Further research is warranted for the development of screening protocols that can guide gastroenterologists on endoscopically screening for metaplastic or cancerous lesions of the stomach. Such guidelines have become a public health necessity given the astoundingly high morbidity and mortality rates of this cancer.

S3625

Invasive Lobular Carcinoma of the Breast With Gastric Metastases

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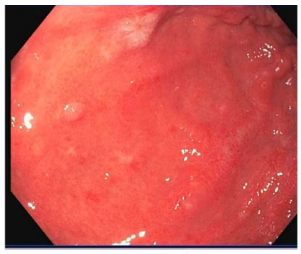
Introduction: Gastric metastasis from breast cancer is a rare phenomenon with an incidence rate of approximately 0.3% per a previous review. It is important to be able to distinguish primary gastric carcinoma from metastasis of other primary malignancies which are infrequently known to metastasize to the stomach. Initial presentations vary and are non-specific – dyspepsia, dysphagia and hematemesis should raise suspicion in the correct clinical context. We present a case of a patient with a prior history of invasive lobular carcinoma status post lumpectomy and radiation therapy 3 years prior undergoing esophagogastroduodenoscopy revealing gastric metastasis from invasive lobular carcinoma.
Case Description/Methods: 82-year-old female with a history of decompensated liver cirrhosis secondary to non-alcoholic steatohepatitis, invasive lobular carcinoma of the left breast status post lumpectomy and radiation therapy 3 years prior presented to the emergency department with worsening dysphagia to liquids and abdominal pain with distension. Pertinent labs revealed alkaline phosphatase of 308, AST 132, ALT 63, total bilirubin of 1.1, albumin 2.7 and creatinine of 2.6 (baseline of 1.2). Ultrasound of abdomen demonstrated cirrhosis with large amount of perihepatic ascites. EGD was performed revealing diffuse gastritis with a few gastric erosions. The antral area of the stomach was notable for the mucosa taking on a thickening of the folds particularly in the prepyloric antrum. This area was biopsied. A 4mm sessile gastric polyp along the lateral wall/greater curvature of the body of the stomach was identified and biopsied. The duodenum had normal appearing mucosa. Biopsy results of the gastric polyp and thickened antral folds were consistent with metastatic lobular carcinoma of the breast which were CK7 and GATA3 positive by immunohistochemistry. The tumor was found to be ER+, PR-, HER2-0.
Discussion: Breast cancer is the most common malignancy in women in the United States with the exception of skin cancer. Invasive lobular carcinoma commonly metastasizes to bone, lung and liver. Although gastric metastasis of invasive breast cancer is relatively rare, non-specific gastrointestinal symptoms in any patient with a prior history of breast cancer should raise suspicion. Gastroenterologists should be mindful of subtle changes in mucosal appearance during endoscopic evaluation and consider a biopsy of the area of concern to rule out metastatic breast cancer (Figure).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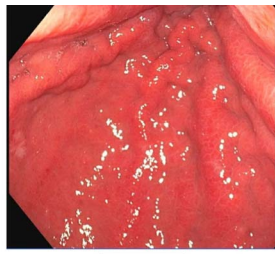
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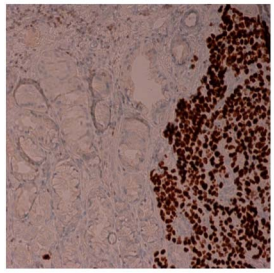
Figure 1C

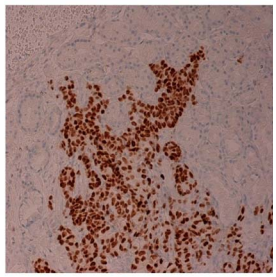
Figure 1D

[3625] **Figure 1.** Gastric polyp Figure 1B: Thickened antral folds Figure 1C: Antral fold biopsy demonstrating CK7 positivity Figure 1D: Antral fold biopsy demonstrating GATA3 positivity.

S3626

Large Type IV Hiatal Hernia Complicated by Organo-Axial and Mesentero-Axial Gastric Volvulus: A Case Report

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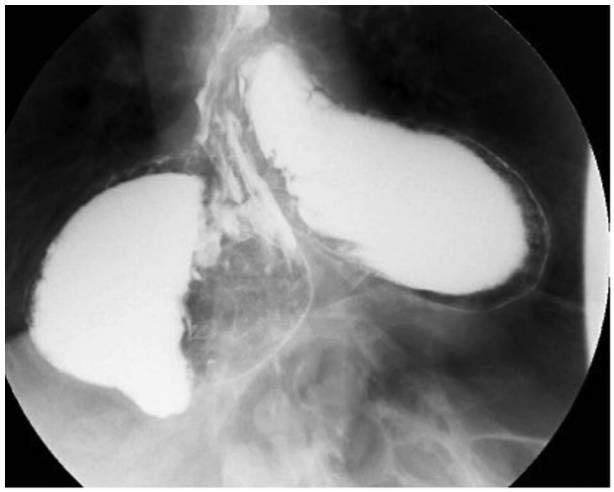
Introduction: A type IV hiatal hernia is characterized by displacement of the stomach along with other organs into the intrathoracic cavity and is associated with laxity of the peri-gastric ligaments. This condition is extremely rare, accounting for less than 5 percent of all hiatal hernias. Due to mechanical issues, paraoesophageal hernias can lead to serious complications such as gastric volvulus. Depending on the axis of rotation, gastric volvulus can be divided into organo-axial, mesentero-axial or a mixed type of volvulus. This case vignette discusses a rare case of a large type IV hiatal hernia with both organo-axial and mesentero-axial gastric volvulus.
Case Description/Methods: A 75-year-old female with past medical history of a large hiatal hernia was referred to GI clinic for intermittent post-prandial and right sided non-exertional chest pain of a few years. She denied any associated shortness of breath, diaphoresis, palpitations, and nausea/vomiting. A subsequent diagnostic esophagogastroduodenoscopy (EGD) revealed a significant anatomic distortion of the stomach with a posteroinferior positioning of the pylorus and a large 10 cm paraoesophageal hernia with associated mucosal erythema, edema, and hematin material. To further characterize the anatomy, an upper GI series demonstrated a large type IV hiatal hernia with an intrathoracic stomach measuring 9.3 cm x 15.8 cm and evidence of both organo-axial and mesentero-axial gastric volvulus. Patient was referred to surgery for gastric detorsion, fixation, and repair of the large paraesophageal hernia. (Figure)
Discussion: Gastric volvulus is a rare condition and can develop as a complication of a paraesophageal hernia. Due to fixation of the stomach along the GE junction and pylorus axis, the herniated stomach tends to rotate along this longitudinal axis resulting in an organo-axial volvulus. Less frequently, the stomach can rotate along the transverse axis resulting in a mesentero-axial volvulus. Organo-axial and mesentero-axial volvuli occurring together is extremely rare. Chronic gastric volvulus can present with nonspecific symptoms such as intermittent epigastric discomfort, postprandial fullness, nausea, dysphagia, dyspnea, or chest discomfort. Imaging via upper GI series or cross-sectional imaging are required to make the diagnosis. Chronic gastric volvulus secondary to the hiatal hernia can be managed surgically on a nonemergent basis with detorsion, fixation of the gastric volvulus and repair of the hiatal hernia.



[3626] **Figure 1.** Upper GI Series Demonstrated A Large Type IV Hiatal Hernia with An Intrathoracic Stomach measuring 9.3 cm x 15.8 cm.

S3627

Intrathoracic Herniation of Proximal Stomach Leading to Esophageal Ischemia and Gastric Perforation: A Post-Op Nissen Fundoplication Complication

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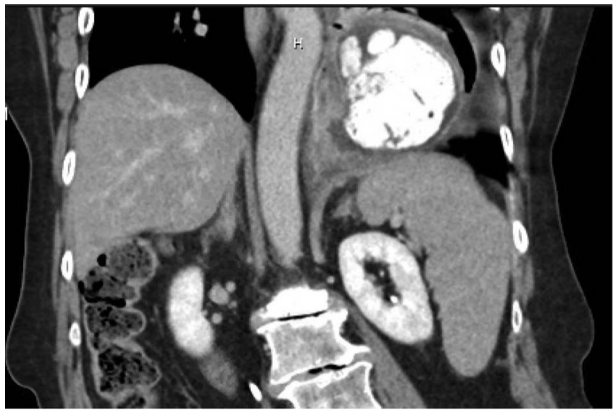
Introduction: Nissen fundoplication has been an effective and safe procedure for the treatment of refractory gastroesophageal reflux disease (GERD), however, post-surgical complications can arise. We describe a 69-year-old female with a history of Nissen Fundoplication who presented due to dysphagia and concern for food impaction. The patient was found to have an ischemic distal esophagus and perforated gastric mucosa, severe and rare complications of laparoscopic fundoplication, requiring emergent resection.
Case Description/Methods: A 69-year-old female with a history of refractory GERD who had a Nissen fundoplication performed seven months prior presented to the ER with dysphagia. The patient reported eating pork the night prior when she felt as if a piece became stuck in her lower chest after swallowing. Following this, the patient experienced an inability to swallow any liquids or solids without regurgitation. Labs including CBC, chemistries, and lactic acid were unremarkable. She underwent urgent esophagogastroscopy, showing a small gastric pouch with retained contents. There was difficulty insufflating the stomach, with friable gastric mucosa and spontaneous bleeding. The esophagogastroscopy (EGD) was aborted and the patient was sent for stat contrasted computed tomography (CT), which showed a large paraesophageal hernia with concern for a gastric volvulus and free fluid surrounding the intrathoracic stomach. The patient ultimately went to the operating room where it was discovered that a large portion of the patient's stomach had herniated through her fundoplication wrap. Release of the fundoplication and resection of the ischemic distal esophagus and proximal stomach were performed. The patient required transfer to a tertiary care center for reconstruction. (Figure)
Discussion: Current guidelines recommend pH monitoring, EGD, and esophageal manometry prior to anti-reflux surgery. The patient's initial high-resolution manometry had findings concerning for possible achalasia. She was reevaluated at a tertiary center with a negative dysmotility work up, deeming her a surgical candidate. Failures of surgery usually occur within two years after operation. The majority of complications are due to breakdown in the structural integrity of the wrap. Late gastric perforation is a rare complication with sparse literature. Careful review of preoperative studies are key to prevent drastic outcomes and endoscopists should keep this in mind with atypical presentations of food impaction in an emergency setting.



[3627] **Figure 1.** CT showing intrathoracic herniation of stomach.

S3628

Late Recurrence of Renal Cell Carcinoma Presenting as Gastric Polyps 10 Years After Nephrectomy

Analine Delgado, BS[1], Meghana Doniparthi, MD[1], Nahren Asado, MD[1], Redouane Boumendjel, MD[1], Marc Fine, MD[1], Alan Shapiro, MD, FACG[2].
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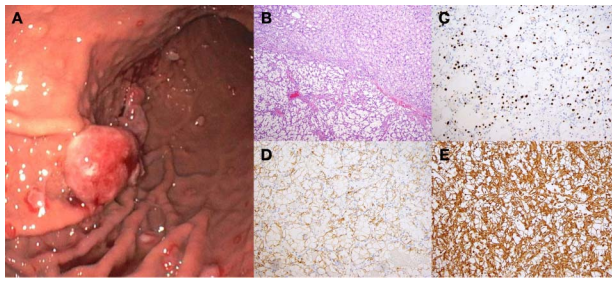
Introduction: Surgical resection of renal cell carcinoma (RCC) can be curative; however, 20-30% of patients may experience relapse most often within 3 years of nephrectomy. Late recurrence of RCC, beyond 5 years after nephrectomy, can occur in up to 10% of patients. Higher Fuhrman grade (>3) and pT stage (>2) at time of initial diagnosis are risk factors. Recurrence can be local or distant, with the most common sites of metastasis being lung (70%), lymph nodes (45%), bone (32%), liver (18%), adrenal gland (10%), and brain (8%). Gastric metastasis has rarely been reported. We describe a case of late RCC recurrence presenting as anemia secondary to gastric metastases 10 years after radical nephrectomy.
Case Description/Methods: A 77-year-old female presented with fatigue and dyspnea on exertion. She had a past medical history of RCC (Fuhrman grade 3, pT1b, stage 1) ten years prior to presentation for which she had undergone a radical nephrectomy. She was found to have hemoglobin of 6.5 with MCV 76.4. She denied overt gastrointestinal bleeding. EGD demonstrated two >1 cm sessile polyps in the gastric

body with additional scattered small, sessile and ulcerated lesions in the body and antrum (Fig 1A). The large polyps were resected using hot snare polypectomy. Colonoscopy was unremarkable. Pathology revealed metastatic RCC, clear cell type, in both polyps, positive for CAM 5.2, CD10, vimentin, and PAX-8 and negative for CK 7, CK 20, and CDX-2 (Figure 1B, 1C, 1D, 1E). CT showed mediastinal lymphadenopathy and pulmonary nodules suggestive of multiple sites of metastasis. She was started on a regimen of pembrolizumab and axitinib.
Discussion: Gastric metastasis of RCC is rare, reported to occur in 0.2% of cases, and concomitant lesions are frequently found in other sites, suggesting metastatic spread to the stomach may be a late outcome. Metastasis in the stomach typically appears as a single, large mass or ulcer whereas our patient had multiple polypoid lesions and a diffuse distribution. Management includes local excision if possible and systemic chemotherapy. Our patient presented without GI symptoms, had relatively low risk RCC at time of diagnosis, and was 10 years post-nephrectomy; therefore, GI recurrence of RCC was clinically unsuspected. This case demonstrates that multiple large gastric polyps in a patient with a history of renal cell carcinoma should be considered suspicious for metastatic disease or recurrence even one decade after nephrectomy.



[3628] **Figure 1.** A 77 year old female underwent endoscopy for investigation of anemia and was found to have two large, polypoid lesions in the gastric body with smaller scattered, ulcerated lesions in the body and antrum (A). H&E stain image shows gastric type mucosa and deeper layer within the submucosal area infiltrated by compact nests of pale looking tumor cells with abundant clear cytoplasm (B). Positive PAX8 (C), CAM 5.2 (D) and Vimentin (E) support a diagnosis of renal cell carcinoma, clear cell type.

S3629

Lumen Apposing Metal Stent for Sleeve Gastrectomy Surgical Site Stricture

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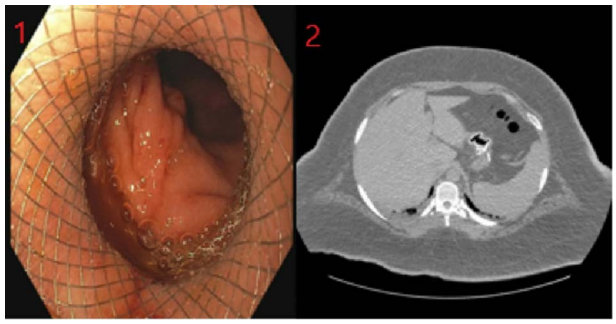
Introduction: The obesity pandemic has continuously increased yearly and more patients are seeking both medical and surgical treatments. Sleeve gastrectomy accounts for 60% of bariatric surgeries in the US. Stricture formation occurs in approximately 0.5% of cases and usually occurs at the incisura. Unfortunately, given the current insurance coverage in the US, some patients opt to travel overseas to obtain cheaper bariatric surgeries with limited quality assurance, no follow-ups and possible higher rates of complication. The use of Lumen Apposing Metal Stents (LAMS) for benign strictures are expanding and has been used in post Roux-en-Y gastric bypass (RYGB) strictures.
Case Description/Methods: We present a 29-year-old female who underwent a laparoscopic sleeve gastrectomy for Class 3 obesity. The surgery was performed overseas due to insurance coverage issues in the US. She was seen for intractable nausea and vomiting. She had an EGD performed which identified a tight 10-12mm long angulated stricture at 42cm from the incisors requiring balloon dilatations to 20mm on two occasions with no resolution of symptoms. After a multidisciplinary discussion with Bariatric Surgery, a plan was made to place a stent at the angulated stricture area as a bridge therapy while awaiting insurance approval for a definitive surgical intervention. In view of the short length of the angulated stricture, a 20mm wide X 10mm long fully covered LAMS (Figure) was successfully deployed. A subsequent CT scan of the abdomen with oral contrast (Figure 2) showed that the stent in the appropriate position with no evidence of obstruction. The oral contrast passed through the stent beyond the angulated stricture. The patient however, had no improvement of symptoms and only tolerated some clear liquids. Given persistence of symptoms, the LAMS was successfully removed intact for an emergent laparoscopic RYGB reconstruction.
Discussion: Treatment of post- sleeve gastrectomy stricture is primarily endoscopic balloon dilation but this unfortunately requires repeat endoscopic procedures. If the endoscopic therapy fails, conversion to RYGB may be required. Our case provides the first reported use of a 20mm wide LAMS as a bridge therapy for managing short surgical site stricture after a sleeve gastrectomy. More studies are needed to evaluate the effectiveness of LAMS in the management of short strictures related to gastric sleeve surgery.



[3629] **Figure 1.** (1.1) A 20 mm wide X 10 mm long LAMS at the narrow-angulated area in the proximal mid body stomach with patent lumen. (1.2) Gastric LAMS at the junction of proximal and mid body with 3 anchoring clips proximal to stent.

S3630

Metastatic Breast Carcinoma Presenting as Gastric Outlet Obstruction

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Introduction: Gastric outlet obstruction has many causes, including peptic ulcer disease, gastroparesis, and malignancy, typically primary gastric or pancreatic adenocarcinoma. It is uncommon for breast cancer to metastasize to the gastrointestinal tract as it often spreads to the bones, lungs, brain, and liver. Here we present a rare case of gastric outlet obstruction secondary to metastatic breast carcinoma.
Case Description/Methods: The patient was a 67-year-old female with a history of hormone-positive breast cancer diagnosed ten years ago, post bilateral mastectomy and chemoradiation. She had known osseous metastatic involvement for the last five years maintained on Abemaciclib. She presented to the hospital for progressive nausea and coffee ground emesis over the last several weeks. Symptoms were associated with a new onset of heartburn and dysphagia to solid foods. She was hemodynamically stable upon presentation with a hemoglobin 10.9 (N 12.0-16.0) g/dL which was her baseline. CT chest and abdomen with contrast showed new esophagitis, severe distal gastritis likely resulting in a partial outlet obstruction, and diffuse osseous metastatic disease. Abemaciclib was discontinued given its known side effect of causing mucositis. The patient underwent EGD, which showed severely ulcerated esophagitis, a large amount of retained food, and abnormal appearing diffusely thickened gastric antral folds causing

luminal narrowing and narrowing of the pylorus, limiting further advancement of the scope into the duodenum. Biopsies taken during the procedure revealed metastatic breast carcinoma. The patient required placement of a Gastrostomy-Jejunostomy tube with improvement in her symptoms. She was briefly started on Abraxane chemotherapy but ultimately transitioned to home hospice.
Discussion: The gastric antrum is a rare site for breast cancer metastasis, having been identified in only 0.3% of all gastric resections. Moreover, the mean time interval to gastric metastasis is approximately five years; however it presented in this patient more than ten years after her initial diagnosis. Although some of her initial symptoms were attributable to the side effects of chemotherapy, the EGD with biopsy was diagnostic in this case.

S3631

March of the Eosinophils: A Case of Eosinophilic Gastroenteritis, Immune Thrombocytopenia, and Iron Deficiency Anemia

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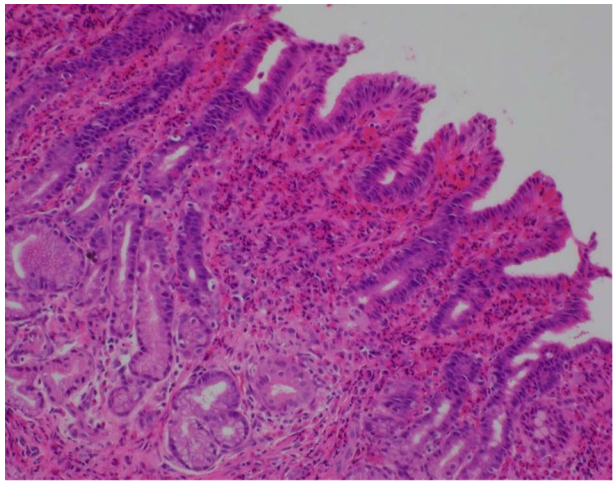
AdventHealth Orlando, Orlando, FL.

Introduction: Eosinophilic gastrointestinal disorders (EGIDs) refer to eosinophilic infiltration of the gastrointestinal tract in the absence of secondary causes. Here, we present a case of a young male with immune thrombocytopenia (ITP) and biopsy-proven eosinophilic gastroenteritis that developed iron-deficiency anemia.
Case Description/Methods: A 16-year old male with a past medical history significant for autism, ITP, melanoma, allergic rhinitis, and eosinophilic esophagitis presented for evaluation of chronic abdominal pain. He had an EGD in April 2018 that revealed white exudates at the gastroesophageal junction, scattered erosions in the gastric body and fundus, severe antral gastritis, and scattered erosions noted throughout the duodenal bulb. Biopsies were taken and revealed distal eosinophilic esophagitis (greater than 50/HPF), eosinophilic gastritis, and chronic inflammation of the duodenal bulb with Brunner gland hyperplasia and villous blunting. Absolute eosinophil count was higher than 2,000/uL. Given findings of persistent inflammation despite a six-food elimination diet, the patient was started on oral Budesonide, a proton-pump inhibitor, and an H2 receptor blocker. In March 2020, a repeat surveillance EGD with biopsy revealed the duodenum was free of inflammation or other diagnostic abnormalities. Roughly 28 eosinophils/HPF were present in the gastric cardia near the GEJ, and numerous eosinophils remained in the other gastric tissues sampled. B udesonide was discontinued due to patient intolerance. In early 2021, the patient was found to have microcytic anemia. Further Hematologic evaluation revealed low folate and iron levels. He was started on supplemental iron and folic acid, leading to resolution of the anemia. Iron and folate deficiency was believed to be secondary to malabsorption caused by EGE. (Figure)
Discussion: Eosinophilic gastrointestinal diseases remain a rare and underexplored clinical entity. While its pathophysiology is not fully understood at this time, TH2 mediated activation of B-cells and subsequent stimulation of eosinophils locally appears to be at play. Given ITP has a TH1 predominant cytokine profile, it is unclear if there is a causal association between the two. Diagnosis of EGID necessitates histological evidence of eosinophilic infiltration of the GI tract in the absence of secondary causes or infiltration elsewhere. Dietary modification to eliminate food allergens is a reasonable initial treatment, glucocorticoids remain the mainstay of pharmacotherapy at this time.



[3631] **Figure 1.** Cross-section of gastric tissue stained with hematoxylin and eosin demonstrating prominent eosinophils (greater than 100 per high-power field) within the lamina propria and gastric epithelium with associated epithelial injury.

S3632

Late Metastatic Renal Cell Carcinoma Diagnosed by Abdominal Pain and Endoscopy: A Case Report

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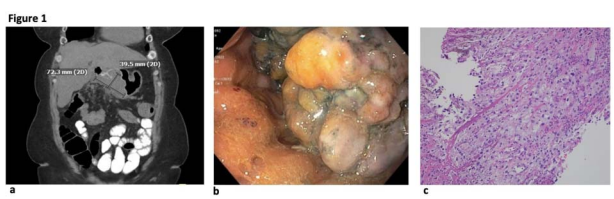
NYU Langone, Brooklyn, NY.

Introduction: Metastases to the stomach from various primary malignancies is rare. Renal cell carcinoma (RCC) metastasis to the stomach is even more uncommon and should be suspected in patients complaining of the slightest of gastrointestinal symptoms. Here, we explore a rare case of gastric metastases from RCC, eleven years after radical nephrectomy diagnosed by endoscopy.
Case Description/Methods: We report the case of a 71-year-old Hispanic female, medical history pertinent for RCC and left nephrectomy, who presented with persistent left lower quadrant abdominal pain and normal bloodwork. Repeat imaging reveals a gastric mass, unseen on CT scans 3 weeks prior (Figure a). Endoscopy (Figure b), histopathological findings, and immunohistochemical staining (Figure c) were consistent with metastatic RCC. Given the poor prognosis, patient chose to undergo targeted systemic chemotherapy.
Discussion: In the past two decades, there have been a limited number of case reports in the literature of RCC metastatic to the stomach (Table) Although gastric metastasis is a late finding in the course of renal malignancy, detection can come from a thorough evaluation of presenting symptoms followed by appropriate diagnostic imaging. Additionally, this case also emphasizes the need for targeted treatment modalities for patients with poor prognoses.



[3632] **Figure 1.** 1a. Abdominal and pelvic CT revealing of mass in the stomach; Figure 1b. Upper endoscopy revealing ulcerated, friable mass in the gastric antrum; Figure 1c. Histopathological staining of renal cell carcinoma (RCC) metastasis to gastric antrum.

Table 1. Literature review of renal cell carcinoma (RCC) metastases to the stomach from 2002 to 2022; Key: M – male, F – female, UGI - upper gastrointestinal, CT – Computerized tomography, CXR – chest x-ray

Age/Gender	Presenting Symptoms	Interval (years)	Diagnostic Imaging Modality	Prognosis	Treatment	Outcome
60/M	Melena	20			Endoscopic ablation	
78/M	Anemia	4			Total gastrectomy	Died at 5 months
61/F	Melena, anemia, epigastric pain	4		3b/0/0	None	Alive with disease at 6 months
69/F	UGI bleeding, melena	3			Palliative embolization	Died at 23 months
68/M	UGI bleeding, melena	11	CT, CXR		Chemotherapy (sunitinib)	Died at 2 years
67/F	Melena, dyspnea	5	CT	3a/X/X	Total gastrectomy	
	Melena, anemia	10			Wedge resection	No tumor recurrence at 18 months
78/M	Anemia	5			Endoscopic mucosal resection	Died at 6 months after surgery
69/M	Epigastric pain, nausea, emesis	4.2		2/X/X	Chemotherapy (tamoxifen)	Died at 19 months
77/M	None	6.3		3a/X/X	Radiation (interferon)	Died at 4 months
83/F	Melena, anemia	1.7		3b/X/X	Endoscopic ablation	Died at 5 months
65/F	UGI bleeding, melena, anemia	13.1		3a/X/X	Endoscopic ablation	Died at 3 months
69/M	Anemia, epigastric pain	9.3		3a/X/X	Endoscopic ablation, chemotherapy (sunitinib)	Alive with disease at 2 years
71/M	Abdominal pain	0			None	Alive with disease
53/M	Melena, dizziness	0			None	Died at 2 months after diagnosis
74/M	Melena	5	Upper endoscopy	3b/0/0	Wedge resection	Died 4 weeks after surgery
49/M	None	2	Upper endoscopy	3a/0/1	Partial gastrectomy	Died 15 months after surgery
69/M	Melena	19	Upper endoscopy	1/0/0	Wedge resection	No tumor recurrence at 12 months
75/M	None	3	CT	3/0/0	Chemotherapy (sunitinib)	No tumor recurrence at 6 months
59/F	None	1.5	CT	1b/0/0	Chemotherapy (sunitinib)	Alive with disease
65/M	Melena	9		3a/X/X	Polypectomy	Alive with disease at 7 years
79/M	Abdominal pain	0	Upper endoscopy	1b/0/1	Endoscopic submucosal resection	No tumor recurrence at 6 months
67/M	None	6	CT	3a/0/0	Chemotherapy (sorafenib tosylate)	No tumor recurrence at 20 months
70/M	Epigastric pain	6	Upper endoscopy	1a/0/0	Partial gastrectomy	No tumor recurrence at 14 months
61/M	UGI bleeding, melena, anemia	1.5	Upper endoscopy		Partial gastrectomy	Died 4 months after surgery
61/M	None	8	CT		Wedge resection	No tumor recurrence after 2 years
64/M	None	12	Upper endoscopy		Endoscopic submucosal dissection	No tumor recurrence after 23 years
80/M		20				
79/M	None	0	CT	1a/0/0	Endoscopic mucosal resection	No tumor recurrence at 6 months
71/F	Melena, anemia		Upper endoscopy		Palliative embolization	
71/F	Abdominal pain	11	CT, upper endoscopy	3a/X/X	Chemotherapy (sunitinib)	Alive with disease

S3633

Metastatic Gastric Adenocarcinoma in 23-Year-Old Female

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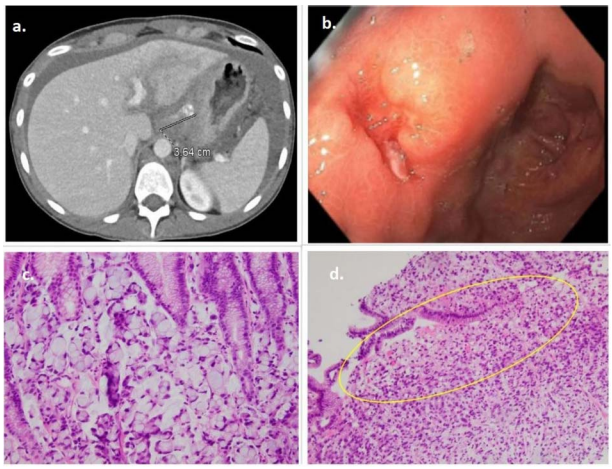
Introduction: Gastric cancer is the fourth most common malignancy in the USA. Since there are no screening recommendations in place, most gastric cancers are detected at a later stage in the USA. The average age of occurrence of gastric cancer is >40 years. Some of the most common risk factors include Helicobacter pylori infection, atrophic gastritis, ethnicity, and dietary factors.
Case Description/Methods: A 23-year-old female with a past medical history of attention deficit hyperactivity disorder presented with complaints of worsening cough and exertional dyspnea for 2 months. The patient also reported experiencing poor appetite, occasional nausea, vomiting, and unintentional weight loss of 10 pounds in 2 months with low back pain. The patient does not smoke cigarettes and drinks alcohol socially. No significant family history. Physical examination was unremarkable. Labs were normal except for mildly elevated ALP. Chest x-ray showed bilateral infiltrates. CT chest showed a miliary pattern of the lung parenchyma with multifocal patchy infiltrates and mediastinal and hilar lymphadenopathy. CT abdomen and pelvis (Figure) showed a calcified mass at the lesser curvature measuring up to 36.4 mm, with mixed attenuation lesion in the left hepatic lobe along with portal, celiac, and retroperitoneal lymphadenopathy; metastatic lesion within the L2 vertebral body with mild superior endplate compression and soft tissue extension to epidural space along with left portal venous thrombosis. Upper GI endoscopy (Figure) showed a large, infiltrative, ulcerated, noncircumferential mass on the lower curvature of the gastric body. Biopsy of the gastric mass revealed infiltrative adenocarcinoma, poorly differentiated with mucous and signet-ring features. Tumor cells were negative for E-cadherin expression and HER-2 immunohistochemical staining and positive for PD-L1 and MYC amplification. The plan was to perform palliative chemotherapy because of the advanced nature of the disease.
Discussion: Significant progress has been made in understanding gastric adenocarcinomas, but the pathways leading to the development of gastric cancer are still unclear. As gastric cancer exhibits heterogeneity and molecular expressions, it makes it more difficult to understand. Improvements in micro-array-based gene expression profiling can help us to better delineate the tumor behavior and help us with treatment.



[3633] **Figure 1.** a. CT abdomen - partially calcified gastric mass; b. EGD - A large infiltrative and ulcerated, noncircumferential mass on the lesser curvature of the gastric body; c. & d. Histopathology - H&E stain (20 x): gastric mucosa infiltrated by carcinoma cells with a signet-ring morphology.

S3634

Menetrier Disease: A Case Report

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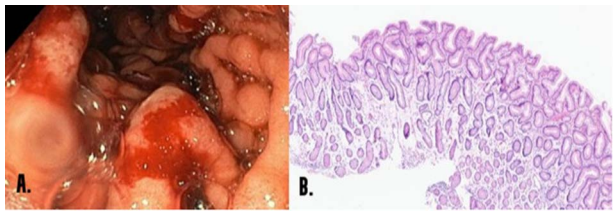
Introduction: Menetrier disease is a rare form of protein-losing gastropathy that is characterized by enlarged mucosal folds in the proximal part of the stomach. Although it is generally self-limited in children, adult patients are at increased risk of malignancies, thromboembolic phenomenon, and gastric outlet obstruction. Considering the high risk of morbidity and mortality, prompt diagnosis and management are needed. We present a rare case of Menetrier disease, occurring in a postpartum female patient.
Case Description/Methods: A 25-year-old female patient presented with nausea and abdominal cramping, diarrhea and weight loss of 9 kg five weeks after delivering her 3rd child. These symptoms were followed by anasarca. Her laboratory tests showed hypoalbuminemia of 1.5 g/dl, low total protein level of 3.4 g/dl, elevated urine protein-to-creatinine ratio of 0.8, and elevated random urine protein of 16 mg/dl with otherwise normal labs (e.g., complete blood count, comprehensive metabolic panel). An esophagogastroduodenoscopy revealed markedly diffuse thick folds in the gastric fundus, body and antrum (Figure A). Antral mucosa and antral-fundic transition zone mucosa showed foveolar hyperplasia with negative *Helicobacter pylori* and cytomegalovirus (CMV) staining (Figure B). She was treated with IV antiemetics, IV albumin and furosemide and started on a pureed, high-protein diet which resulted in a significant improvement in her symptoms.
Discussion: Although the pathophysiology of Menetrier disease is unclear, it has been associated with CMV infection in children and *H. Pylori* in adults. One hypothesis contributes the etiopathogenesis to an overexpression of the transforming growth factor-alpha. It commonly presents in male adult patients with epigastric pain, fatigue, weight loss, edema or/and vomiting. The diagnosis can be made based on histopathology showing extreme foveolar hyperplasia and atrophic changes in glandular epithelium. Moreover, endoscopy or barium study showing markedly enlarged gastric rugae along with laboratory findings of lymphopenia and reduced globulin, albumin, alpha-1-antitrypsin, cholesterol, ceruloplasmin and fibrinogen levels are indicative of this disease. Supportive treatment involves high-protein diet, proton pump inhibitors, and replacement of micronutrients. Treatment of *H. pylori*, CMV, and medications like octreotide or cetuximab showed improvement in disease progression in some patients.



[3634] **Figure 1.** Marked enlarged gastric rugae on endoscopy (A) and foveolar hyperplasia on biopsy (B).

S3635

Mantle Cell Lymphoma With GI Involvement Presenting as Bilateral Eyelid Swelling

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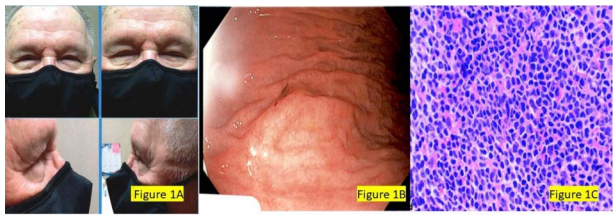
Introduction: Mantle cell lymphoma (MCL) is a subtype of non-Hodgkin lymphoma accounting for about 5% of non-Hodgkin lymphomas. Usual presentation is with lymphocytosis or widespread lymphadenopathy, extranodal manifestations involving bone marrow and GI tract are also common. We describe a case of MCL with GI involvement presenting as bilateral eyelid swelling.
Case Description/Methods: An 80-year-old Caucasian male presented to his ophthalmologist for swelling of his bilateral lower lids for the past few months. He denied any visual disturbance or any other associated symptoms. His past medical history was significant for hypertension. He worked as a farmer, with occupational exposure to glyphosate-based insecticides, and smoked a pack of cigarettes per day for 20 years. Physical exam was significant only for bilateral lower eyelid swelling (Figure A). Lab work was unremarkable. The ophthalmologist suspected amyloidosis, and a biopsy was sent to diagnose the underlying etiology. He then immediately referred the patient to oncology as biopsy had revealed MCL. GI was consulted to evaluate involvement of the GI tract. EGD showed subtle mucosal irregularity with irregular vascular pattern seen on the fundus and body of the stomach (Figure B), the duodenum was unremarkable. Colonoscopy showed normal colon mucosa. Biopsies confirmed mantle cell lymphoma involvement to the stomach (Figure C) and the duodenum, with minimal involvement to the colon. There was no evidence of H. pylori. Bone marrow biopsy was also positive for MCL. PET scan showed increased activity in the skin of the nose, enlarged lymph nodes in the mediastinum and inguinal region. It was determined to be stage IV mantle cell lymphoma. Patient was then referred to Radiation Oncology for evaluation of involved site radiation therapy (ISRT) of the eyelids and then targeted therapy with acalabrutinib rather than chemotherapy, given his age.
Discussion: Romaguera et al. described that 88% of patients with MCL have lower GI tract involvement, and 43% have upper GI tract involvement. Similar studies have since reaffirmed this association. Our case demonstrates that GI involvement with MCL can be seen despite normal endoscopic examination or with subtle mucosal changes, so biopsy should be considered. Eyelid swelling or mass is a rare presentation of MCL and a high degree of suspicion is required for diagnosis of MCL with this rare presentation.



[3635] **Figure 1.** Mantle cell lymphoma.

S3636

MALT Lymphoma: An Unlikely Diagnosis of Gastric Subepithelial Lesion

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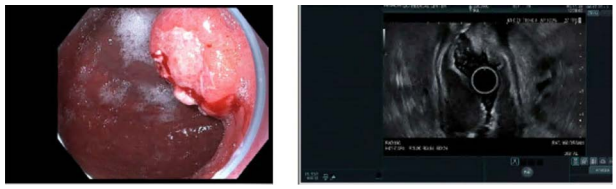
Introduction: MALT lymphoma is one of the most common types of extra-nodal non-Hodgkin lymphomas which originate from marginal zone B-cells in the gastrointestinal mucosal-associated lymphoid tissues. Although the most frequent location which MALT can be found is stomach, it is a rare disorder. Most cases are associated with h. pylori infection of the stomach. It is typically a low-grade neoplasia, characterized by a dense lymphoid infiltration that invades and destroys gastric glands and results in the so-called "lymphoepithelial lesion". We present a case that was an atypical presentation of Malt lymphoma.
Case Description/Methods: A 56-year-old male presented with anemia. Initial endoscopic evaluation revealed several large gastric subepithelial lesions in the antrum and body of the stomach that were ulcerated. After biopsies showed only chronic inflammation, the patient was referred to our center for further evaluation with EUS. There were multiple bulky confluent submucosal hypoechoic lesions seen with ulcerated mucosa overlying involving the gastric body, angularis and proximal antrum. Given the large size it was difficult to determine from which wall layer they originated. Also, there were multiple malignant appearing lymph nodes seen adjacent to the stomach. Biopsies through both fine needle biopsy and forceps biopsies, the pathology report revealed low grade B-cell lymphoma with clonal plasmacytic differentiation, suggestive of marginal zone of mucosa-associated lymphoid tissue lymphoma (MALT). (Figure)
Discussion: MALT lymphoma is typically an indolent low-grade tumor that usually presents with a more subtle endoscopic appearance. In this case of MALT lymphoma, the tumor was bulky, ulcerated and had metastasized to lymph nodes around the stomach. Also, there was no evidence of h. pylori infection. MALT lymphoma should considered on the differential diagnosis of any gastric lesion given the presentation can be so varied.



[3636] **Figure 1.** EGD and EUS showing the lesion.

S3637

Not Your Usual Gastritis - A Case of Iron Deficiency Anemia Leading to a Rare Diagnosis of Collagenous Gastritis

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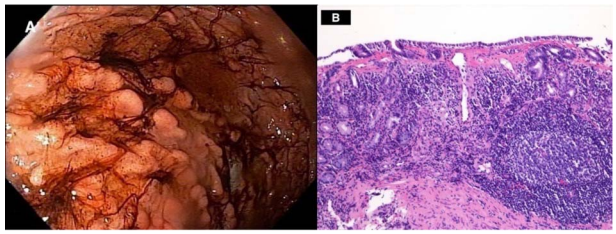
Introduction: Collagenous gastritis (CG) is a rare disease characterized by deposition of subepithelial collagen in the gastric mucosa with concomitant inflammatory infiltrate in the lamina propria on histopathology. We report a rare case of CG in a young adult who was treated successfully with topical open capsule budesonide.
Case Description/Methods: An 18-year-old male presented to the clinic for evaluation of iron deficiency anemia associated with exertional dyspnea, fatigue and intermittent episodes of melena. Initial studies were significant for hemoglobin of 5 g/dl, serum ferritin 3 ng/mL, serum iron 19 mcg/dL, and iron saturation of 6%. Prior to our evaluation, he had undergone EGD which was reported as having "gastritis" with negative Helicobacter pylori histopathology testing. The patient had required intravenous iron and packed red cell transfusions. We pursued repeat endoscopic evaluation. EGD showed hematin in the stomach with diffuse nodularity and friability in the stomach. No distinct ulcers were seen. Colonoscopy and video capsule endoscopy did not demonstrate any other abnormalities. Biopsies from the stomach revealed thickening of subepithelial collagen plate associated with chronic inflammation consistent with collagenous gastritis. Trichrome stain highlighted the thickened collagen plate and CD117 stain showed scattered mast cells without clustering. Treatment with budesonide 9 mg daily was subsequently started with clinical and hematological response on follow-up. (Figure)
Discussion: CG can be further characterized to two distinct phenotypes seen in children and adults. In young patients, the disease often occurs in isolation and presents with symptoms of abdominal pain and anemia. Endoscopic features include nodular patterns, mucosal atrophy and collagen band deposition seen in both age groups. Treatments of this condition remains a challenge due to lack of established effective therapy. Prior reports with conventional treatments such as anti-secretary agents, iron supplementation, hypoallergenic diet, and systemic corticosteroids have produced limited success. Topical budesonide has emerged as effective treatment options in achieving clinical and histopathological improvement. CG is a rare entity that should be kept in mind in young patients who present with iron deficiency and nodularity seen on endoscopic evaluation. Our case adds to the growing body of literature in support of topical budesonide in treatment of CG.



[3637] **Figure 1.** Image A shows diffuse nodular mucosa in the gastric body on EGD. Image B shows thickening of subepithelial collagen plate associated with marked chronic inflammation.

S3638

Metastatic Germ Cell Tumor of the Testis Presenting as Coffee Ground Emesis

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Introduction: Testicular cancer is the most common solid malignancy in males between the ages of 15 and 35. It is one of the most curable solid tumors with a 5-year survival rate of almost 95%. Testicular cancers are compromised of germ cell tumors (GCTs), which can be divided intoseminomatous and non-seminomatous GCTs (NSGCTs). We present a case of a 44 year old male presenting with scrotal swelling and coffee ground emesis, found to have metastatic non-seminomatous testicular cancer.
Case Description/Methods: A 44-year-old man with history of tobacco use presented with a one month history of scrotal swelling and an episode of coffee ground emesis. He also reported fevers, chills, night sweats, and unintentional weight loss. On presentation, he was tachycardiac. Physical exam was notable for a left, hard scrotal mass, tender to palpation; bilateral inguinal lymphadenopathy; and generalized abdominal tenderness. Laboratory testing showed elevated β- human chorionic gonadotropin and Alpha Fetal Protein levels. An ultrasound of the left scrotum showed a large mixed echogenicity mass. Computed tomography of the chest, abdomen, and pelvis revealed a left scrotal mass, concerning for metastatic disease to the liver and lungs along with mild mediastinal and upper abdominal retroperitoneal adenopathy. Gastroenterology was consulted for hematemesis and recommended an upper endoscopy. An EGD was done that revealed a non-bleeding gastric ulcer with a clean base in the gastric body, Forrest Class III (figure 1,2,3); normal duodenal bulb and second portion of the duodenum. Histopathology from the gastric ulcer showed a poorly differentiated neoplasm. Patient underwent left radical orchiectomy and was diagnosed with metastatic non-seminomatous testicular cancer, stage III C.
Discussion: Testicular cancer presents as a painless nodule or swelling of one testicle, but around 10% of patients have clinical manifestation that are due to metastatic disease. Common sites for metastatic disease include the lung, liver, bone, brain, and distant lymph nodes. Gastrointestinal metastasis is rare and occurs in $<$ 5% of patients with NSGCTs and $<$ 1% of patients with SGCTs. Metastasis to the GI tract occurs via direct extension from retroperitoneal/paraaortic lymph nodes and hematogenous spread. Due to their retroperitoneal location, the ileum and jejunum are the most common sites of metastatic disease within the GI tract. Our case represents gastric metastasis of NSGCT of the testis, which is exceedingly rare.

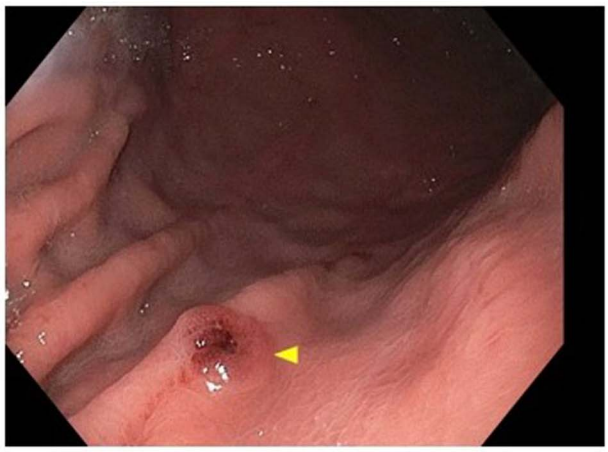

Figure (1)

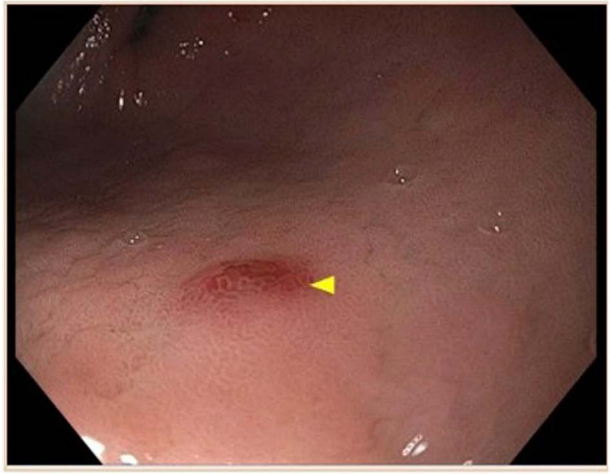

Figure (2)

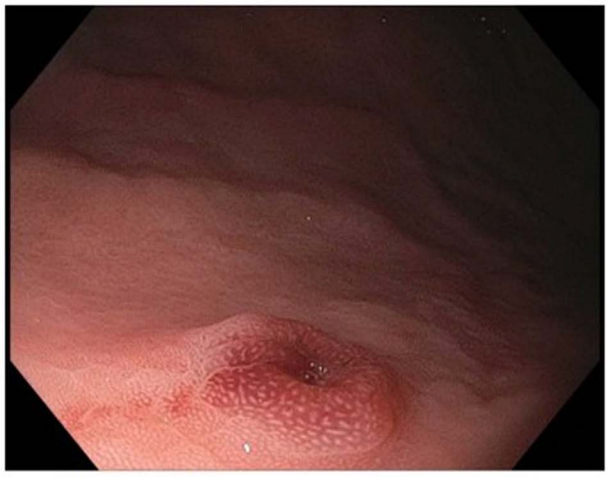

Figure (3)

[3638] **Figure 1.** Non-bleeding, clean based gastric ulcer (gastric body).

S3639

Nitromethane Ingestion Resulting in Severe Esophageal and Pyloric Stenosis: A Case Report

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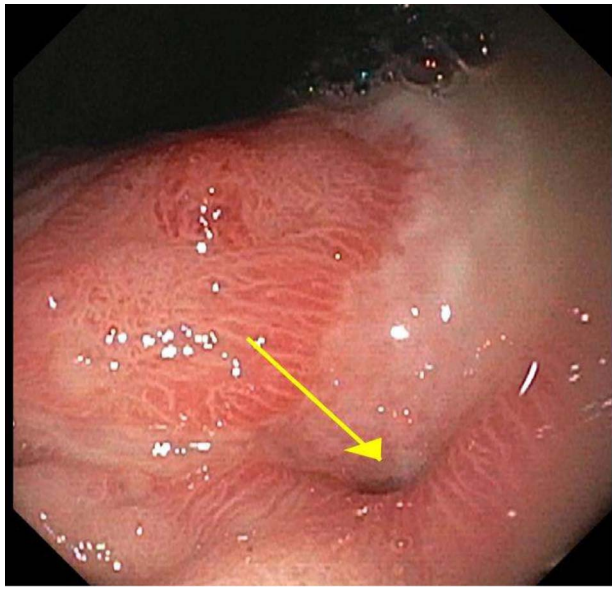
Introduction: Ingestion of caustic substances causes injury of the upper GI tract and can lead to significant morbidity and mortality. The pattern and severity of injury correlates to the composition, form, and amount of the substance consumed. Alkaline agents cause injury to the esophagus and acidic substances cause damage to the stomach. Stricture is the most common long-term complication and develops within 8-weeks of initial ingestion in about 80% of patients. To our knowledge, this is the first case of severe esophageal and pyloric stenosis secondary to nitromethane ingestion.
Case Description/Methods: A 48-year-old-man with schizophrenia presented with abdominal pain, dysphagia, and odynophagia 1-week after ingesting nitromethane. As he was outside of the window for evaluation of an acute caustic ingestion injury, EGD was not performed. Supportive management including a PPI was initiated. The patient returned 4-weeks later with continued dysphagia, aspiration pneumonia, and weight loss. EGD demonstrated esophageal stenosis, hematin in the gastric body, diffuse non-bleeding gastric ulcers, and severe pyloric stricture. EGD and NJ tube placement was attempted but unsuccessful secondary to severe pyloric stenosis with inability to pass a guidewire. General surgery performed gastrostomy and jejunostomy tube placement. The patient presented 2-months later with severe malnutrition. CT abdomen revealed a coiled GJ tube in a distended stomach. EGD demonstrated a segment of mid and distal esophageal stricture measuring 12mm in diameter, diffuse gastropathy, and severe narrowing of the pyloric channel. The prior GJ tube had migrated to the stomach so was exchanged for an externally removable gastrostomy tube for venting and NJ tube for nutrition. When the patient's nutritional status is optimized, he will likely require distal antrectomy and Bilroth II reconstruction for pyloric stenosis. (Figure)
Discussion: Ingestion of nitromethane has not been reported on to our knowledge and the extent of pyloric stricture demonstrated on EGD was noteworthy. Early contact with the medical system to identify and treat the damage from caustic ingestion is essential and unfortunately this patient's presentation was delayed. Further management will be targeted at alleviating symptoms, optimizing nutritional status, and engaging a multidisciplinary team to reduce the risk of recurrent ingestion. Potential late complications include esophageal adenocarcinoma or squamous cell carcinoma making ongoing surveillance for malignancy a priority.



[3639] **Figure 1.** Esophagoduodenoscopy indicating severe pre-pyloric narrowing and pyloric stricture.

S3640

Myoclonic Jerks and Chronic Diarrhea; The Challenges of Zollinger-Ellison Syndrome

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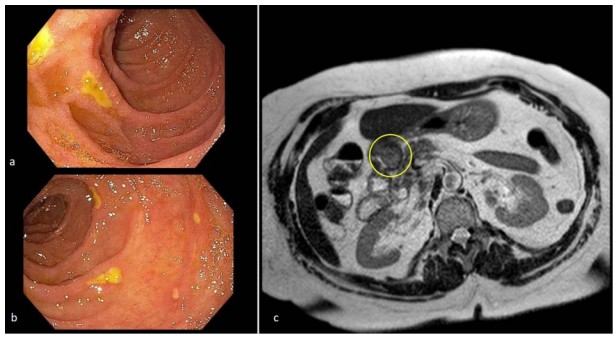
Introduction: Zollinger-Ellison Syndrome (ZES) is a rare disorder caused by hypersecretion of gastrin, causing peptic ulcer disease (PUD) and diarrhea. In most cases, inappropriate gastrin secretion is from duodenal or pancreatic neuroendocrine tumors (gastrinoma). Diagnosis of gastrinoma can be delayed as symptoms are nonspecific and can be misdiagnosed as other GI disorders.
Case Description/Methods: A 79yo female with DM, HTN, and peptic ulcer disease presented with myoclonic jerks and watery diarrhea. She was found to have severe hypomagnesemia and acute kidney injury (AKI). Notably she had diarrhea for months with several admissions with similar symptoms. Prior workup including celiac serology, vasoactive intestinal peptide level, fecal calprotectin, and colonoscopy were inconclusive. Lomotil was started for possible irritable bowel syndrome (IBS) with partial response. On this admission, stool osmolar gap was < 50, chromogranin A 8224 ng/mL and gastrin 596 pg/mL. MRI of the abdomen showed a 2.5cm mass-like thickening in the distal gastric antrum. Endoscopy showed gastritis and duodenal ulcers. EUS with FNA of the mass was inconclusive. Octreoscan revealed a somatostatin receptor-bearing neuroendocrine tumor (NET) in the distal stomach. She underwent distal gastrectomy and peri-pancreatic LN resection after hospitalization. Histopathology confirmed a well-differentiated NET with metastasis. Her diarrhea resolved and chromogranin A and gastrin normalized, 90 ng/mL and 43 pg/mL respectively. (Figure)
Discussion: Chronic diarrhea is a main symptom of gastrinomas. Diagnosis can be challenging due to the rarity of ZES and as many disorders cause diarrhea. Many patients are diagnosed with more common conditions such as IBS and GERD. Initial evaluation in suspected cases includes Gastrin levels which can be falsely elevated in patients on chronic PPI. Most gastrin-producing tumors arise in the duodenum (75%) and pancreas (20%). Less than 5% of patients have a tumor in the stomach, peri-pancreatic lymph nodes, liver, bile ducts, or ovary. EGD can show prominent gastric folds and pathology can be nonspecific. In patients with suspected ZES, chest and abdominal imaging can identify intra or extra-abdominal lesions. Octreoscan can localize the tumor's primary location and any metastasis. Consideration of ZES in patients with chronic diarrhea with timely evaluation and treatment can prevent the complications such as electrolyte abnormality, PUD, and decreases risk of metastasis.



[3640] **Figure 1.** a,b. Duodenal Ulcers. Image c. 2.5 cm mass-like thickening with restricted diffusion in the distal gastric antrum suspicious for neoplasm with an adjacent 1.5 cm lymphadenopathy.

S3641

Not Where You Want It! A Very Odd Occurrence of Fishbone Firmly Lodged in the Stomach

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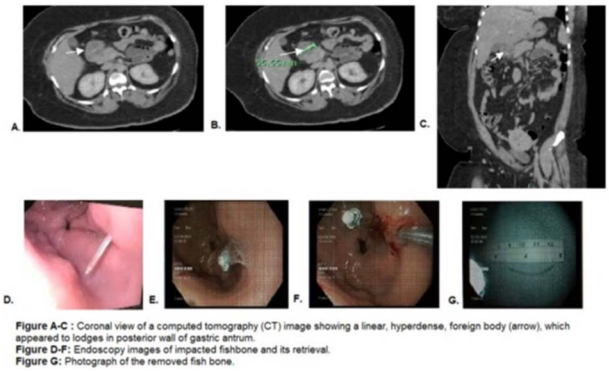
[1]Midwestern University, Mesa, AZ; [2]Mountain Vista Medical Center, Mesa, AZ.

Introduction: Inadvertently ingesting fish bones is frequent, and most fish bones pass through the gastrointestinal tract without causing any symptoms or complications within a week. Only about 10% to 20% of foreign bodies necessitate an endoscopic procedure, and less than 1% necessitate surgery. Here, we present a case of fish bone impaction in the stomach and its delayed consequences
Case Description/Methods: A 44-year-old female presented with an insidious onset of dull, aching left sided abdominal pain for the past 3 days with nausea and vomiting. She denies NSAIDs, no blood in stools or vomitus. She had eaten Tilapia for Christmas dinner 4 months prior and at that time felt a slight irritation in her throat that had passed, and no other symptoms until now. CT abdomen and pelvis showed a curvilinear foreign body in the pyloric region about 3cm in size. Subsequent EGD showed fishbone securely lodged in the posterior wall of gastric antrum, removed with snare through an overtube, to repair the defect the tissue edges were approximated and two hemostatic clips placed successfully. She was continued on Protonix orally for 4 weeks with complete resolution of symptoms (Figure)
Discussion: Fish bones make up about two-thirds of foreign bodies, and 75 percent of ingested foreign bodies get impacted in the oral cavity and laryngopharynx. Moreover, fish bone ingestion might present with a variety of clinical symptoms, including upper GI impaction, dysphagia, bowel obstruction, and silent perforation, as well as frank peritonitis. In our case, it's quite improbable that a fishbone was stuck in the pylorus for four months without any symptoms. Furthermore, foreign bodies lodged in the stomach are relatively unusual, as peristalsis normally drives them out. Complications have been reported in up to 35% of patients when sharp items pass through the stomach. Also, anything larger than 2 to 2.5 cm in diameter or longer than 5 to 6 cm in length should be removed immediately from the stomach since they will not pass through the pylorus, duodenum, or ileocecal valve. In conclusion, given its vague presentation and difficulties obtaining medical history (as only a small percentage of people recall eating them by mistake), we recommend through this case that clinicians must keep this possibility in mind and conduct timely investigations, as delayed intervention could result in bowel perforation.



[3641] **Figure 1.** A-C : Coronal view of a computed tomography (CT) image showing a linear, hyperdense, foreign body (arrow) which appeared to lodge in posterior wall of gastric antrum. Figure D-F: Endoscopy images of impacted fishbone and its retrieval. Figure G: Photograph of the removed fish bone.

S3642

Neuroendocrine Tumor Diagnosed While Performing Upper Endoscopy Surveillance of Gastric Intestinal Metaplasia

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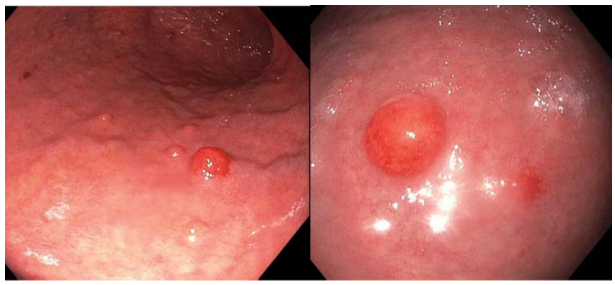
The Brooklyn Hospital Center, Brooklyn, NY.

Introduction: Gastric neuroendocrine tumors (GNET) are rare tumors arising from the enterochromaffin cells of the gastric mucosa, which comprise less than one percent of all gastric neoplasms and around eight percent of all gastrointestinal neuroendocrine tumors. Endoscopic resection is considered the best treatment option for type 1 GNETs. However, due to the rarity of this entity, no specific management guidelines are currently available.
Case Description/Methods: We present a case of an asymptomatic 47-year-old female diagnosed with a neuroendocrine tumor via upper endoscopy performed for surveillance of gastric intestinal metaplasia. She was found to have several gastric polyps (Figure), of which two had immunohistochemistry (IHC) and histology suggestive of well-differentiated neuroendocrine tumor (grade one). Notably, these polyps were found amidst the backdrop of chronic gastritis and elevated chromogranin (638.9) and gastrin (1088) levels. Biopsy results from one gastric polyp showed ink margin positive for tumor and the patient is currently scheduled to undergo endoscopic ultrasound (EUS) with polypectomy to ensure complete removal of tumors with clean margins.
Discussion: GNETs are classified into three distinct subtypes based on serum gastrin levels. Literature suggests that type 1 and type 2 GNETs are usually discovered incidentally on endoscopy. They appear as either multiple small polypoid lesions or as multiple smooth hemispherical submucosal lesions. Notably, type 1 GNETs are found commonly in the setting of atrophic gastric mucosa while type 2 GNETS are found in hypertrophic gastric mucosa. Of note, there has been growing literature on the increasing incidence of GNET type 1 in patients with gastric metaplasia in the setting of chronic atrophic gastritis. Our case supports the literature and emphasizes the importance of being able to identify the gross morphology of GNET while carrying a high index of suspicion for this rare yet clinically relevant entity. Furthermore, the origin of neuroendocrine tumor from gastric metaplasia is intriguing and invites further studies for understanding the pathophysiology.



[3642] **Figure 1.** Multiple inflammatory gastric polyps (blue arrows) visualized on upper endoscopy.

S3643

Rocky Mountain Spotted Fever Masquerading as Gastroenteritis

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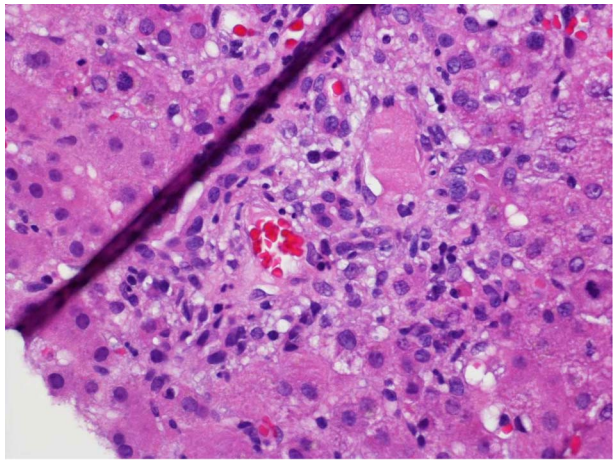
Introduction: Rocky Mountain spotted fever (RMSF) is a potentially lethal tick-borne illness. RMSF multiplies within blood vessels, causing endothelial damage before spreading hematologically to affect various organ. The classic triad of fever, rash, and a recent tick bite is rarely present at diagnosis. Less known, but more common initial presentations include hepatic and gastrointestinal (GI) symptoms such as anorexia, nausea, vomiting, abdominal pain, and elevated liver function tests (LFT's). We present a case of RMSF that demonstrates the diagnostic challenges associated with this illness.
Case Description/Methods: A 20-year-old male presented to the hospital with diarrhea and abdominal pain. He was tachycardic and febrile to 104ºF. Blood work was remarkable for elevated LFT's (AST 240 U/L, ALT 247 U/L, Tb 7.2 mg/dL and ALP 451 U/L). Abdominal computed tomography revealed ascites, periportal edema, and splenomegaly with infarction. The patient was empirically placed on piperacillin-tazobactam. Chronic liver disease and infectious disease work ups were unmemarkable. Over the next three days, his symptoms worsened and he had increasing leukocytosis and LFT's. A liver biopsy was obtained revealing portal-based inflammation consisting predominantly of neutrophils, and mild bile ductular proliferation (Figure). On the fourth day, a serologic test for RMSF IgM antibodies was positive. The patient's antibiotics were changed to doxycycline. One day after the antibiotic change his fever resolved, LFT's decreased and GI symptoms improved.
Discussion: RMSF is an uncommon disease that remains a diagnostic challenge for physicians. GI symptoms are the more prominent features in up to 80% of RMSF patients and often precedes the appearance of a rash. Liver involvement in RMSF is also common, most frequently manifesting as AST and ALT elevation, with jaundice being a poor prognostic factor. Liver biopsies reveal infection of the endothelial lining and periportal inflammation. The treatment of choice for RMSF is doxycycline and patients often experience rapid improvement within 72 hours. Delayed treatment can lead to fulminant disease with a mortality rate of 25%, thus prompt diagnosis and early administration of appropriate antibiotics is imperative. Clinicians should be educated about the early manifestation of RMSF and consider it among the differential diagnoses in a patient with fever, GI symptoms, and hepatic involvement.



[3643] **Figure 1.** Liver biopsy in Rocky Mountain spotted fever revealing a nonspecific reactive hepatitis with peri-portal inflammation and surrounding bile ductular inflammation and proliferation.

S3644

Metastatic Gastric Cancer and Krukenberg Tumor in Pregnancy - A Case Report

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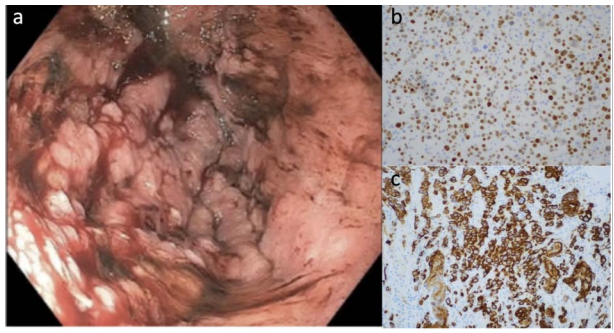
Introduction: Gastric cancer affects 1 million people per year. It's the 5th most diagnosed and 3rd most lethal cancer. It's most common after age 50 and it affects men twice as much as women. Symptoms are non-specific including dyspepsia, early satiety, abdominal pain, and weight loss, and usually manifest with advanced disease. Metastatic gastric cancer to the ovaries (Krukenberg tumor) is rare and even less frequent in pregnancy. We present a case of a 30-year-old pregnant woman with metastatic gastric adenocarcinoma and Krukenberg tumor.
Case Description/Methods: A 30-year-old, 16-week pregnant woman presented with a 3-week history of lower back pain. Initial workup revealed severe pancytopenia and hypercalcemia. Patient underwent bone marrow biopsy showing metastatic adenocarcinoma of mucinous origin positive for CK7 and weakly positive for CDX2, favoring an intraluminal GI source. MRI revealed multiple metastatic bone lesions and a left adnexal nodule but failed to find the primary source. Upper endoscopy showed diffuse nodular-appearing mucosa, suspicious for linitis plastica. Pathology revealed poorly-differentiated adenocarcinoma positive for CDX2, villin, CK7 and pan-cytokeratin (Figure). Patient underwent diagnostic laparoscopy with left oophorectomy showing metastatic, poorly-differentiated carcinoma with gastric primary origin, consistent with Krukenberg tumor. She received palliative chemotherapy and continued with pregnancy. Unfortunately, patient decided to relocate to a different city after 5 cycles of chemotherapy and was lost to follow up.
Discussion: Gastric cancer affects most commonly older men. Its occurrence in women of reproductive age is uncommon and diagnosis during pregnancy is extremely rare. In such cases, presentation can be mistaken for common pregnancy-related symptoms, delaying diagnosis. This presentation raises both diagnostic and medical management issues. In our case, patient didn't have any gastrointestinal symptoms, which made the diagnosis even more challenging. Her advanced disease also presented with metastasis to the left ovary, known as Krukenberg tumor which is a rare condition by itself with only a handful cases

reported in pregnant women. Due to its very low incidence, there are no specific guidelines to treat these patients with such a complex disease and most of them receive standard chemotherapy with low probability of survival.



[3644] **Figure 1.** Upper endoscopy showing diffuse nodular-appearing mucosa, suspicious for linitis plastica (a). Pathology showing poorly-differentiated adenocarcinoma positive for CDX2 (b) and pan-cytokeratin (c).

S3645

A Case of Gastric Plasmablastic Lymphoma in a 30-Year-Old Immunocompetent Man

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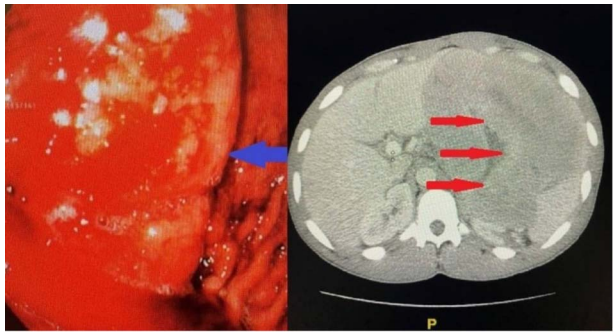
Introduction: Plasmablastic lymphoma (PBL) is a rare lymphoma initially predominantly seen in the oral cavity of HIV-positive individuals. Only a few cases in HIV-negative individuals and patients with no known immunocompromised status have been reported. Herein is a gastric PBL in a 30-year-old immunocompetent patient creating a diagnostic challenge.
Case Description/Methods: A 30-year-old male customer care agent presented with a complaint of worsening epigastric pain. He was seen at a different hospital one month prior and diagnosed with a gastric mass with an inconclusive biopsy result. He reported nausea, hematemesis, and unintentional weight loss over three months. He denied any immunocompromised state, alcohol, and tobacco use. On physical examination, he was tachycardic with moderate epigastric tenderness. He had mild anemia with leukocytosis, positive fecal occult blood, and CT revealed a 16cm x 17cm x 16cm fundus mass in the stomach (Image 1). The Pathological and immunochemistry reports obtained after EGD (Figure) with EUS and biopsy were in keeping with PBL. Immunodeficiency workup done was negative so was bone marrow biopsy for lymphoma. He received dose-adjusted - etoposide, prednisone, vincristine, cyclophosphamide, doxorubicin, and rituximab (da-EPOCH). He is to continue treatment courses outpatient.
Discussion: PBL is a very aggressive tumor with a median survival of 14 months and its incidence is unknown due to its rarity. A handful of case reports and small case series have been published, which stipulated the median age of diagnosis at 55 years in HIV-negative patients, with a female predominance in this group and the gastrointestinal tract as the most common tumor site (20%). PBL is difficult to diagnose because it mimics several other neoplasms. The diagnostic challenges with our patient include the initial inconclusive biopsy, the variability in his clinical presentation, and atypical immunohistochemistry findings. We are writing this to add to the available literature on cases reported that may contribute to a better understanding of this rare tumor.



[3645] **Figure 1.** The image on the left shows a gastric mass seen on EGD. The image on the right is a gastric mass seen on computerized tomography of the abdomen and pelvis.

S3646

Double Pylorus: A Case of Chronic Peptic Ulcer Disease Leading to Formation of a Gastroduodenal Fistula

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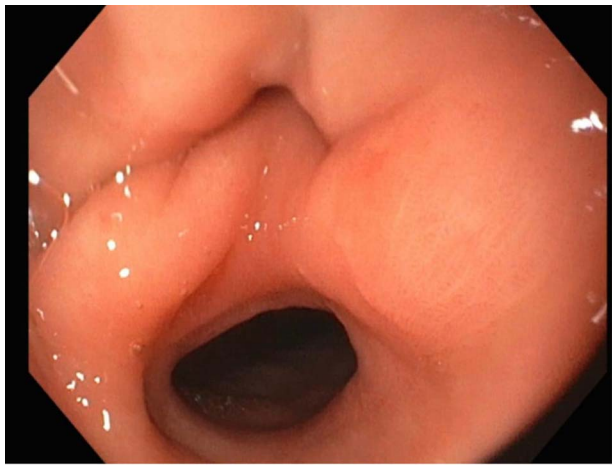
Introduction: Double pylorus is a rare condition, either congenital or acquired, that results in a gastroduodenal fistula, forming an additional connection between the antrum of the stomach and the duodenal bulb.
Case Description/Methods: A 75-year-old female with past medical history of cervical cancer (in remission), hypertension, tobacco use, chronic constipation, and peptic ulcer disease (PUD) presented to the emergency department (ED) with diffuse abdominal pain and blood in her stool. Patient reported intermittent black stools with occasional rectal bleeding. She was using non-steroidal anti-inflammatory drugs (NSAIDs) for headaches. In the ED, patient was hypertensive to 170/75, but other vital signs were stable. Her labs showed a hemoglobin of 12.6 g/dL (normal 12-16 g/dL) without evidence of coagulopathy. Imaging of the abdomen and pelvis did not show any acute findings. Esophagogastroduodenoscopy (EGD) showed two openings to the duodenal bulb, a functional pylorus inferiorly and an accessory channel superiorly (Figure). The two lumens of the duodenum appeared normal without evidence of acute ulceration. Colonoscopy showed a non-bleeding arteriovenous malformation in the proximal ascending colon and internal hemorrhoids, which were likely the cause of her bleeding.
Discussion: Acquired double pylorus (ADP) is usually an incidental finding with a prevalence of approximately 0.001-0.4%, affecting males and females in a 2:1 ratio, respectively. Most cases of ADP are secondary to PUD, often an ulcer in the antrum of the stomach or duodenum penetrating directly into the duodenal bulb. Patients can be asymptomatic with ADP, but some may experience vomiting, epigastric pain, or dyspepsia. Melena may also be present with active ulceration. Initial diagnostic approach to ADP should include EGD, assessing NSAID or corticosteroid use, and H. pylori testing. Treatment involves proton-pump inhibitor administration or other mucosal protective agents, avoidance of NSAIDs and steroids, and eradication of H. pylori. Endoscopic division of the tissue bridge with a sphincterome should be considered if severe symptoms of gastric outlet obstruction persist. In severe cases where perforation, refractory bleeding and/or obstruction occurs, a surgical consultation should be pursued. The accessory pathway will typically remain patent for life, but rarely, the channel will close completely or merge to form a single connection to the duodenal bulb.



[3646] **Figure 1.** Double pylorus on EGD. The accessory channel is observed superiorly, revealing a gastroduodenal fistula.

STOMACH

S3647

A Rare Case of Phlegmonous Gastritis in a Previously Healthy Male

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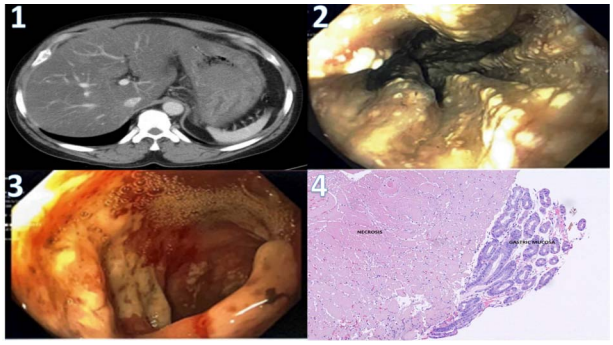
Introduction: Phlegmonous gastritis (PG) is a rare and often fatal disease characterized by severe bacterial invasion of the gastric wall.[1] Due to its rarity and subtle clinical manifestations early diagnosis is difficult, causing delays in identification and treatment leading to increased mortality.[2] We present a case of a previously healthy male who developed PG and responded well to antibiotics.
Case Description/Methods: A 55-year-old male with history of hypertension and hyperlipidemia presented to an emergency room with odynophagia, intractable nausea, and coffee ground emesis for one day. On arrival, he was hemodynamically stable, afebrile, and labs showed a white count of 19,500/mcL, hemoglobin 17 g/dL, ESR 46mm/hr, and negative for HIV, syphilis, and hepatitis. Blood cultures were negative. CT abdomen showed thickening of the gastric wall with prominent gastric folds (Figure 1). He was started on vancomycin, piperacillin/tazobactam, and pantoprazole. EGD demonstrated severe esophagitis, gastritis, and ulcerative duodenitis with prominent gastric folds and excessive purulent debris with areas of micro-abscesses (Figure 2-3). Biopsies showed necrosis in the esophagus, stomach and duodenum with areas of fibrin thrombi and eosinophils (Figure 4-6). Immunochemical and special stains were negative for H. pylori, CD 68, CMV, congo red, and PAS. Vasculitis was considered due to the areas of patchy necrosis, but anti-CCP, ANA, c-ANCA, p-ANCA, Scl-70 Ab, anti-centromere Ab, anti-RNA polymerase III Ab, and complement C3 and C4 were negative, with rheumatoid factor elevated at 15 InU/mL (normal 0-12). During his hospital stay he received broad-spectrum antibiotics, prednisone, and required total parenteral nutrition for 36 days until he was able to tolerate oral intake, then he was discharged home tolerating a soft diet.
Discussion: PG is caused by bacterial invasion of the gastric submucosa with possible further invasion into the mucosa and serous membranes due to a compromised mucosal wall as in gastritis, or via lymphatic spread from intra-abdominal infections or bacteremia. Pre-existing chronic alcohol use, immunocompromised states, and malignancy have been implicated as associated factors.[1] There have been only a few reports of PG in previously healthy individuals without comorbidities as in this case. Antibiotics have led to drastic decline in mortality from as high as 92% before the advent of antibiotics to roughly 42% at present day.[1] If medical management is ineffective, surgery may be performed.



[3647] **Figure 1.**

S3648

Acquired Double Pylorus Due to Peptic Ulcer With Fistula Closure Following PPI Therapy

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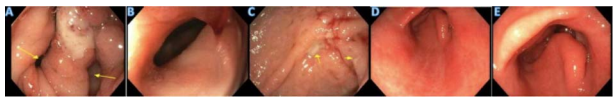
Introduction: Double pylorus is a rare condition that consists of a communicating channel between the gastric antrum and the duodenal bulb. Double pylorus can be a congenital condition, or more commonly, acquired as a sequelae of peptic ulcer disease (PUD). Estimates of the prevalence of double pylorus vary, ranging from 0.001-0.04% of upper endoscopies, and is often discovered incidentally on endoscopy performed for other indications.
Case Description/Methods: Our patient is a 70-year-old woman with chronic obstructive pulmonary disease who presented to the hospital with epigastric pain. She reported taking ibuprofen over the counter. Abdominal examination was positive for epigastric tenderness. Lab tests showed hemoglobin of 6.3 g/dL with a prior baseline of ~ 10 g/dL. She underwent esophagogastroduodenoscopy (EGD) showing 20mm gastric ulcer at the antrum with fistula formation into the duodenal bulb (Figure 1A and 1B). Two non-bleeding cratered duodenal ulcers without stigmata of bleeding were found in the duodenal bulb (Figure 1C). Gastric biopsies were taken and returned negative for Helicobacter pylori. The patient was discharged home and advised to avoid tobacco, alcohol, illicit drugs, and NSAIDs. She was also prescribed a proton pump inhibitor to be taken twice daily. She had a follow up EGD three months later showing scarring from healed ulceration in the gastric antrum and pre-pyloric region with closure of the fistula (Figure 1D and 1E). No residual ulcers were present.
Discussion: Acquired double pylorus is associated with *Helicobacter pylori* infection as well as ingestion of NSAIDs. These exposures are known to predispose patients to development of gastric ulcers, which when penetrating, can result in fistula formation. Interestingly, chronic obstructive pulmonary disease (present in our patient) is also a recognized risk factor. Double pylorus does not have specific symptoms and can include epigastric pain, dyspepsia and upper GI bleeding. Many patients are diagnosed incidentally on EGD. Management of acquired double pylorus should focus on protecting the gastric mucosa to promote healing. Noxious stimuli such as NSAIDs should be avoided. *Helicobacter pylori* should be treated when indicated. In the majority of cases, treatment does not result in closure of the fistula. Most fistulas remain open and in some cases convergence of the fistula with the normal pyloric ring occurs. However, closure of the fistula with treatment is rare.



[3648] **Figure 1.** (A) Pre-pylori stomach with native pylorus denoted by left arrow and new fistula between gastric antrum and duodenal bulb denoted by right arrow. (B) Pre-pyloric stomach with fistula opening to the duodenum. (C) Small duodenal ulcers (yellow arrows) (D) Gastric Antrum (E) Pre-Pyloric stomach.

S3649

Choroidal Melanoma: A Rare Cause of Gastric/Duodenal Pigmented Macules

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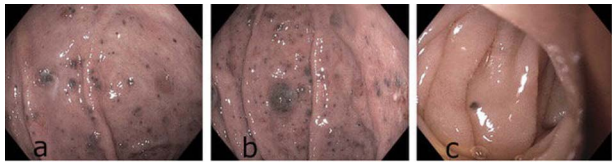
Introduction: Choroidal melanoma is the most common primary intraocular malignancy. Two to four percent of newly diagnosed patients have evidence of metastatic disease. Up to half of patients will develop metastatic disease. The liver is the primary site of metastasis as the tumor spreads hematogenously. Metastasis to the gastrointestinal tract is rare in ocular melanoma in contrast to cutaneous melanoma. We present a case of ocular melanoma with metastasis to the gastrointestinal (GI) tract.
Case Description/Methods: An 81-year-old female with a history of choroidal melanoma of the left eye diagnosed in 2015 treated with radiotherapy presented to the hospital with fatigue and weight loss of 30 pounds over the last few months. On admission she was normotensive and afebrile. On physical exam her abdomen was distended and nontender. Labs were notable for Cr 2.3 mg/dL, AST 698 IU/L, ALT 286 IU/L, ALP 488 IU/L, Albumin 2.3 g/dL, Total bilirubin 4.9 mg/dL, WBC 13.3 K/uL, Hgb 11.7 g/dL, platelets 206 K/uL and INR 1.6. Computed tomography without contrast of the abdomen/pelvis showed lobular contour of the liver with multiple hyperdense foci scattered throughout concerning for metastases. Ultrasound with dopplers revealed portal vein thrombosis. Patient underwent endoscopy for variceal screening with no evidence of varices. However, scattered throughout the stomach were hyperpigmented macules of variable size (a, b). In her duodenum, there were additional lesions (c) and two non-bleeding ulcers with pigmented lesions. Biopsies were consistent with metastatic melanoma. Ultimately, hospice was pursued.
Discussion: Choroidal melanoma metastases in the GI tract are rare. When patients with a history of melanoma, regardless of its origin, present with nonspecific symptoms, physicians should have a high suspicion for metastatic disease. Metastases are endoscopically diagnosed as pigmented or amelanotic nodules, ulcerations, macules or mass. Patients are typically treated with palliative surgery or immunotherapy. Prognosis is typically poor with a median survival rate of 4 to 6 months.



[3649] **Figure 1.** Endoscopic images of hyperpigmented lesions in the stomach (a, b) and duodenum (c).

S3650

Capturing Hearts and Minds: A Severe Case of Pernicious Anemia Illustrates a Wide Range of Clinical Manifestations in Cobalamin Deficiency

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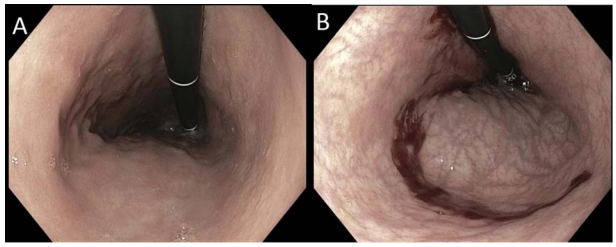
Introduction: Worldwide, pernicious anemia is the most common cause of cobalamin deficiency. Diagnosis of pernicious anemia is often delayed due to insidious onset and wide range of clinical presentations. Individuals may not develop symptomatic anemia for years due to slow progression of anemia and physiologic acclamation. Atypical presentations include neuropsychiatric manifestations without anemia, hemolytic anemia, normocytic anemia, or macrocytosis with normal cobalamin levels.
Case Description/Methods: We present the case of a 63-year-old woman with known hypertension, hyperlipidemia, peripheral arterial disease who presented to the emergency department for 1 month of early satiety, 24 pound weight loss, and substernal chest pain. Physical exam and vital signs were unremarkable. Initial laboratory evaluation was notable for normal electrolytes, normal liver enzymes, elevated LDH 2173 units/L, mildly elevated high-sensitivity troponin, undetectable cobalamin level, normal folate level, white blood cell count 4.71, hemoglobin 8.2 g/dL, MCV 137 fL, and platelets 430. Subsequent labs included normal ferritin, methylmalonic acid of 1890 nMol/L, serum gastrin 338 pg/dL, positive intrinsic factor antibodies, and undetectable parietal cell antibodies. Esophagogastroduodenoscopy performed the next day was notable for diffusely atrophic stomach. The pH of the aspirated fluid was 7. Pathology was notable for chronic gastritis consistent with atrophic autoimmune gastritis. Her evaluation was consistent with pernicious anemia and autoimmune gastritis, and she was started on high-dose cyanocobalamin injections. She had significant improvements in fatigue and chest pain within 1 week, and hemoglobin, MCV, B12 levels normalized within 2 months (Figure 1).
Discussion: Our case illustrates the wide range of clinical, laboratory, endoscopic findings associated with autoimmune metaplastic atrophic gastritis. Individuals with anemia can present with signs of end organ ischemia. Our patient presented with chest pain and laboratory evidence consistent with non-ST segment myocardial infarction. In addition, labs may show increased lactate dehydrogenase, increased indirect bilirubin, and decreased haptoglobin due to erythropoiesis dysfunction and subsequent intramedullary hemolysis. The diagnosis of atrophic gastritis is confirmed with endoscopic findings and histology. Diagnosis of pernicious anemia is made with combination of clinical findings, cobalamin deficiency, and antibodies to parietal cells or intrinsic factor.



[3650] **Figure 1.** (A) and (B) both represent retroflexed views of the stomach on EGD. Note the lack of rugation and visible sumucosal vessels. In image (B), boipsies were taken prior to image snapshot.

S3651

Perforated Gastric Volvulus: A Rare Life-Threatening Complication of Paraesophageal Hernia

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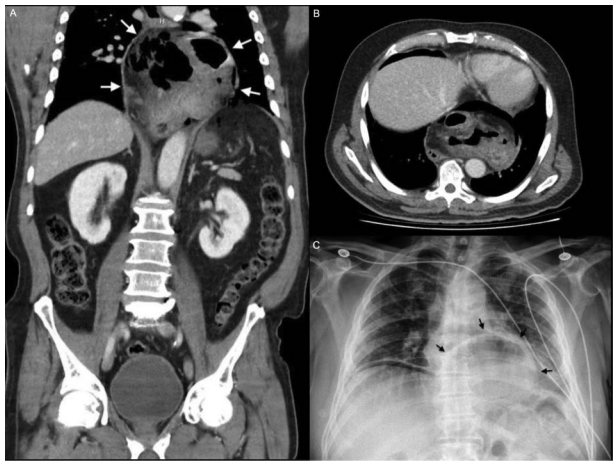
Introduction: Gastric volvulus is a rare condition characterized by abnormal rotation of the stomach along its long (organoaxial) or short (mesenteroaxial) axis. Rotation of more than 180° may lead to complete gastric outlet obstruction, strangulation with necrosis, and perforation. We present a case of a patient with paraesophageal hernia that was complicated with perforated gastric volvulus.
Case Description/Methods: A 69-year-old male with history of diabetes, peptic ulcer disease, and paraesophageal hernia presented with worsening epigastric abdominal pain for 3 days. The pain radiated to the left shoulder and worsened with inspiration and food intake. It was associated with an episode of coffee-ground emesis one hour before the presentation. He reported similar symptoms a year ago when he was diagnosed with peptic ulcer disease. On exam, the vitals were stable. He had mild diffuse abdominal tenderness with increased tenderness over the epigastric region. Electrocardiogram was normal. Laboratory studies showed WBC of 23.7 K/uL, lactic acid of 3.2 mmol/L, and hemoglobin of 11.5 g/dL. Liver function tests and lipase were normal. Chest x-ray showed pneumoperitoneum and a large hiatal hernia. CT abdomen and pelvis showed a perforated mesenteroaxial gastric volvulus with extensive free fluid and air. The patient underwent emergent surgery with laparoscopic paraesophageal hernia repair, gastropexy, and perforation repair. He had a jejunostomy feeding tube placed. The patient experienced no postoperative complications and was discharged on day three (Figure 1).
Discussion: Acute gastric volvulus is a life-threatening condition associated with a 5-28% risk of ischemia. It carries high mortality but is commonly misdiagnosed due to its rarity, variable presentation, and non-specific imaging findings. 30% of patients with gastric volvulus do not present with the classic features of epigastric pain, unproductive retching, and failure of nasogastric tube insertion (Borchardt's triad). Only 4% of hiatal hernias are complicated by gastric volvulus with organoaxial volvulus being the most commonly associated type. Our case is unique as the patient had a mesenteroaxial volvulus that has not been widely reported. This case emphasizes the importance of considering gastric volvulus as a differential in patients with paraesophageal hernia presenting with abdominal pain. A high index of clinical suspicion is needed as timely diagnosis and prompt surgical intervention can be lifesaving.



[3651] **Figure 1.** (A and B) CT scan of the abdomen and pelvis (coronal and axial view) showing a markedly distended abdomen in the thoracic cavity. (C) Chest x-ray showing pneumoperitoneum and retrocardiac air-fluid mass.

S3652

Osseous Metaplasia in a Hyperplastic Gastric Polyp

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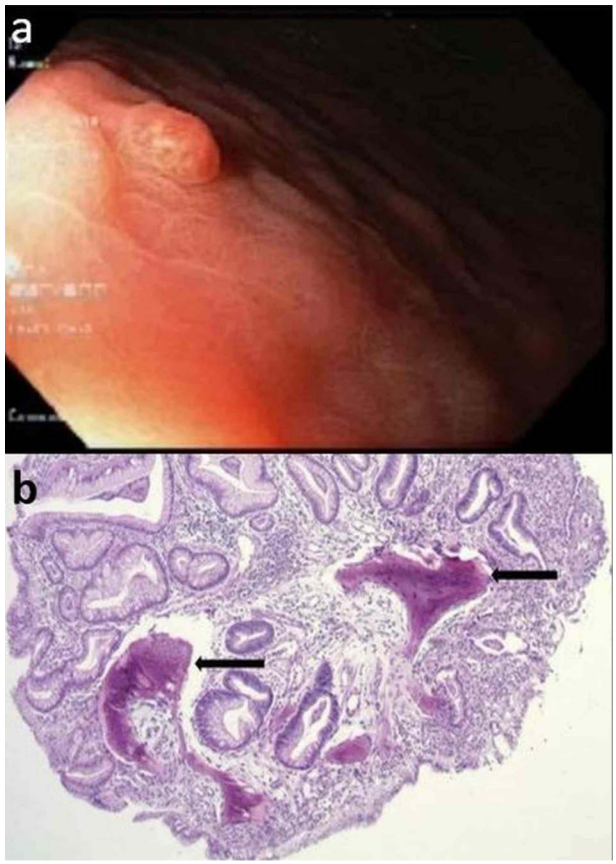
Introduction: Osseous metaplasia (OM) in the gastrointestinal tract is rare and typically associated with malignant gastrointestinal tract lesions. Benign gastric polyps containing OM are exceptionally rare with only six other cases reported to the best of our knowledge. A literature review also suggests a possible association with chronic liver disease. We describe the case of an elderly woman with cirrhosis who was found to have a solitary gastric polyp on outpatient esophagogastroduodenoscopy (EGD). This was resected and histopathology noted a hyperplastic polyp containing osseous metaplasia. The risk of future neoplastic transformation of osseous metaplasia is unknown.
Case Description/Methods: A 71-year-old Caucasian woman with history of Type 2 diabetes mellitus and compensated cirrhosis secondary to non-alcoholic steatohepatitis, with no gastrointestinal symptoms, underwent outpatient EGD to screen for esophageal varices. EGD revealed mild gastric antral erosions and a 2 mm sessile polyp in the proximal gastric body (Fig. 1a) with no macroscopic neoplastic features. The polyp was resected with cold biopsy forceps and histological exam noted an inflammatory hyperplastic polyp with multiple foci of osteoblast-lined OM (Fig. 1b arrows). Random gastric biopsies showed mild chronic gastritis negative for Helicobacter pylori. The rest of EGD was unremarkable and patient discharged home in stable condition to continue routine outpatient care for her cirrhosis.
Discussion: Osseous metaplasia in benign gastric polyps is a rare observation first reported by Ohtsuki et al in 1987 and has continued to intrigue clinicians as to its exact pathogenesis or relevance. Pathogenesis of OM in benign lesions is suspected to involve reactive osteoblast stimulation from chronic mucosal inflammation. *Helicobacter pylori* infection has not been associated. A majority of the reported cases of OM in benign gastric polyps noted a form of chronic liver disease, including chronic viral hepatitis and cirrhosis. It is also unknown if OM represents a future risk for future neoplastic transformation. Continued reporting of similar cases is expected to help elucidate any clinical relevance of OM, any comorbid associations and possibly provide guidance on the optimal management or endoscopic surveillance for affected individuals.



[3652] **Figure 1.** (a) Endoscopic image showing sessile gastric polyp (a). (b) Histology slide (40× magnification) showing foveolar hyperplasia, background of abundant inflammation and multiple foci of osseous metaplasia (arrows).

S3653

Primary Gastric Synovial Sarcoma: A Case Report

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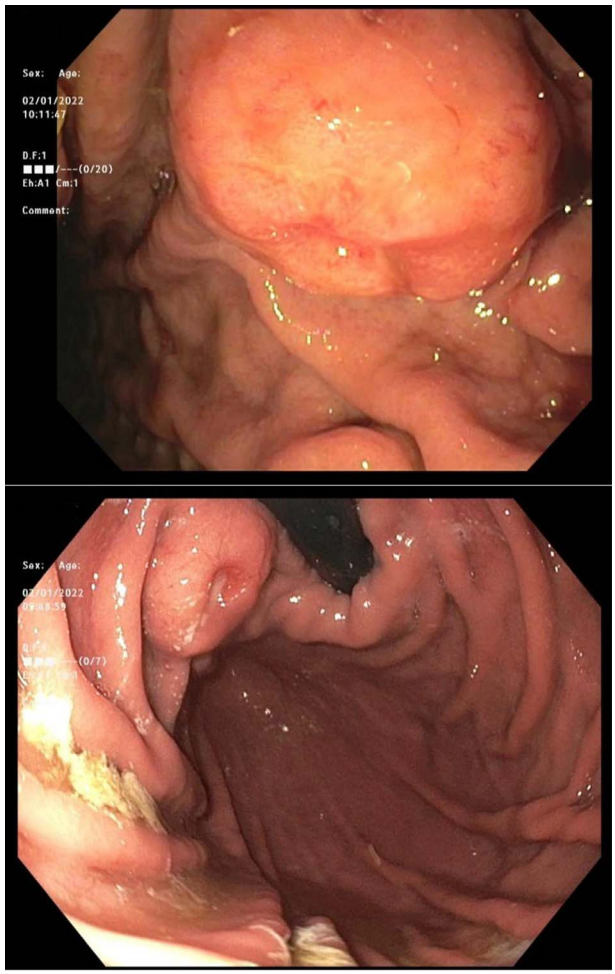
Introduction: Synovial sarcoma is an uncommon mesenchymal tumor, typically involving the extremities of young adults. This case outlines an especially rare occurrence of a primary synovial sarcoma occurring in the stomach of a 37-year-old female who ultimately required esophagogastrectomy.
Case Description/Methods: The patient is a 37-year-old female who initially presented with epigastric pain intermittently for more than a year. Her pain persisted and worsened. Her initial workup was negative and included an EGD, CT of the abdomen/pelvis, and HIDA scan. Several months later, an EGD was repeated due to ongoing symptoms. Her repeat EGD revealed a small ulcerated mass in the cardia, a c-KIT negative stromal tumor on histology. An EUS showed a 15mm, submucosal, ulcerated gastric mass, 1 cm from the GE junction (Figure 1). A primary synovial sarcoma with immunohistochemical stains and FISH technology for *SS18* translocation was identified. PET scanning showed no distant metastasis. The patient underwent a laparoscopic esophagogastrectomy with Roux-en-Y esophagojejunal anastomosis. Her final pathology confirmed a spindle cell sarcoma measuring 1.8 cm. Her post-operative course was uncomplicated. No further adjuvant radiation or chemotherapy was indicated.
Discussion: Synovial sarcomas account for approximately 10% of soft tissue tumors. Cell origin of these tumors are unknown, despite derivation of the name from the histological resemblance to synovial cells. These tumors are a result of chromosomal translocation t(X;18)p(11;qe1) which fuses the *SS18* gene from chromosome 18 to the *SSX* gene on the X chromosome. Depending on which translocation occurs either a biphasic tumor (*SS18-SSX1*) or a monophasic tumor (*SS18-SSX2*) results. Synovial sarcomas found in the gastrointestinal tract are exceptionally rare. As of 2021, 45 cases have been in the stomach. Mortality of localized primary synovial sarcomas is 75% at 5 years and 34% at 10 years in a recent large case series. Poor prognostic factors include a tumor diameter >5 cm and microscopically positive margins Regarding treatment, resection is the primary option depending on size and location of the tumor. This patient underwent an esophagogastrectomy with clear margins. Rate of local recurrence is also high (30-50%) further supporting an esophagogastrectomy. Radiation is sometimes used as adjuvant or neoadjuvant therapy, and chemotherapy is typically reserved for metastatic disease.



[3653] **Figure 1.** 15 mm, submucosal, ulcerated gastric mass, 1 cm from the GE junction.

S3654

Primary Gastric Tuberculosis Without Pulmonary Involvement Presenting as Chronic Reflux With Anemia

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Introduction: Gastrointestinal (GI) tuberculosis (TB) accounts for only 1-3% of TB cases worldwide. Of these GI cases, the ileocecal region is the most affected site. Gastric Tuberculosis (GTB) only accounts for 1-2% of GI TB. When present, GTB is typically seen in conjunction with pulmonary tuberculosis or associated with an immunodeficient state. Primary, isolated GTB in the immunocompetent is particularly rare. When present, GTB commonly presents as gastric outlet obstruction but can also have symptoms that mimic peptic ulcer disease or malignancy. The diagnosis requires biopsy showing caseating granulomas or the presence of acid-fast bacilli. We present a case of isolated GTB in routine workup of a patient with chronic anemia.
Case Description/Methods: 60-year-old Honduran male with history of Parkinson's disease presented for evaluation of constipation, reflux, and chronic anemia. He underwent endoscopy and colonoscopy revealing several gastric submucosal nodules as well as a duodenal ulceration (Figure 1). He subsequently had endoscopic ultrasound with biopsy for two of these nodules which was remarkable for chronic granulomatous inflammation with necrosis and inflamed fibrous tissue, and caseating granulomatous inflammation respectively (Figure 2). Acid-fast stain showed an indeterminant rod-shaped organism. He tested negative for TB polymerase chain reaction but positive for QuantiFERON-TB. There was concern for disseminated TB and CT scan chest/abdomen/pelvis was done which did not show any suspicious lesions. Gastric TB was diagnosed, and the patient received anti-tubercular treatment.
Discussion: Although rare, clinicians should be suspicious of GTB in patients native to endemic areas presenting with symptoms reflecting gastric outlet obstruction, peptic ulcer disease, malignancy, or in the workup of chronic anemia. The lack of pulmonary involvement as seen in this case makes it particularly challenging to identify. The routes of infection of the gastric tissue include hematogenous spread, extension from neighboring TB lesion, or direct infection of the mucosa. The rarity of GTB can be attributed to the bactericidal properties of gastric acid and lack of significant lymphoid tissue in the gastric wall. The gastric mucosal barrier also plays a part in preventing migration into the tissue. Given the chronic reflux in this patient, it is possible he had gastritis and erosion of the barrier facilitating infection. Once diagnosed, patients respond well to anti-tubercular treatment.

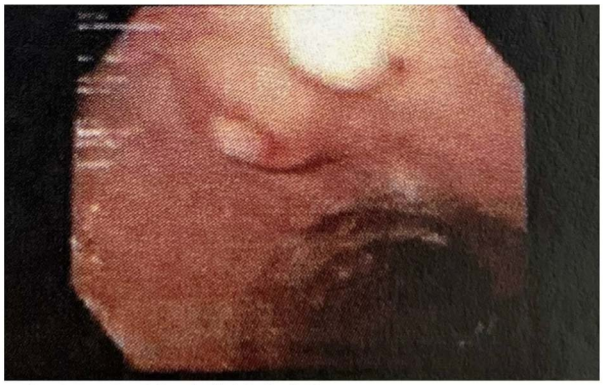

Figure 1. Macroscopic gastric ulcerated nodular lesions found in EGD

[3654] **Figure 1.** Macroscopic gastric ulcerated nodular lesions found in EGD.

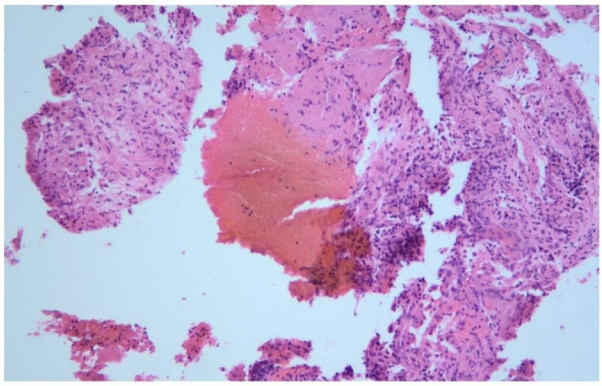

Figure 2. Microscopic pathology from biopsy of gastric ulcero nodular lesions showing caseating granulomas

[3654] **Figure 2.** Microscopic pathology from biopsy of gastric ulcero nodular lesions showing caseating granulomas.

S3655

Pyogenic Granuloma Found in the Duodenum: A Rare Etiology

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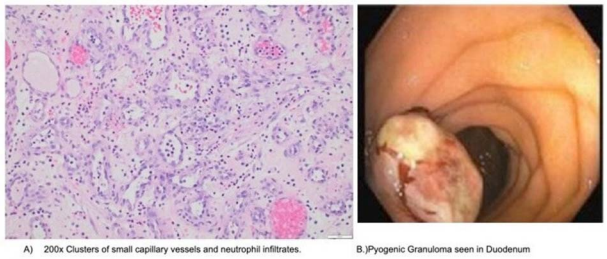
Introduction: Pyogenic granuloma (PG) is a benign growth of capillary blood vessels arranged in lobular fashion. While infection, trauma and hormones are implicated as causes, the exact etiology is unknown. PG is commonly found on the skin and oral mucosa but PG occurrences in the duodenum are extremely rare. We present an unusual case of a duodenal PG as a cause of anemia and gastrointestinal (GI) bleeding in a 68 year old female.
Case Description/Methods: A 68-year-old female with history of laparoscopic adjustable gastric banding presented for evaluation of fatigue and shortness of breath. She was found to have microcytic anemia with a decline of hemoglobin 13.3 gm/dL to 8.5 gm/dL within one year. She underwent bi-directional endoscopic evaluation which revealed normal duodenum, esophagitis, gastritis, and evidence of laparoscopic revision surgery. Biopsies were negative for Celiac disease and *Heliobacter pylori*. Colonoscopy and Small bowel capsule endoscopy revealed no source of bleeding. Push enteroscopy demonstrated a 15 mm polyp in the third part of the duodenum. Biopsies of the duodenal polyp showed granulation tissue without small intestinal mucosa. Endoscopic mucosal resection (EMR) of the polyp with argon plasma coagulation (APC) of the edges was completed. Pathology revealed polypoid granulation tissue with surface ulceration and acute inflammation consistent with pyogenic granuloma (PG) of the duodenum. The patient was instructed to return for follow-up EGD in six months (Figure 1).
Discussion: An immunohistochemical stain (CD3) of the PG revealed scattered T-cells. PillCam footage was reviewed and confirmed that this lesion was not previously present. While the pathogenesis of PG is unknown, theories include imbalance of angiogenesis factors and mechanical trauma. Furthermore, very few cases of duodenal PG have been described in the literature. Diagnostic workup of PG in the GI tract has not yet been agreed upon but commonly utilized techniques include EGD, PillCam Endoscopy, push enteroscopy, and double balloon enteroscopy. Imaging that detects the readily hemorrhaging papule in conjunction with biopsy is ideal. Treatment options include EMR, laser ablation or surgery. This case is important because it highlights an extremely rare cause of gastrointestinal bleeding. Diagnosis can be difficult, and it is important for practitioners to be vigilant in recognizing this disease entity because PG can hemorrhage and lead to profuse GI bleeding.



A) 200x Clusters of small capillary vessels and neutrophil infiltrates. B.)Pyogenic Granuloma seen in Duodenum

[3655] **Figure 1.** Pyogenic Granuloma seen on histology and gross image.

S3656

Primary Diagnosis of Metastatic Breast Cancer via Esophagogastroduodenoscopy With Gastric Biopsies

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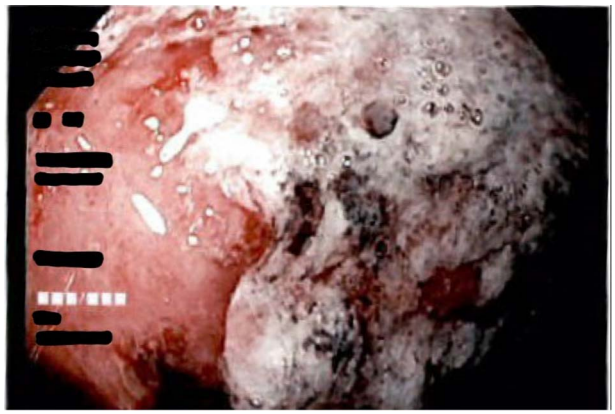
Introduction: Gastric metastases are a rare manifestation of breast cancer and previous case reports suggest they typically occur in patients with a long standing history of breast cancer. We present a case of a patient whose primary diagnosis of breast cancer was made via gastric biopsies taken during esophagogastroduodenoscopy (EGD) after the patient presented to the hospital with symptoms of persistent nausea and vomiting.
Case Description/Methods: The patient is a 58-year-old female with a reported history of alcohol use disorder who presented to the emergency department with intractable nausea and vomiting. On arrival, the patient's vitals were stable and labs were only significant for a mildly elevated creatinine of 1.40, which normalized with IV fluids. Computed tomography (CT) of the abdomen and pelvis showed diffuse gastric wall thickening. Following the results of the CT, an EGD was performed which revealed diffuse gastritis with friable mucosa and concern for malignancy or ischemia. Gastric biopsies were suggestive of adenocarcinoma with likely primary being breast cancer. Immunohistochemical staining was positive for CDK7, GATA3, mammaglobin, and 80-90% estrogen receptor. Following consideration of both the pathologic appearance and immunohistochemical staining, the diagnosis was made of metastatic lobular carcinoma. Due to the patient's poor support system and functional status, the patient elected to pursue hospice, and therefore further workup was not performed (Figure 1).
Discussion: Breast cancer is the second most common malignancy in women in the United States, with metastasis of breast cancer classically spreading to lungs, liver, bone, soft tissue, and adrenal glands. Metastasis to the gastrointestinal (GI) tract is rare, with lobular breast cancer having higher predilection over ductal carcinoma. The average time for breast cancer to metastasize to GI tract has been previously reported as many years after primary diagnosis. Here we present a case of breast cancer where the primary diagnosis was made after EGD assisted gastric biopsies. After extensive literature review, there is sparse information on early gastric metastasis of breast cancer. While our patient's previous history of breast cancer screening is unknown, she had no prior knowledge of her breast cancer diagnosis. This case signifies the importance of endoscopic evaluation and gastric biopsies in patients with nonspecific symptoms, especially with abnormal imaging findings suggestive of gastritis.



[3656] **Figure 1.** Endoscopic appearance of the gastric mucosa.

S3657

Primary Gastric Adenocarcinoma With Clear Cell Differentiation Presenting With Melena: A Rare Cancer Treated With Hybrid Endoscopic Mucosal Resection and Endoscopic Submucosal Dissection

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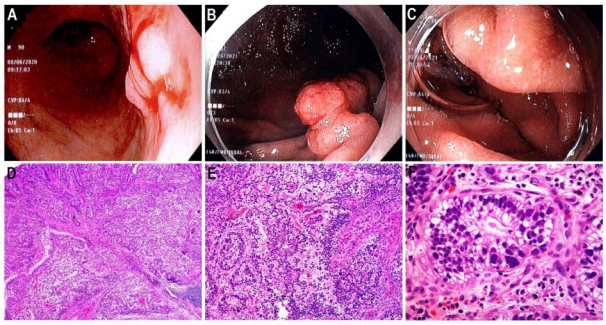
[1]Allama Iqbal Medical College, Lahore, Punjab, Pakistan; [2]Hackensack Meridian Raritan Bay Medical Center, Perth Amboy, NJ; [3]Woodhull Medical Center/NYC Health + Hospitals, Brooklyn, NY; [4]Conemaugh Memorial Medical Center, Johnstown, PA; [5]Woodhull Medical Center, Brooklyn, NY; [6]Wyckoff Heights Medical Center, Brooklyn, NY.

Introduction: Primary gastric clear cell carcinoma (GCCC) is an exceedingly rare type of adenocarcinoma. It can often be misdiagnosed as metastatic clear cell cancer with primary lesions in other body organs. We hereby present an interesting case of primary GCCC, successfully removed with hybrid endoscopic mucosal resection (EMR) and endoscopic submucosal dissection (ESD).
Case Description/Methods: A 91-year-old male had ongoing anemia and melena due to intermittent oozing from a gastric body nodule. Previous EGD showed an oozing, nodular lesion in the gastric body (Figure 1A). On EUS, it was a benign, mucosal-based, friable lesion. Pathology revealed gastric intestinal metaplasia. His past history included hyperlipidemia, hypertension, skin cancer, transient ischemic attack, prior colon polyps, and sigmoid resection for diverticulosis. Home medications included cardizem, iron and vitamin C supplements, allopurinol, aspirin, and PPI. He denied recent weight loss, nausea, vomiting, early satiety, chest pain, dyspnea, fever, or dysphagia. He then came to our hospital for endoscopic removal of the gastric lesion. EGD showed a 3-cm sessile polyp on the posterior wall of the gastric body, located along the lesser curvature (Figure 1B, C). The polyp was completely removed by the hybrid EMR and ESD technique. Pathology revealed invasive adenocarcinoma of the intestinal type with clear cell features, arising in a background of extensive intestinal metaplasia (Figure 1; D, E, F). He developed post-procedure urinary retention and underwent temporary Foley's catheter placement, which was removed shortly after. No fever or GI bleeding was noted. After diagnosis, his oncologist recommended concurrent chemoradiotherapy. His most recent PET scan was unremarkable. No melena was reported at the follow-up after 3 months.
Discussion: We herein presented a rare and interesting case of primary GCCC. In these patients, it is imperative for endoscopists to differentiate between primary GCCC and metastatic lesions to deliberate upon best therapeutic choice. Pathology with immunohistochemistry is the cornerstone of accurate diagnosis for primary GCCC. Given the extremely rare occurrence, no standard treatment guidelines exist for GCCC. Therefore, the therapeutic approach varies on a case-by-case basis, which largely depends on its localization. For instance, the 3-cm lesion in our patient was located along the lesser curvature and was successfully removed by hybrid EMR and ESD. Therefore, it did not necessitate total gastrectomy.



[3657] **Figure 1.** A: Previous EGD showing an actively oozing, nodular lesion in the gastric body. B and C: EGD showing a 3-cm sessile polyp on the posterior wall of the gastric body, located along the lesser curvature. D, E, and F: Pathologic examination of the polypectomy specimen showing invasive adenocarcinoma of the intestinal type with clear cell features, arising in a background of extensive intestinal metaplasia.

S3658

Radio-Opaque Material in a Non-Contrast CT Scan of Abdomen: A Radiology Dilemma

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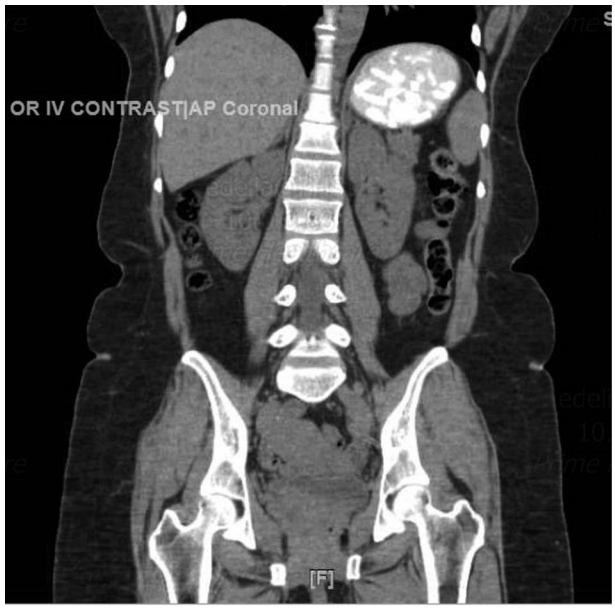
Introduction: This is a case of a radiology dilemma in which a CT scan without oral or IV contrast showed radiopaque materials in the stomach of an IV drug abuser in the setting of a positive UDS for cocaine raising suspicion for a drug bezoar which was later found to be a commonly consumed food.
Case Description/Methods: 35-year-old female with past medical history of chronic osteomyelitis of pubic ramus, recurrent pubic abscess on suppressive therapy with minocycline, MRSA bacteremia, IV drug abuse presented to the emergency department with complaints of vague abdominal discomfort and drainage from right groin where she recently had an I&D done for an abscess. It started 2 days ago associated with swelling and pain in the same area along with generalized lower quadrant abdominal pain and chills. Her vitals were stable and pertinent physical exam findings includes draining pus from I&D scar and tenderness in pubic bones. Urinary drug screening was positive for cocaine and marijuana. Ultrasound of soft tissue showed pubic abscess measuring 1.8 × 1.2 cm. CT scan without oral or IV contrast was taken. CT showed abscess near pubic symphysis with associated cortical destruction. There was multiple tubular and oval shaped radio-opaque materials in the stomach. Based on the CT findings there was a strong suspicion of body packer syndrome or drug bezoar, especially in the setting of patient's history of drug abuse and positive UDS findings. There was further dilemma as this was a non-contrast study and bezoar will be visualized only in a contrast study. Further history taking revealed patient had 1 packet of gummy worm gummies prior to the CT. The radio-opaque materials were hence found to be gummy worm gummies (Figure 1).
Discussion: Through literature review it was found that gummy bear gummies have Red Dye Number 3, also known as Erythrosine B. This dye is a tetraiodofluorescein dye which has 4 atoms of iodine per molecule of dye and is widely used as a coloring agent in food and drugs. In fact, this is the reason why thyroid patients are advised to avoid this food. Sir William Osler said "medicine is a science of uncertainty and an art of probability". When there was uncertainty, our medical team believed in sticking to the basics, which is thorough history taking which opened us the path to solve this dilemma. Case reports have shown that these gummies have caused bezoar causing bowel obstructions especially in children hence knowing their radiological features helps us solve such gastrointestinal cases without dilemma.



[3658] **Figure 1.** Radio-Opaque tubular and oval shaped materials in a non-contrast CT of abdomen.

S3659

Primary Gastric Squamous Cell Carcinoma With Concurrent *H. pylori* Infection and Colonic Metastasis

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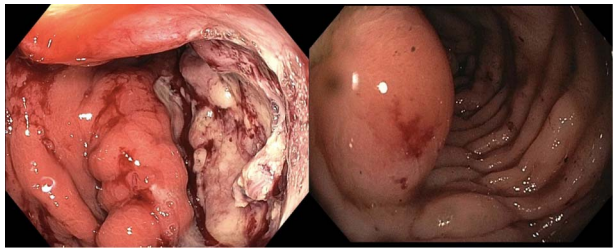
Introduction: Primary gastric squamous cell carcinoma (PGSCC) is a rare, aggressive, malignancy that cannot be distinguished from other gastric malignancies clinically and therefore, requires EGD with biopsy and pathology. *H. pylori* infection is a known risk factor for gastric malignancies but, only one case has been reported with an association between the two.

Case Description/Methods: 66-year-old Hispanic male, with no significant medical, family, or social history presented to the hospital with syncope. Further history revealed three weeks of melena, fatigue, exertional dyspnea, and 50 lb weight loss. Upon evaluation, the patient was found to have HGB of 3.2. CT abdomen with contrast showed a mass in the antrum of the stomach, most prominent posteriorly and around the greater curvature. EGD revealed normal esophagus and a 15 cm, oozing, fungating, and partially circumferential gastric mass. It was located in the antrum, involving the entire posterior wall with extension into the greater curvature. The gastric mass was 5 cm below the GE junction, without evidence of esophageal involvement. Biopsy of the mass revealed poorly differentiated squamous cell carcinoma and Helicobacter pylori infection. Colonoscopy then revealed a 4 cm lesion near the splenic flexure which was confirmed to also be poorly differentiated squamous cell carcinoma. The patient was placed on triple therapy for his H. pylori infection. PET scan showed known gastric and colonic mass with multiple enlarged and hypermetabolic perigastric and retroperitoneal lymph nodes consistent with metastasis. He was seen by oncology and started on systemic chemotherapy (Figure 1).
Discussion: PGSCC is a rare form of gastric malignancy accounting for roughly 0.2% of primary gastric cancer reported. Compared to the more common gastric adenocarcinoma, SCC tends to be more aggressive with poorer outcomes. Unfortunately, the pathogenesis remains obscure, making early detection difficult. Our case was associated with *H. pylori* infection which is one of the most significant risk factors for the development of gastric cancer due to the chronic inflammation caused by infection. Additionally, metastasis to the colon is exceptionally rare with most cases metastasizing to liver, peritoneum, lung and bone. Further investigation and studies are needed to understand this rare disease.



[3659] **Figure 1.** Primary gastric tumor (left panel), submucosal colonic mass (right panel).

S3660

Prolapsed Gastric Polyp Causing Gastric Outlet Obstruction

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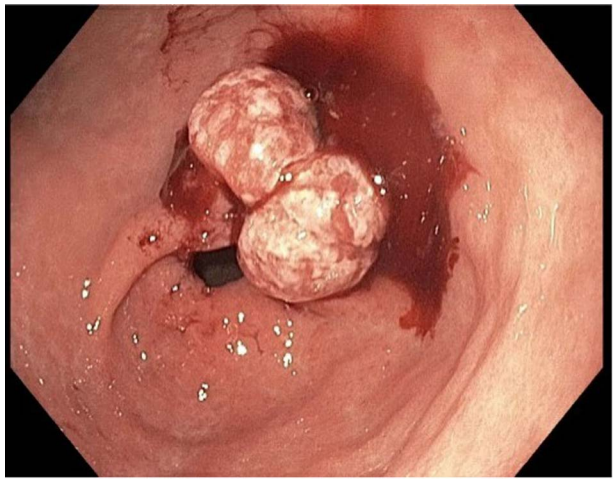
Introduction: Gastric polyps are epithelial and subepithelial lesions that encompass various pathological conditions. While largely asymptomatic, some may present with bleeding or obstruction. Our case demonstrates a rare presentation of a gastric polyp leading to mechanical complications.
Case Description/Methods: A 64 year old female presented with progressively worsening nausea and vomiting associated with a 20 lbs weight loss since the last 5 weeks. The patient reported vomiting of undigested food shortly after her meals and occasionally during her meals. She denied abdominal pain, dysphagia, odynophagia, alteration of taste, constipation or loss of appetite. She denied similar symptoms with liquids. Upon evaluation, the patient appeared well and was hemodynamically stable. Labs were unremarkable. An abdominal CT scan showed nodular thickening of distal pylorus and distal duodenal bulb which raised suspicion for malignancy considering the patient's reported weight loss. An EGD was performed which revealed a bilobed pedunculated gastric antral polyp (approximately 8 mm each lobe) prolapsed into the duodenal bulb with multiple papules and nodules in the antrum and inflamed gastric mucosa. The pedunculated gastric polyp was thought to be the cause of the patient's symptoms and was resected. Biopsy results revealed inflamed hyperplastic polyps with mildly active *H. pylori* gastritis, negative for intestinal metaplasia and dysplasia with some evidence of reactive foveolar hyperplasia. The patient had complete resolution of her symptoms post polypectomy. She was discharged with HP treatment and outpatient follow up care (Figure 1).
Discussion: The patient's symptomatic relief confirmed that the pedunculated antral polyp prolapsed into the duodenal bulb causing gastric outlet obstruction (GOO). Polyps in the stomach are usually small, asymptomatic and discovered incidentally on upper endoscopy. Several risk factors are associated with hyperplastic polyps including *HP* infection, bile reflux, and autoimmune gastritis. Rarely, large lesions greater than >2 cm in size that are more prone to surface erosion and can cause chronic blood loss and/or GOO. Endoscopic resection of symptomatic polyps and hyperplastic polyps >5 mm is currently recommended. Gastric polypectomy is considered a safe and easy procedure however, the risk of bleeding and perforation increases with the polyp size. Studies have found that eradication of *HP* resulted in regression of the existing polyps and prevented new polyp development.



[3660] **Figure 1.** Pylorus with bilobed gastric polyp manually pulled back into the stomach.

S3661

Sarcina Ventriculi Infection: A Rare Cause of Gastric Outlet Obstruction

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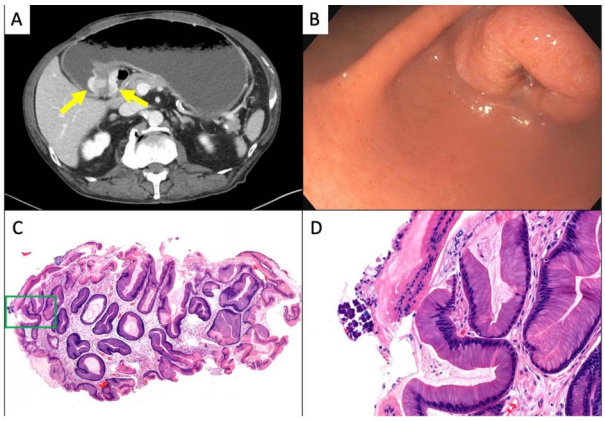
Introduction: *Sarcina ventriculi* is an anaerobic, gram-positive coccus that grows in acidic environments including the stomach. Case reports have implicated its role in causing gastric ulcers, emphysematous gastritis, and gastric perforation. There has been only one case report in the literature on *S. ventriculi* causing gastric mass lesion to our knowledge. Here we report a rare case of *S. ventriculi* infection causing a pyloric mass leading to gastric outlet obstruction (GOO).
Case Description/Methods: A 65-year-old male with a past medical history of Barrett's esophagus and tobacco use presented to the emergency department with progressive worsening of abdominal pain, nausea, and vomiting. Esophagogastroduodenoscopy (EGD) performed locally showed a small pyloric channel ulcer with traversable pyloric narrowing. Gastric biopsies showed no significant pathology and were negative for *H. pylori*. Abdominal computed tomography showed circumferential nodular wall thickening of the pylorus and a dilated, fluid-filled stomach consistent with GOO (Figure 1A). No pneumatosis or perforation of the stomach was noted. EGD was repeated one month later at our institution due to worsening symptoms and revealed near complete obstruction of the pyloric channel by a protruding friable pyloric mass (Figure 1B). Biopsies of the mass revealed *S.ventriculi* organisms in the background of reactive gastropathy, with no evidence of malignancy (Figure 1C, D). A nasojejunal feeding tube was placed and the patient was treated with ciprofloxacin and metronidazole for 7 days along with pantoprazole twice daily. Repeat EGD performed two weeks later showed near complete resolution of the mass lesion.
Discussion: *S. ventriculi* infections are associated with delayed gastric emptying. It is unclear if the infection is a result of the poor gastric emptying or the cause of it. In our case the patient presented with an obstructing pyloric mass due to reactive gastropathy in the setting of *S. ventriculi* infection, and repeat EGD after treatment with antibiotics and a proton pump inhibitor showed near complete healing of the mass and ulcer but persistent poor gastric emptying in the absence of obstruction. We report this case to expand on the paucity of literature regarding *S. ventriculi* gastrointestinal infections and to raise awareness of it presenting as a gastric mass lesion.



[3661] **Figure 1.** A: Abdominal CT axial section showed circumferential nodular wall thickening of the pylorus (yellow arrows) and distended fluid-filled stomach. B: EGD showed circumferential, protruding, friable mass at the pylorus causing near obstruction of the pyloric channel. C: Low-power view (50×) of the pyloric mass revealed polypoid reactive gastropathy with *S. ventriculi* organisms present on the mucosal surface. D: High-power view (300×) of the green frame area in (C) demonstrating *S. ventriculi* organisms with characteristic thick cell walls and arrangement in tetrads.

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S3662

Scalp Biopsy Leading to New Diagnosis of Metastatic Signet Cell Carcinoma

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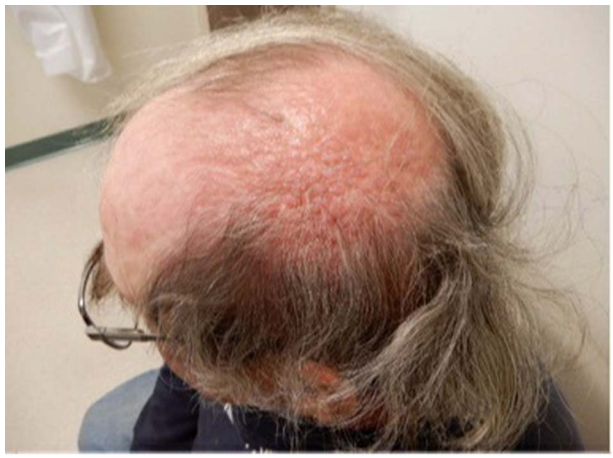
Introduction: Signet cell carcinoma is a distinct subtype of gastric cancer diagnosed via the characteristic presence of cytoplasmic mucin and an eccentrically displaced nucleus. In recent years, the incidence of this cancer has been increasing.
Case Description/Methods: A 70-year-old male consulted his PCP for a progressively worsening skin lesion on his left scalp. The physical exam shows edematous, firm pink plaques with surrounding alopecia for which he was referred to dermatology. The leading differential was scarring alopecia or sarcoidosis. Subsequent punch biopsy was collected, and results revealed alopecia neoplastica, favoring metastatic signet-ring cell carcinoma of gastric origin. Oncological workup was pursued. Whole-body PET CT imaging demonstrated a narrowed segment of the proximal duodenum, moderate pericardial effusion, and multiple sclerotic osseous metastases. The patient was referred for an EGD which demonstrated a pyloric channel infiltrative mass causing partial gastric outlet obstruction. An upper EUS identified a hypoechoic circumferential mass in the pyloric region of the stomach, measuring 20 mm × 15 mm. Given the developing gastric outlet obstruction, a 22 mm × 90 mm uncovered metal stent was placed across the pyloric mass. Biopsies showed poorly differentiated gastric adenocarcinoma with signet cell features. A couple of weeks later, the patient developed atrial fibrillation with evidence of a large pericardial effusion causing tamponade physiology. A left thoracotomy and pericardial window followed. The pathology specimen of pericardial fluid was also positive for metastatic signet cell adenocarcinoma. The patient completed 6 cycles of FOLFOX under the guidance of oncology. A few months later, he developed recurrent malignant pleural effusions requiring PleurX catheter placement. However, his dyspnea remained progressive, and the patient eventually succumbed to his disease (Figure 1).
Discussion: Cutaneous skin lesions are often the first and only manifestation of an underlying malignancy. Additionally, their presence portends a poor prognosis. Our case highlights an aggressive and difficult-to-treat subtype of gastric cancer diagnosed after a scalp biopsy. A thorough skin examination is key to recognizing new or strange cutaneous findings. Skin biopsy is an easy and effective tool for diagnosis and leads to early recognition and treatment of potential malignancies.



[3662] **Figure 1.** This image showcases edematous, firm pink-colored plaques with surrounding alopecia located over the patient's left temporoparietal scalp region.

S3663

Refractory Hypoglycemia Induced by a Gastrointestinal Stromal Tumor Secreting Insulin-Like Growth Factor-2

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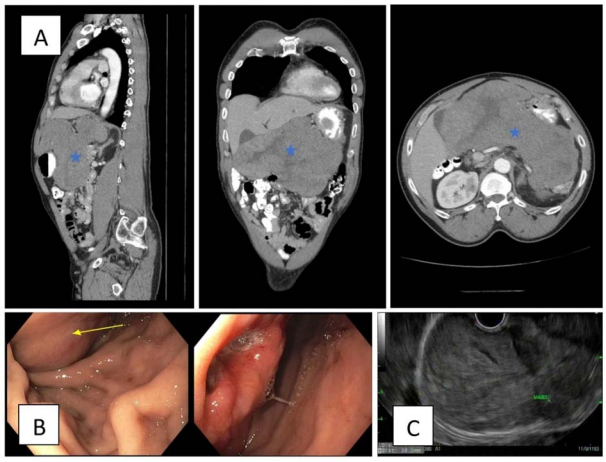
Introduction: Non-islet cell tumor hypoglycemia (NICTH) is a rare paraneoplastic syndrome that leads to the release of insulin-like growth factor-2 (IGF-2). It is commonly associated with tumors of mesenchymal origin like gastrointestinal stromal tumors (GIST).
Case Description/Methods: A 62-year-old male, with a past medical history of recently diagnosed GIST was started on imatinib but stopped taking it one month ago pending surgical evaluation, presents with altered mental status due to severe hypoglycemia. The patient had no prior history of diabetes or adrenal insufficiency. The patient's repetitive finger sticks glucose remained persistently low even after good oral intake and two D50 pushes. Urine toxicology and drug screen for sulfonylureas were negative. Laboratory investigations showed reduced levels of insulin, C-peptide, and insulin-like growth factor-1 (IGF-1), but his IGF-2 was increased. Endocrinology was consulted for refractory hypoglycemia; recommended to start D10 fluids in the setting of resistant low blood glucose and start octreotide and steroids. Insulinoma was unlikely as insulin and C-peptides were low. CT chest/abdomen/pelvis shows grossly unchanged gastric GIST, measuring 25 × 19.6 × 11.4 cm with no evidence of metastatic disease in the abdomen or pelvis (Figure 1A). Esophagogastroduodenoscopy (EGD) demonstrated large, bilobed subepithelial mass measuring 10-15 cm with an area of ulceration within the mass (Figure 1B) followed up with Endoscopic ultrasound (EUS) demonstrating subepithelial lesion was found likely arising from the fundus, lesser curve and body of the stomach, layer of origin could not be determined on due to the large size of the mass (Figure 1C). Oncology was consulted for further management of malignancy; imatinib was resumed and referred for surgical evaluation for tumor removal.
Discussion: IGF-II acts as an autocrine growth factor in tumor cells therefore, it is highly likely that IGF-II will be high in case of high tumor bulk and making them at high risk of developing NICTH. In patients diagnosed with GIST with hypoglycemic symptoms, we should consider IGF-II secreting GIST in addition to insulinoma especially in bulky tumors.



[3663] **Figure 1.** A: CT scan abdomen/pelvis with contrast showing large soft tissue density mass inseparable from the lesser curvature of the stomach marked with asterisk.
B: EGD findings consistent with a large, bilobed subepithelial mass measuring 10-15 cm with an area of ulceration within the mass (seen best on retroflexion) was found on the lesser curvature of the stomach along the anterior wall of the stomach.
C: Endoscopic US findings showed A 43.0 mm × 77.8 mm subepithelial lesion was found likely arising from the fundus, lesser curve and body of the stomach s/p FNB × 4. The lesion was hypoechoic and had some cystic spaces within it in some areas. Sonographically, the lesion appeared to originate from the stomach, but the wall layers could not be determined due to the large size of the mass.

S3664

Russel Body Gastritis: When the Rare Meets the Odd

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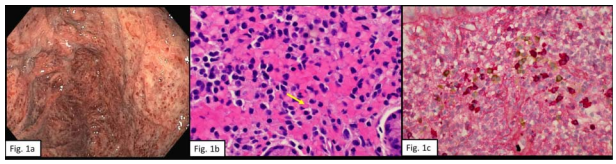
Introduction: The significance of chronic gastritis is underrated. Even though *Helicobacter pylori* (HP) has been the main contributing factor to this condition, if testing for it comes back negative, we should always rule out other underlying diseases, especially if the biopsy reveals Russell body (RB) gastritis.

Case Description/Methods: A 67-year-old male with a past medical history of immune thrombocytopenic purpura (ITP) on prednisone and eltrombopag, hypertension, and choledocholithiasis status post cholecystectomy complicated by abscess formation and drain placement, presented with worsening nausea, vomiting, and abdominal pain for three days associated with early satiety and weight loss. His symptoms were not related to food or activity. Vital signs and physical exam were unremarkable except for right upper quadrant abdominal tenderness. Labs were remarkable for WBC 55 k/ul, HGB 11 g/dl, and PLT 90 k/ul. Full infectious workup was negative. CT scan showed massive splenomegaly with widespread lymphadenopathy and circumferential wall thickening of the gastric fundus and body. An upper endoscopy was performed and revealed diffuse gastric erythema in a mosaic pattern, most pronounced in the body of the stomach (Fig. 1a). Biopsies were obtained from the gastric antrum and body. Gastric body biopsies revealed gastric oxyntic mucosa with RB gastritis (Fig. 1b), and it was negative for HP, intestinal metaplasia, dysplasia, or malignancy. Kappa and lambda immunohistochemistry stain showed a polyclonal mixed population of plasma cells (Fig. 1c), indicating no underlying malignancy. HP stool antigen was checked twice, and it was negative. His WBC continued to rise, and bone marrow (BM) biopsy was performed. Findings were suspicious for myelodysplastic/myeloproliferative disorder; however, a reactive process could not be ruled out. Since the patient's condition significantly deteriorated, a repeat BM biopsy revealed morphological changes consistent with chronic myelomonocytic leukemia (CMML). After discussing goals of care with the patient, he opted for hospice care and expired after three days.



[3664] **Figure 1.** (a) An upper endoscopy showing diffuse punctuate gastric erythema with mucosal mosaic pattern. (b) A high power stomach biopsy with Hematoxylin and Eosin stain showing atypical plasma cells with Russell bodies (yellow arrow) which are eosinophilic homogeneous immunoglobulin-containing inclusions. (c) A high power stomach biopsy with kappa and lambda immunohistochemistry stain showing polyclonal mixed population of plasma cells (positive for both kappa and lambda).

Discussion: RB gastritis is a reactive mucosal infiltration of plasma cells filled with cytoplasmic RB. There is a strong association with HP infection, but there is also an association with hematopoietic malignancies and gastric adenocarcinoma. Our case represents the vital importance of looking for underlying malignancies in HP negative RB gastritis patients.

S3665

Recurrent Invasive Lobular Breast Carcinoma to Stomach After 15 Years From Initial Diagnosis: A Case Report

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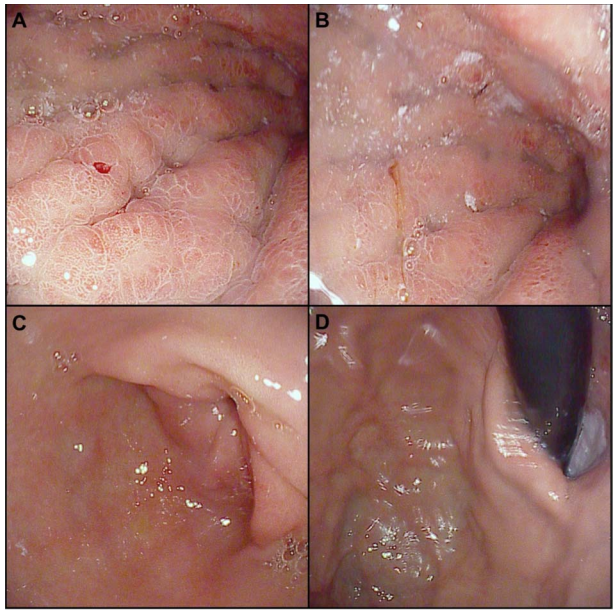
Introduction: Gastric metastasis from invasive lobular carcinoma is rare and can occur several years after quiescent disease; if symptoms are present, they often mimic dyspepsia, which can delay diagnosis and carries a higher rate of morbidity/mortality as a result.

Case Description/Methods: An 85-year-old woman with a history of invasive lobular breast carcinoma status post bilateral mastectomy and hormone therapy 15 years prior presented with 3 months of generalized abdominal pain and early satiety with 30-lbs weight loss. She was initially started on a proton pump inhibitor at an outside clinic for presumed dyspepsia with minimal improvement in her symptoms. CT scan was subsequently performed which revealed no intra-abdominal pathology. Exam revealed a thin, elderly woman with tenderness to deep palpation in the epigastrium. Labs revealed a Hgb of 14.3 g/dL and albumin of 3.6 g/dL, along with normal kidney and liver function. Her EGD showed patchy gastropathy that was most prominent in the proximal stomach, and otherwise normal esophagus and duodenum (Figure 1). Targeted gastric biopsies demonstrated poorly differentiated adenocarcinoma invading into the lamina propria with rare signet ring cells consistent with metastasis from breast primary, confirmed on immunohistochemistry. Subsequent PET/CT suggested mild FDG uptake diffusely throughout the proximal stomach, with no other evidence of metastatic disease. She was referred to oncology and was started on fulvestrant for recurrent invasive lobular carcinoma.

Discussion: Metastatic breast cancer involving the GI tract is rare with an estimated prevalence of less than 1% and can occur many years after initial tumor diagnosis and treatment. The metastatic pattern of lobular and ductal carcinoma differs significantly with a greater propensity for lobular carcinoma to metastasize to the GI tract in a pattern of linitis plastica (with diffuse infiltration of the submucosa and muscularis propria). Presenting symptoms include generalized abdominal pain, dyspepsia, nausea/emesis, and anorexia/early satiety, all of which were evident in this case. Histopathological and immunohistochemical analysis is needed to differentiate metastatic breast carcinoma from primary gastric cancer to guide appropriate therapy and prognosis. Therefore, in patients with a history of breast cancer presenting with subtle upper GI symptoms, a high clinical index of suspicion is needed to ensure timely endoscopic evaluation and adequate biopsies for accurate diagnosis and appropriate therapy.



[3665] **Figure 1.** Patchy gastropathy at proximal stomach (A and B) with otherwise normal appearing mucosal at antrum (C) and fundus/cardia (D) on esophagogastroduodenoscopy.

S3666

Severe Hemorrhagic Gastritis in a Patient Receiving PD-1 Inhibitor Treated With High Dose Proton Pump Inhibitor

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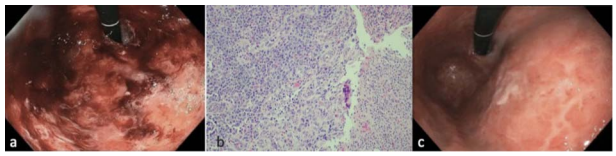
Introduction: The programmed death 1 (PD-1) immune checkpoint is a negative regulator of T-cell function. Pembrolizumab is a monoclonal antibody which inhibits PD-1 receptor and is commonly used to treat many types of malignancies. While this therapy allows for an enhanced immune response against tumor cells, it can also cause immune-mediated adverse events with the gastrointestinal (GI) tract being the most commonly affected. Systemic corticosteroids are frequently used in patients who develop these side effects. We present a rare case of a patient with clear cell renal cell carcinoma (ccRCC) presenting with hemorrhagic gastritis while on Pembrolizumab, successfully treated with high dose proton pump inhibitor (PPI).
Case Description/Methods: A 61-year-old man with metastatic ccRCC treated with Pembrolizumab, presented to the hospital with intractable vomiting and significant weight loss secondary to poor oral intake. Upper endoscopy showed diffusely friable gastric mucosa with oozing of blood (Image 1a). Biopsy revealed mucosa with regenerative changes and active non-specific inflammation with ulcerated granular tissue, negative for CMV, *H. pylori*, atypical infiltrating cells, or malignancy (Image 1b). These findings were compatible with Pembrolizumab induced autoimmune gastritis. He was started on pantoprazole 40 mg BID with significant clinical improvement; thus, steroid therapy was not initiated. Repeat endoscopy a month later showed resolution of prior endoscopic findings (Image 1c). Pembrolizumab was restarted two months later while on PPI therapy without recurrence of symptoms.
Discussion: Gastrointestinal side effects from immunotherapy are common. However, isolated PD-1 blockage-associated gastritis is rare and hemorrhagic gastritis is even more with only a few cases reported in literature. The management of this condition is not well established although systemic steroids are usually used to suppress the immune response. In our case, high dose PPI therapy alone led to resolution of symptoms and mucosal healing. No clinical or histological signs of hemorrhagic gastritis were noted after resuming Pembrolizumab. Whether PPI therapy has a role in preventing or minimizing this immune-induced gastritis is still unknown and more studies are needed to establish this therapy as standard.



[3666] **Figure 1.** (a) Initial endoscopy showing hemorrhagic gastritis. (b) H&E stain at 20× showing inflammatory infiltrate. (c) Repeat endoscopy showing healing mucosa.

S3667

Remnant Gastric Cancer: Adenocarcinoma in a Patient With Partial Gastrectomy for Benign Peptic Ulcer Disease

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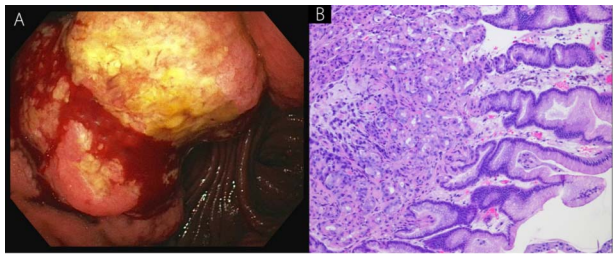
Introduction: Remnant gastric cancer is defined as cancer arising in the gastric remnant at least five years after gastric resection for benign peptic ulcer disease (PUD). It is often diagnosed at an advanced stage and has poor prognosis.
Case Description/Methods: A 76-year-old Asian man with a history of partial gastrectomy more than 30 years ago from PUD complicated by perforation presented after being found unresponsive. Patient was found to have acute ST elevation myocardial infarction requiring coronary stent placement and initiation of dual antiplatelet therapy. Patient was also found to have iron deficiency anemia without overt bleeding. Endoscopic evaluation was not pursued during the admission and timing was to be determined in the setting of recent acute coronary syndrome and as patient's hemoglobin remained stable. Two months after discharge, the patient's hemoglobin was found to be 6 g/dL on routine outpatient blood work which prompted urgent hospitalization. He received transfusion with packed red blood cells. An upper endoscopy was performed that showed a Billroth II gastrojejunostomy and a large, ulcerated mass in the gastric remnant proximal to the surgical anastomosis (Figure 1A). Biopsy of the mass revealed invasive adenocarcinoma, poorly differentiated with signet ring cells (Figure 1B). He was discharged with oncology follow-up.
Discussion: We report here a case of remnant gastric cancer in a patient who had undergone partial gastrectomy many years ago. In the past, surgical treatment was a popular option for PUD, but with the introduction of histamine-2 receptor antagonists and proton pump inhibitors, role for surgery has diminished. Especially with the discovery of *Helicobacter pylori* and its treatment, the rate of surgery for uncomplicated PUD has decreased, but gastric resection is still performed on a regular basis for complications such as perforation and gastric outlet obstruction. Many studies claim that patients with a history of partial gastrectomy for benign PUD are at increased risk of developing gastric cancer. Pathogenesis is thought to involve biliary and pancreatic reflux causing chronic inflammation of the mucosa in the gastric remnant. At this time, there are no clear guidelines regarding endoscopic surveillance in asymptomatic patients as benefit has not been established. Nonetheless, clinicians should maintain a high index of suspicion in these patients for early diagnosis as remnant gastric cancer is commonly diagnosed at an advanced stage.



[3667] **Figure 1.** A: Endoscopic image of the ulcerated mass in the gastric remnant B: Biopsy of the mass showing invasive adenocarcinoma, poorly differentiated with signet ring cells.

S3668

Second Time Is the Charm: Negative Biopsy Signet Ring Cell Adenocarcinoma

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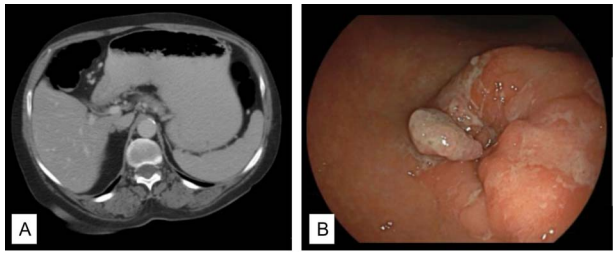
Introduction: Signet ring cell adenocarcinoma is a rare histological subtype of adenocarcinoma that can arise in the gastrointestinal tract. It can present as malignant gastric outlet obstruction. Endoscopic biopsy has poor sensitivity to detect the malignancy. We present the case of a 65-year-old female with gastric outlet obstruction who was found to have malignant signet ring cell adenocarcinoma in the antrum after a first negative biopsy.
Case Description/Methods: A 65-year-old female presented with acute on chronic anemia, melena, nausea, vomiting, and decreased appetite for 3 weeks. Her abdominal computed tomography (CT) and esophagogastroduodenoscopy (EGD) had findings concerning for gastric outlet obstruction (Figure 1). Six biopsies were taken from the pylorus, that showed severe chronic active gastritis with ulceration, and no evidence of adenocarcinoma. The patient was discharged with proton pump inhibitor therapy and one month follow up for reevaluation of the pyloric ulceration. Repeat CT and EGD redemonstrated the distention of the stomach and the pyloric thickening, with adjacent mesenteric lymphadenopathy and possible omental involvement. Multiple biopsies were taken and showed poorly differentiated invasive adenocarcinoma with signet ring cell differentiation. A diagnostic laparoscopy was performed to obtain cytology and biopsies of the omentum. Pathology of the great omentum was positive for metastatic adenocarcinoma (stage IV). Patient was treated with enteral self-expandable metal stent and referral for palliative treatment.

Discussion: Gastric outlet obstruction can be the result of benign diseases, like peptic ulcer disease which was the most common cause until late 1970s, or malignant causes which are responsible for more than 50% of cases currently. Multiple sources should be considered when diagnosing the etiology of gastric outlet obstruction, including clinical presentation, advanced imaging, laboratory evaluation and endoscopy. Although endoscopy is a very useful tool to identify masses and obstruction, it has poor sensitivity to detect malignant obstruction (only 37%) when compared to surgical evaluation. Therefore, negative endoscopic biopsy results should not be used to rule out malignant obstruction, and clinicians should always keep a high index of suspicion for malignancy with any case of gastric outlet obstruction.



[3668] **Figure 1.** CT scan 1/2022 shows pyloric thickening and distention of the stomach (A). EGD shows circumferential area of erythema and edema in the pylorus that was difficult to pass with adult gastroscope (B).

S3669

Spotting the Deceiver: Metastatic Urothelial Carcinoma to the Liver Masquerading as a Well-Differentiated Neuroendocrine Tumor Histologically

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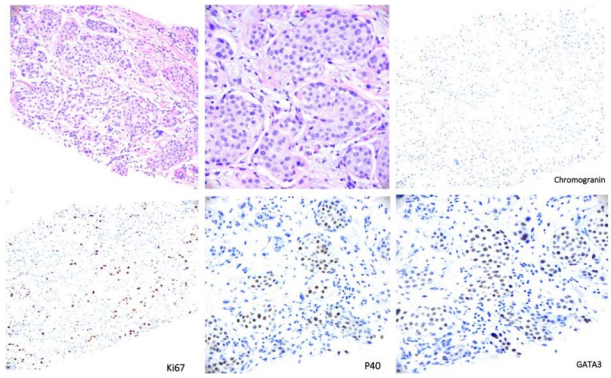
Introduction: Metastatic urothelial carcinoma of the bladder is generally considered an aggressive disease. It has the potential to metastasize to lymph nodes, bones, lungs, liver, and peritoneum. The accurate diagnosis of metastatic urothelial carcinoma is challenging especially in the setting of histological mimickers. Without pathological expertise and additional immunohistochemistry, metastatic tumors could remain incorrectly diagnosed and delay therapeutic intervention.
Case Description/Methods: Herein, we describe a 62-year-old man who presented with jaundice, elevated LFTs, diffuse abdominal pain, and early satiety. MRI of the abdomen revealed a hilar hyperintense mass involving the common bile duct, bilateral hepatic ducts causing narrowing, a 1.1 cm mass in segment 6, and hydroureteronephrosis with thickening of the renal pelvis.
Discussion: Clinical differential diagnosis included cholangiocarcinoma and other tumors including a metastatic neuroendocrine tumor (NET). Microscopic evaluation of liver mass biopsy revealed insular growth pattern with monotonous epithelioid cells arranged in nests morphologically suggestive of well-differentiated neuroendocrine tumor (WDNET). However, neuroendocrine immunohistochemical stains, including synaptophysin, chromogranin, and CD56, were all negative, and the Ki-67 staining was 37%, higher than expected for a WDNET, (see Figure 1) prompting broadening of the differential. Following further workup, a diagnosis of metastatic urothelial carcinoma was confirmed by immunopositivity for immunohistochemical markers P40, and GATA3 (see Figure 1). Familiarity with tumors that are histologically identical is critical. Considering an appropriate differential diagnosis, and following a stepwise immunohistochemical approach will be crucial in spotting the mimickers and rendering appropriate management promptly.



[3669] **Figure 1.** Metastatic urothelial carcinoma, hematoxylin & eosin (A and B), and immunohistochemical markers (C-F).

S3670

Symptomatic Right-Sided Bochdalek Hernia in a 91-Year Old Female

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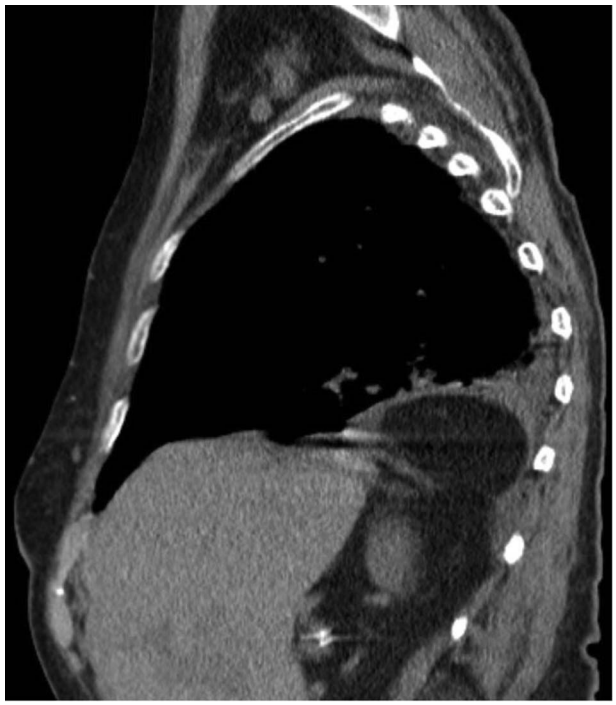
Introduction: Bochdalek hernia (BH) is a type of congenital diaphragmatic hernia that occurs due to a defect in the posterior attachment of the diaphragm when there is a failure of pleuroperitoneal membrane closure in utero, associated with severe pulmonary complications during perinatal life. The prevalence of BH in adults is only 0.17%, of these, 20% are right-sided. We present a case of right sided BH in an adult.
Case Description/Methods: A 91-year old female with a past medical history of hypertension, coronary artery disease, ulcerative colitis, laparoscopic cholecystectomy, colostomy, and parastomal hernia with repair, presented to the emergency room with the chief complaint of intermittent epigastric abdominal pain that radiated to the back, nausea, and early satiety for a one week duration. A CT scan of the abdomen without contrast showed a non-complicated right-sided BH containing fat. As the patient was considered a poor candidate for surgery, the patient received conservative treatment (Figure 1).
Discussion: A Bochdalek hernia is a rare type of congenital diaphragmatic hernia that occurs due to failure of the pleuroperitoneal membrane closure in utero. There are fewer than 150 reported cases of adult BH. Nowadays, the term "congenital diaphragmatic hernia" is preferred for hernias presenting in the neonatal period, as a result of large central diaphragmatic defects, which allows the protrusion of abdominal viscera into the thoracic cavity. The term "Bochdalek hernia" is preferred for localized herniations through small diaphragmatic defects, occurring later in life without obvious symptoms. Although the formation of BH occurs in-utero, it may only become evident once it causes clinical symptoms in adulthood and is often revealed after trauma or during laparoscopic surgery, which raises intraabdominal pressure. Our patient had a prior history of multiple abdominal surgeries, which may have aided in revealing an underlying BH defect. Adult BH is reported with an incidence of 0.17% with only 58 cases of right sided Bochdalek hernias described. Most of these cases are asymptomatic but the most common symptoms are abdominal pain, dyspnea, postprandial fullness, nausea, or vomiting. BH is a rare condition discovered incidentally therefore it is important for physicians to be aware of BH as a possible diagnosis in patients with symptoms of abdominal pain, postprandial fullness, nausea and vomiting associated with difficulty breathing, and history of multiple abdominal surgeries.



[3670] **Figure 1.** Lateral CT Chest with evidence of diaphragmatic hernia in the posterior 1/3.

S3671

Spontaneous Pneumomediastinum and Pneumopericardium Secondary to Cannabinoid Hyperemesis Syndrome

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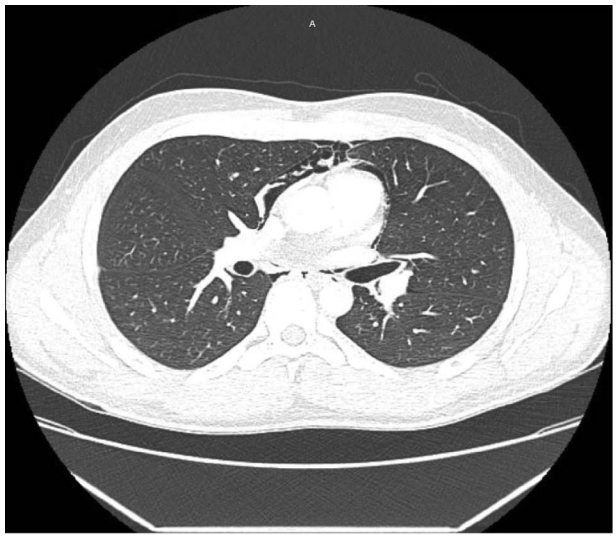
Introduction: Pneumomediastinum (PM) is the presence of free air or gas within the mediastinum. It is often called spontaneous pneumomediastinum (SPM) in the absence of trauma or a clear secondary cause. The incidence of SPM is reported between 0.001% and 0.014% of hospitalized patients and is more commonly seen among young adult males. We report a case of a 22-year-old male who developed SPM and pneumopericardium secondary to cannabinoid hyperemesis syndrome (CHS).
Case Description/Methods: We report a case of a 22-year-old male with a history of CHS who presented to the hospital with complaints of intractable nausea, vomiting, and generalized abdominal pain. The patient denied fever, chills, hematemesis, melena, or hematochezia. The patient has had similar episodes in the past treated with anti-emetics, not requiring hospital admission. On admission, vitals were stable. Clinical laboratory results showed hypokalemia 3.3. Serum lipase was normal. Urinalysis was positive for cannabinoids. Electrocardiogram showed a normal sinus rhythm, no ST-T wave changes. Physical exam revealed a soft abdomen with diffuse abdominal tenderness and no signs of peritonitis, and the lungs were clear to auscultation. Subcutaneous crepitus was noted over the chest wall. A Computed Tomography (CT) of the abdomen with intravenous contrast showed no acute intra-abdominal pathology and the presence of PM. CT chest with intravenous and oral contrast showed extensive pneumomediastinum, a small pneumopericardium, and no extravasation of oral contrast. The patient was transferred to the intensive care unit for closer monitoring, and cardiothoracic surgery was consulted. The patient was treated conservatively, with complete recovery (Figure 1).
Discussion: SPM is a rare condition characterized by free air in the mediastinum not preceded by thoracic trauma. It consists of a triad of thoracic pain, subcutaneous emphysema, and dyspnea. In a retrospective review, Weiss et al. reported 14 cases of marijuana use associated with PM. SPM results from alveolar rupture following an acute rise in intra-alveolar pressure. Cannabinoids have been used for their antiemetic properties, which are mediated by the cannabinoid receptor CB1. The stimulation of CB1 receptors can suppress gastric emptying in a dose-dependent manner, which may contribute to symptoms seen in CHS. In our case, PM may have resulted from the rupture of a subpleural bulla caused by forceful vomiting. The treatment of SPM is usually conservative and surgery is reserved for unstable patients.



[3671] **Figure 1.** CT chest with contrast showing extensive pneumomediastinum.

S3672

Suspect the Unsuspected: An Unusual Case of a Small Gastric Ulcer Presenting as Metastatic Breast Cancer

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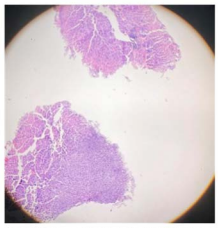
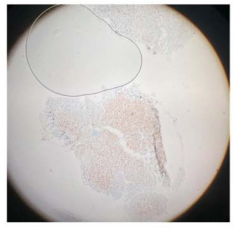
Louisiana State University Health Sciences Center, Shreveport, LA.

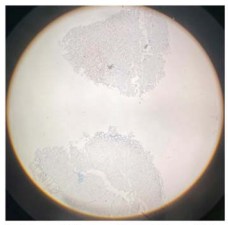
Introduction: Breast cancer is the most frequently diagnosed cancer worldwide and the leading cause of death due to cancer in women. The metastatic seeding of breast cancer to the gastrointestinal tract especially the stomach is very rare. We present a rare case of breast cancer metastases to the stomach presenting as an ulcer found on esophagogastroduodenoscopy.
Case Description/Methods: 60-year-old lady with PMH of Metastatic Breast Cancer stage IIIC (diagnosed 03/2016, Invasive lobular carcinoma with metastasis to spine and pelvis), HTN referred to GI Clinic with symptoms of abdominal pain in the epigastric region along with reflux symptoms. Pt has had EGD performed in 01/2020 which showed LA grade A esophagitis in the distal third of the esophagus, with the normal gastric mucosa. Gastric biopsies were performed, and immunohistochemistry showed H.pylori organisms. Pt was treated with triple therapy. Pt was lost to follow-up. She presented in the GI clinic in 11/2021 with similar complaints. As pt had a significant history of metastatic breast cancer with ongoing abdominal pain, a decision was made to perform EGD. EGD performed showed a small 3 mm × 3 mm ulcer with a clean base (Forrest grade III) along with patchy mild erythematous mucosa in the body and stomach. Biopsies were performed from the edge of the ulcer to rule out cancer as well as random gastric biopsy to rule out *H. pylori*. The pathology report showed poorly differentiated adenocarcinoma consistent with metastatic breast carcinoma with ER(+) 70%, PR(−), HER2(−), GATA 3(+), Ki-67 labeling index: about 20%. Pt was referred to Oncology for further management (Figure 1).
Discussion: Metastasis of breast cancer to the gastrointestinal tract is relatively rare but can present with clinical symptoms which include abdominal pain, bloating, loss of appetite, early satiety, nausea, and vomiting. In the present case, the main clinical features were burning abdominal pain, retching, and nausea. Among the patients with gastric metastases, the prevalent primary sites were breast cancer (27.9%), followed by lung cancer (23.8%), esophageal cancer (19.1%), renal cell carcinoma (7.6%) and malignant melanoma (7.0%). Gastric metastases from breast cancer developed more frequently from Invasive Lobular Carcinoma compared with Invasive Ductal Carcinoma. As clinicians, we should have a high suspicion of metastatic breast cancer in a pt with a history of breast cancer and gastrointestinal symptoms.



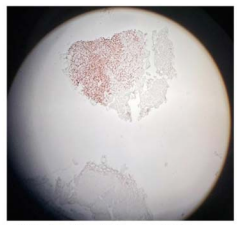
1a.Histopathology showing malignant cell with high nuclear cytoplasmic ratio



1b.Immunohistochemistry staining + for Ki67



1c. Immunohistochemistry staining + Estrogen receptor



1d. Immunohistochemistry staining + GATA 3

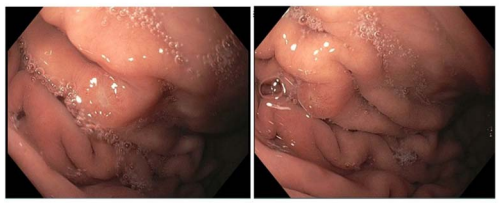


Fig 2a., 2b. Showing 3mm x3mm ulcer with a clear base in the gastric body

[3672] **Figure 1.** Histopathology and endoscopic images.

S3673

Successful Non-Surgical Management of Emphysematous Gastritis: A Rare Diagnosis

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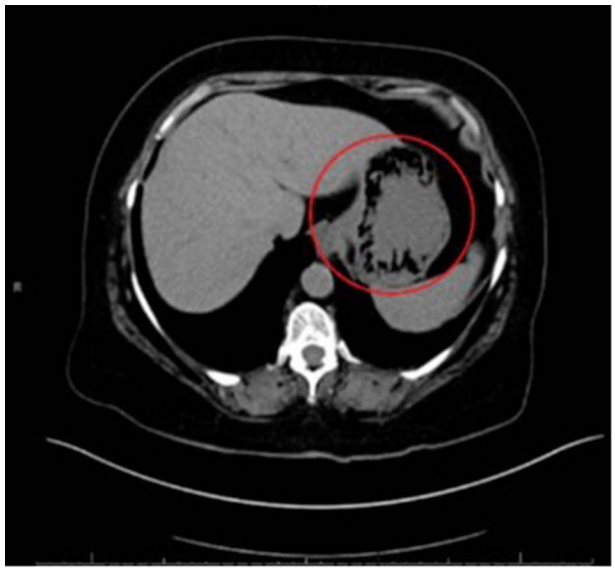
Introduction: Emphysematous gastritis (EG) is a rare condition characterized by the presence of gas within the gastric wall in association with clinical sepsis. This uncommon entity has a high mortality rate, and early diagnosis and treatment are essential to prevent progression of this potentially fatal condition. Here we describe a rare case of EG in a middle-aged female presenting with diffuse abdominal pain and vomiting. By providing the clinical course and presentation of this rare disease, we can help guide future clinician understanding and management of EG.
Case Description/Methods: A 64-year-old female with no pertinent gastrointestinal history presented to the emergency department with a one-week history of generalized abdominal pain and non-bloody emesis. On arrival, she was tachycardic with a heart rate of 112 beats per minute but was otherwise hemodynamically stable and afebrile. Physical examination was significant for diffuse tenderness to palpation in all four abdominal quadrants. Initial complete blood count revealed a white blood cell count of 14,100 per microliter of blood and complete metabolic panel revealed no abnormal values. Abdominal and pelvic computed tomography showed air within the wall of the gastric body and gastric fundus with findings most consistent with emphysematous gastritis. The patient underwent treatment with bowel rest, intravenous fluid resuscitation, a proton-pump inhibitor, and broad-spectrum antibiotic therapy. Her symptoms gradually improved, her diet was advanced, and she was discharged without complaints (Figure 1).
Discussion: Emphysematous gastritis is a rare, but potentially fatal condition caused by gas-forming microorganisms with a mortality rate of 55-61%. Due to its rarity, no guidelines have been established for the management of EG. However, early diagnosis and initiation of conservative medical management has been shown to reduce mortality and the need for surgical intervention. Surgical exploration is reserved for patients who demonstrate signs of clinical deterioration, perforations, peritonitis, uncontrolled disseminated sepsis or who have failed optimal medical management. Here we describe a case of EG in a female presenting with manifestations of sepsis that was treated successfully with conservative medical management. This case report adds to the limited literature on the clinical course and treatment of this rare disease by supporting the notion that surgical intervention may be foregone if the patient is stabilized and medical management is successful.



[3673] **Figure 1.** Abdominal and pelvic computed tomography without contrast showing air within the wall of the gastric body and gastric fundus representative of emphysematous gastritis.

S3674

Successful Endoscopic Pyloric Therapy in a Patient With Gastroparesis and Normal 3 Cpm Gastric Myoelectrical Activity After Failed Surgeries for Superior Mesentery Artery Syndrome and Median Arcuate Ligament Syndrome

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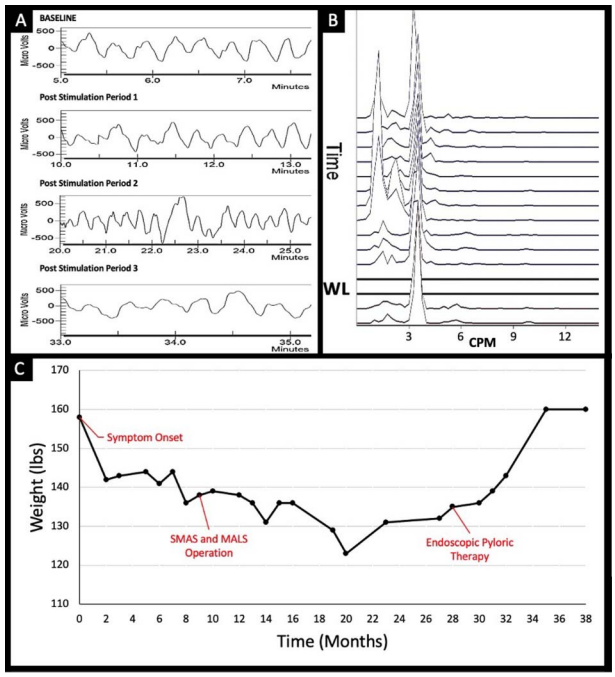
Introduction: Patients with chronic nausea and vomiting and gastroparesis (GP) may undergo empiric and often unnecessary surgical procedures in attempts to control symptoms. This case demonstrates the successful diagnosis and endoscopic management of pyloric neuromuscular dysfunction in a patient GP and refractory nausea and vomiting.
Case Description/Methods: AL is a 21 year old female with history of POTS, Ehlers Danlos, Superior Mesenteric Artery Syndrome (SMAS), Median Arcuate Ligament Syndrome (MALS), IBS-C, and GP presented initially with nausea, vomiting, early satiety, and post-prandial pain. Patient failed trials of anti-spasmodic and prokinetic medications. She also underwent cholecystectomy, duodenojejunostomy for SMAS, and median arcuate ligament release for MALS with minimal relief of symptoms. She underwent multiple dilations of her duodenojejunal anastomosis without improvement of symptoms. During this time, she lost 35 pounds, failed enteral nutrition, and required IV fluids and total parental nutrition. She was referred to the GI motility clinic for further evaluation. An EGD was normal with patent duodenojejunal anastomosis. A 4 hour solid-phase gastric emptying test revealed 25% retention at 4 hours (normal 0-9%). An electrogastrogram (EGG) with water load satiety test showed normal 3 cpm Gastric Myoelectrical Activity (GMA) after she ingested 125 ml of water (normal $>$ 240 ml). Pyloric distensibility index (DI) was 8.2 (Normal $>$10). Botulinum toxin A was injected into each quadrant of the pylorus. Over the next 7 months, she had multiple botulinum injections and pyloric balloon dilations. Symptoms improved and she began eating food which led to a 25 lb weight gain. IV fluids and tube feedings were stopped (Figure 1).
Discussion: The diagnosis of GP is established after mechanical obstruction of the stomach is excluded. Previous studies have questioned whether surgical correction of SMAS improves symptoms in GP. A proportion of these patients also undergo correction of MALS to decrease abdominal pain potentially related to celiac artery compression from the median arcuate ligament. EGG was used in AL to subtype GP into dysrhythmic or normal 3 cpm GMA. GP with normal 3 cpm GMA is associated with pyloric stenosis and/or pyloric neuromuscular dysfunction. In this case, GP with 3 cpm GMA subtype was the cause of symptoms, not SMAS or MALS, and responded well to endoscopic pyloric therapies.



[3674] **Figure 1.** (A) EGG recordings of GMA showing 3 cpm waves at baseline and during Periods 1-3 after the WL. (B) Spectral analysis of EGG recording of GMA showing strong 3 cpm peaks before and after the water load satiety test (WL). (C) Graph displaying patient's weight and procedures over time. She continued to lose weight after SMA and MALS operations but returned to baseline weight after starting endoscopic pyloric botulinum injections and dilations.

S3675

Steroid Treatment for Patient With Intractable Nausea, Vomiting and Abdominal Pain With Underlying Autoimmune Gastritis

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Introduction: Gastritis and cannabinoid hyperemesis syndrome (CHS) share many overlapping symptoms: nausea and vomiting (N&V), and abdominal pain.[1] With the continued legalization and adoption of marijuana in the United States, it will become crucial to determine the etiology of the aforementioned cardinal symptoms to improve treatment plans.
Case Description/Methods: Pleasant 29-year-old male with PMH of N&V in teen years presents with onset of nausea and episodes of vomiting over the last few months. Patient complained of heightened baseline nausea, exacerbations of post-prandial N&V, and occasional N&V without food. Claims bloating and denied dysphagia, GERD, headaches, or visual changes. Minimal relief with use of marijuana and ondansetron and adverse symptoms with promethazine. EGD was performed with subsequent gastric biopsy positive for *H. pylori* with concurrent autoimmune gastritis and underlying intestinal metaplasia; erythema and erosions found in the antrum and stomach body. Progressive worsening of symptoms, 20 lbs weight loss and LLQ abdominal pain prompted EGD and colonoscopy six weeks after initial upper endoscopy. Prior to EGD/Colonoscopy, patient reported previous history of yearly idiopathic pericarditis which is believed to be autoimmune in nature. Gastric mapping upon his second EGD showed ongoing autoimmune gastritis of the gastric body (lesser and greater curve). Prednisone 40 mg was started for patient with full resolution of GI symptoms in three weeks.
Discussion: Patient's initial symptoms were believed to be related to CHS. However, further EGD evaluation and patient's updated PMH of pericarditis suggest a possible autoimmune origin. With steroid use, patient found resolution with N&V and abdominal pain. Hallmark symptoms of CHS are abdominal pain and recurring episodes of N&V with the cessation of adverse symptoms when cannabis use is stopped. If symptoms persist past cessation of cannabinoids, other sources of intractable N&V need to be evaluated. In the setting of autoimmune gastritis, with intractable nausea, vomiting, and abdominal pain, a trial of short-term steroids can be considered in a patient that has otherwise refractory GI symptoms, despite treatment of H Pylori and conservative pharmacologic management.

S3676

Synchronous Gastroesophageal Junction and Gastric Adenocarcinoma in an Otherwise Healthy Male

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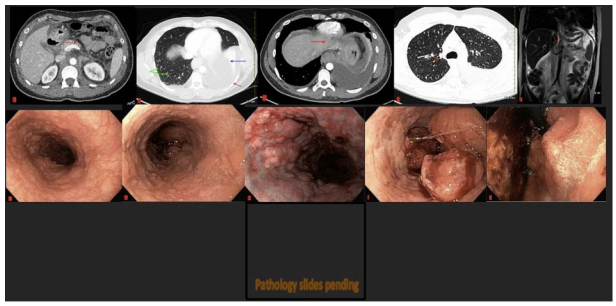
Introduction: The incidence of multiple primary carcinomas (MPCs) is increasing but remains a rare diagnosis. MPCs are two or more unrelated cancers in one patient. The development of MPCs is theorized to be related to unhealthy lifestyles and genetic susceptibility. We present a previously healthy male without family history of GI malignancy diagnosed with synchronous gastroesophageal junction (GEJ) and gastric adenocarcinoma.
Case Description/Methods: A 41-year-old male without prior medical history presented with recent onset solid food dysphagia associated with worsening abdominal pain, weight loss, and dyspnea for 5 months. He denied alcohol or tobacco use, or family history of malignancy. Labs showed normal CEA and CA 19-9, and Computed Tomography (CT) of the chest and abdomen revealed bilateral pleural effusion with left lung collapse, numerous pulmonary nodules and enlarged mediastinal and abdominal lymph nodes (Figure 1A and B). There was a circumferential esophageal thickening at the GEJ and a concern for interstitial edematous pancreatitis (Figure 1C and D). Magnetic Resonance Imaging (MRI) of the abdomen revealed mesenteric nodularity concerning for peritoneal carcinomatosis and diffuse gastric wall and GEJ thickening concerning for malignancy (Figure 1E). His QuantiFERON-TB Gold (QFT) was positive, but AFB smears and PCR test were negative, consistent with latent TB. Upper GI endoscopy revealed extensive nodularity of the esophageal and gastric mucosa with a large ulcerated GEJ mass (Figure 1F-J). Gastric and esophageal biopsies revealed invasive adenocarcinoma with a differential expression of p53 staining, extensive mucinous features but without signet ring cells. Pleural and peritoneal fluid cytology were consistent with metastatic adenocarcinoma of primary GI origin. His hospital course was complicated by recurrent pleural effusions, pulmonary embolism and upper gastrointestinal bleeding. Patient was followed with oncology for chemoradiation therapy for advanced unresectable gastric and GEJ adenocarcinoma with distant metastasis.
Discussion: Esophageal and gastric cancer risks are modulated by multiple factors, including genetic susceptibility modifying environmental factors. Synchronous GEJ and gastric adenocarcinoma are rare and often confused with recurrence or metastasis of malignant tumors. Inactivation of the TP53 gene plays a crucial role in the formation of solid GI tumors.



[3676] **Figure 1.** A: CT A/P (axial) showing findings concerning for interstitial edematous pancreatitis (red arrow). B: CT A/P (axial) showing moderate left pleural effusion associated with multisegmental left lower lobe collapse (red and blue arrows) and numerous pulmonary nodules (green arrows). C: CT Chest (axial) showing diffuse circumferential esophageal and gastric wall thickening, most pronounced at the gastroesophageal junction (red arrow). D: CT Chest (axial) showing innumerable bilateral solid pulmonary nodules and mild mediastinal and upper abdominal lymphadenopathy (red arrow). E: MRIA/P (coronal) showing diffuse wall thickening of the gastroesophageal junction and stomach (red arrow). F: Endoscopy of distal esophagus demonstrating mucosaL nodularity. G: Endoscopy of proximal esophagus demonstrating nodularity. H: Endoscopy of esophagus under narrow band imaging, demonstrating nodularity and mucosal changes. I: Endoscopy showing large fungating GEJ mass with mucosal bleeding. J: Retroflexion view of large fungating GEJ mass with extensive gastric mucosal nodularity. Pathology slides: Pathology slides of biopsies with p53 stain demonstrating differential p53 stain where poorly differentiated areas had a positive expression and loss of expression in better differentiated areas. Final genetics: pMMR, MSI-stable, TMB 3, no actionable mutations, HER2 FISH negative. MSH6 VUS was detected; genetics evaluation also showed MSH6 VUS; PDL1 IHC 1% (CPS).

S3677

Tissue Is the Issue: A Rare Case of Collagenous Gastritis

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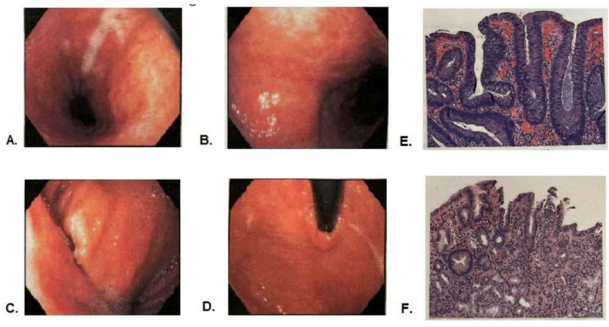
Introduction: Collagenous gastritis (CG), collagenous sprue, and collagenous colitis are rare forms of collagenous gastroenteritides marked by subepithelial collagen deposition of more than 10 mm and inflammatory infiltrate in the lamina propria. CG was first identified in 1989. It's a rare disease, with just 100 cases reported so far. Here, we present a distinct case of collagenous gastritis.
Case Description/Methods: 52-year-old female with no chronic medical conditions presented with symptoms of mild reflux, epigastric pain, and intermittent diarrhea up to 5 times per day. She had sporadic Ibuprofen use for headaches. Her mother was diagnosed with lupus and a half-sister with a history of mixed connective tissue disorder. Initial upper endoscopy revealed grade B esophagitis and gastritis, biopsies showed CG. Colonoscopy with random biopsies showed no evidence of collagenous colitis. She was treated with high dose proton pump inhibitor (PPI) and repeat endoscopy in 4 weeks with biopsies via Sydney protocol was performed. Additional blood work was normal including normal thyroid panel, celiac screen (anti-transglutaminase IgA: < 1.0 U/ml, IgA: 2.34 g/L) and IgG4 titer (0.27 g/L.) Repeat EGD with biopsies per Sydney protocol confirmed CG in all gastric quadrants, except fundus. After stopping NSAIDs and continuing on PPI, her symptoms resolved with a plan for surveillance endoscopy in 6 months (Figure 1).
Discussion: In our patient, the diagnosis of CG led to further investigations to rule out possible associated autoimmune diseases. The occasional ibuprofen may have been contributory, but the repeat biopsies on the second endoscopy confirmed the presence of CG despite cessation. The only contributing factor in her case is positive family history. There are very few cases reported in the literature with the possible association of lupus with CG. This distinctive case of CG is an important contribution to the limited pool of existing cases as the patient herself did not have any preexisting allergic or autoimmune conditions and it appears that this process occurred idiopathically. Given the rarity of the condition and limited literature available, we emphasize the importance of delineated medical guidelines for appropriate screening and surveillance.



[3677] **Figure 1.** Endoscopic appearance of collagenous gastritis. A, B. body, C. Antrum D. fundus ; E, F: Histology of collagenous gastritis characterized by thickening of sub epithelial basement membrane accompanied by diffuse superficial lymphoplasmacytic infiltrates and surface epithelial degeneration.

Table 1. Summary of Collagenous gastritis (CG)

COLLAGENOUS GASTRITIS (CG)
- Characterized by marked sub epithelial collagen deposition with associated inflammatory infiltrate.
EPIDEMIOLOGY
- Female Preponderance
- All age groups but primarily affects adults.
ETIOLOGY
- The etiology is unknown
- Stancu et al. outlined three pathogenic mechanisms that may lead to collagen deposition in cases of CG:
(1) Chronic inflammation
(2) Fibroblast sheath abnormality
(3) Leakage of plasma proteins and fibrinogen
ASSOCIATIONS

Table 1. (*continued*)
- Intestinal and autoimmune disorders, including celiac disease. collagenous enteritis, collagenous colitis, sjogren syndrome, SLE, juvenile arthritis, RA, Hashimoto's thyroiditis, Grave's disease, Diabetes mellitus type 1, and CVID.
- Medications such as Olmesartan, Venlafaxine
SYMPTOMS AND SIGNS
- Epigastric and or abdominal pain, anemia , gastrointestinal bleeding, diarrhea, nausea and vomiting, perforated ulcer, weight loss, abdominal distension, fatigue, dyspepsia, retrosternal pain, constipation and dysphagia.
DIAGNOSIS
- EGD with biopsy
TREATMENT
- Anti-secretory agents including PPIs, and H2 receptor antagonists, steroids, iron supplementation and hypoallergenic diets have been tried with limited success.
- Other treatment modalities , such as sucralfate, mesalazine, bismuth subsalicylate, furazolidone, sulfasalazine, azathioprine, and parenteral nutrition have also been tested.

S3678

The Use of Endoscopic Band Ligation for the Management of Gastric Antral Vascular Ectasia (GAVE)

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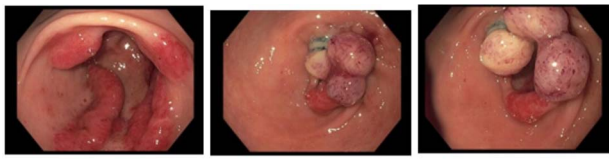
Lankenau Medical Center, Wynnewood, PA.

Introduction: Gastric antral vascular ectasia (GAVE), also known as watermelon stomach due to its endoscopic appearance, is characterized by ectatic mucosal vessels in the gastric antrum. . The clinical presentation is similar to that of portal hypertensive gastropathy (PHG) with chronic slow GI blood loss. Though associated with cirrhosis, unlike PHG it is not caused by portal hypertension. These lesions are typically flat, linear, red stripes and so the diagnosis and treatment are based on this classic appearance which may be confirmed on biopsy. Serial treatments with argon plasma coagulation can reduce transfusion requirements and restore hemoglobin levels in these patients. Below we present a case of nodular GAVE, a rare variant, which requires a high level of clinical suspicion for appropriate and timely therapy.
Case Description/Methods: This is an 84-year-old female patient with a past medical history of chronic kidney disease who presented for endoscopic evaluation of iron deficiency anemia. Initial, upper endoscopy and colonoscopy showed a frond-like/villous linear series of non-bleeding masses in the gastric antrum. Pathology demonstrated hyperplastic/inflammatory changes. She was referred to an advanced endoscopist for endoscopic ultrasound (EUS) and management. EUS showed findings consistent with nodular GAVE given vascular flow within each of the columns. Endoscopic band ligation (EBL) was then performed successfully.
Discussion: Nodular GAVE can easily be mistaken for hyperplastic polyps, a misdiagnosis that would delay treatment. The first-line treatment of GAVE is the endoscopic application of argon plasma coagulation (APC), a type of thermal therapy that is applied to the affected area causing localized necrosis. However, EBL has been recently used as an alternative therapy especially for refractory cases. A recent meta-analysis[1] of 10 studies showed that treatment response to EBL was 81% with a 15.4% recurrence rate. EBL was also associated with a decrease in RBC transfusion requirement and hospital length of stay. Therefore, further research studies on the role of EBL should be considered.



[3678] **Figure 1.** Endoscopic band ligation in the gastric antrum.

REFERENCE

1. Mohan BP, Toy G, Kassab LL, et al. Endoscopic band ligation in the treatment of gastric antral vascular ectasia: a systematic review and meta-analysis. Gastrointest Endosc. 2021;94(6):1021-1029.e10. doi: 10.1016/j.gie.2021.08.017. Epub 2021 Sep 1. PMID: 34480922.

S3679

The Use of Over-the-Scope Clip to Repair Anastomotic Leak After Laparoscopic Sleeve Gastrectomy

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Introduction: Laparoscopic sleeve gastrectomy (LSG) is a widely used bariatric operation for patients with morbid obesity. Anastomotic leak is a well-known complication, reported in 0.5-7 % in this patient population. We report a case of post-LSG gastric leak successfully treated with the use of an over-the-scope clip during EGD.
Case Description/Methods: A 39-year-old woman with a history of GERD, type 2 diabetes mellitus, hypertension, rosacea, and morbid obesity underwent a laparoscopic sleeve gastrectomy. Twelve days later, she presented with severe left upper quadrant pain, nausea, vomiting, intolerance to oral intake, and tachycardia with heart rate of 115 beats per minute. She was found to have leukocytosis with WBC of 17,100. Her complete metabolic panel was normal. A CT scan showed a 15 cm fluid and air collection along the greater curvature of the stomach suggestive of an abscess. She was admitted for intravenous fluid, antibiotics, and total parenteral nutrition. A percutaneous drainage catheter was placed, which drained large amount of frank pus. Fluid culture grew Methicillin-sensitive Staph aureus. A gastrograffin upper GI series showed a gastric leak at the proximal edge of the staple line of the LSG. The patient underwent an EGD which revealed a 10 mm defect in the gastric body at the proximal edge of the anastomosis. An over-the-scope clip (Ovesco, Tubingen, Germany) was placed which successfully closed the defect. A repeat gastrograffin upper GI series showed resolution of the gastric leak. Within several days, the percutaneous drainage catheter stopped draining and was removed. The patient was started on regular diet with no problems. Seven months later, the patient has done well with no recurrence of symptoms.
Discussion: Anastomotic leak is a serious complication of LSG. Early recognition and prompt treatment are crucial. Treatment options include endoscopic clipping, endoscopic stenting, fibrin glue application, surgical oversewing, conversion to gastric bypass, jejunal limb attachment over the fistula, and total gastrectomy as the last resort. The use of over-the-scope clip has emerged as an effective and safe option to close the gastric leak, as demonstrated by this case.

S3680

The Master of Disguise: Isolated Gastric Variceal Hemorrhage as a Complication of Endoscopic Gastric Biopsy

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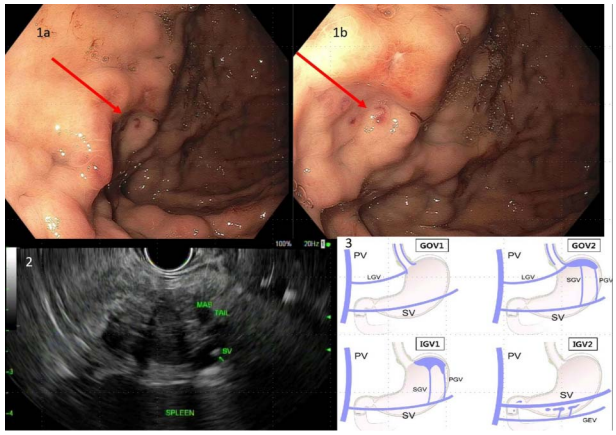
[1]Mount Sinai St. Luke's and Mount Sinai Roosevelt, New York, NY; [2]Icahn School of Medicine at Mount Sinai Morningside-West, New York, NY; [3]Mount Sinai Beth Israel, Morningside and West, New York, NY.

Introduction: Splenic vein thrombosis (SVT) causes left-sided portal hypertension that can result in the formation of gastric varices. Gastric varices can be isolated or contiguous with esophageal varices. Isolated gastric varices may be difficult to distinguish from gastric rugae. They are responsible for 10-30% of all variceal bleeds.

Case Description/Methods: A 61-year old male with a past medical history of coronary artery disease on aspirin and clopidogrel presented to the emergency department with 2 days of black tarry stools and associated dyspnea and palpitations. 3 weeks ago, he saw an outpatient gastroenterologist to evaluate new onset anemia (hemoglobin 10 mg/dL) and an unexplained 25-pound weight loss over 6 months. He underwent esophagogastroduodenoscopy (EGD) 2 days prior to presentation in which a protruding lesion in the gastric fundus was biopsied. On initial presentation, he was hemodynamically stable with epigastric tenderness on physical exam. Initially, his hemoglobin was 8.1 mg/dL, which further decreased to 6.6 mg/dL that evening requiring transfusion. Computed tomography of the abdomen with IV contrast showed a 4.6 cm pancreatic tail lesion with associated splenic vein thrombosis. The patient underwent EGD with endoscopic ultrasound (EUS) which revealed a fundal isolated gastric varix with stigmata of recent bleeding. EUS guided biopsy results of the pancreatic tail lesion demonstrated a well-differentiated neuroendocrine tumor (Figure 1).
Discussion: Gastric varices (GV) are categorized based on their location. Gastroesophageal varices (GOV) include GOV1, extending from the esophagus to the lesser curvature of the stomach, and GOV2, extending from the esophagus to the greater curvature. Isolated gastric varices (IGV) include IGV1 in the fundus, while IGV2 are located at ectopic gastric sites including the antrum, body, pylorus, incisura and duodenum. The most common gastric varix is GOV1 (74%). IGV1 comprises 8% of total GV and 78% of IGV. A prospective cohort study by Sarin et al. noted IGV1 to bleed at a much higher rate (78%) than IGV2 (9%). Gastric vein obliteration is the most successful modality in treating acute bleeds and harbors the lowest rebleeding rate (22%). Gastric varices have a similar bleeding risk to esophageal varices (25%) and are more difficult to treat. For patients with risk factors for SVT (pancreatitis, cirrhosis and other prothrombotic states) who present with a GI bleed, IGV should be included in the differential.



[3680] **Figure 1.** a, b: Endoscopic image of isolated gastric varix with stigmata of recent bleeding; 2: EUS image of the pancreatic tail mass and the splenic vein with visible thrombosis; 3: Anatomy of gastroesophageal varices and Isolated gastric varices. GEV, Gastroepiploic vein; LGV, Left gastric vein; PGV, Posterior gastric vein; PV, Portal vein; SGV, Short gastric vein; SV, Splenic vein.

S3681

The Diagnostic Challenge of a Dieulafoy's Lesion

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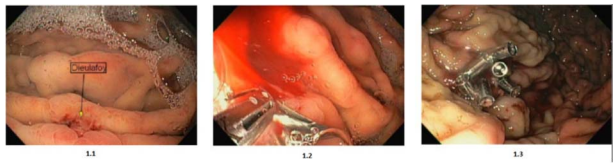
Introduction: A Dieulafoy lesion is a rare but important cause of gastrointestinal bleeding. It is estimated to account for 1-2% of acute gastrointestinal bleeds. This aberrant artery does not reduce in size when it extends from the submucosa to the mucosa resulting in severe arterial bleeds from tiny vessel stumps.
Case Description/Methods: A 65-year-old man with multiple comorbidities including heart failure, diabetes mellitus type II, and hypertension presented with ongoing epigastric pain, melena, and diaphoresis. The patient endorsed recent use of ibuprofen and aspirin for pain. On arrival at the Emergency Department, he was hypotensive and presented with acute blood loss anemia. The patient was started on intravenous pantoprazole and taken for esophagogastroduodenoscopy (EGD), which demonstrated adherent blood clots and pooling of blood in the stomach. There was no visualization of an active bleeding source. Ongoing melena prompted a second, and later on, a third EGD without significant findings. Furthermore, two CT angiograms did not reveal an active source of bleeding. The patient was scheduled for enteroscopy and capsule endoscopy to visualize potential lesions in the small intestine. During this examination, a visible vessel consistent with a Dieulafoy lesion was noted between two folds in the gastric body midway between the lesser and greater curvature. The lesion required a total of five clips and endoscopic epinephrine injections to control the hemorrhage. Overall, the patient received 15 units of pRBCs, 4 fresh frozen plasma, and two platelet concentrates (Figure 1).
Discussion: This case highlights an important cause of an obscure acute gastrointestinal bleed which is frequently difficult to visualize. Patients with Dieulafoy lesions tend to require multiple endoscopic procedures as the diagnostic yield of the first endoscopy ranges around 70%. Males tend to be two times more affected than females. The usual age group lies within the sixth or seventh decade with risk factors including chronic kidney disease and cardiovascular diseases. The concomitant use of NSAIDs increases the risk of mucosal damage and localized atrophy revealing the aberrant artery. Furthermore, ongoing bleeds and the need for multiple blood transfusions increase the risk for volume overload and other transfusion-associated injuries contributing to an estimated mortality rate of 9% and 13%.



[3681] **Figure 1.** 1.1 – Dieulafoy lesion in midgastric body 1.2 – Bleeding Dieulafoy vessel 1.3 – Status post local epinephrine injection and use of endoclips.

S3682

Vagal Nerve Injury Presenting as Acute Gastric Outlet Obstruction: A Rare Case Presentation

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Introduction: Gastroparesis is a syndrome of delayed gastric emptying in the absence of a mechanical obstruction. While the majority of cases of gastroparesis are idiopathic or related to poorly controlled diabetes (DM), it may also arise as a complication of surgery or from vagal nerve injury. Procedures including carotid endarterectomy, anti-reflux surgery, aortic aneurysm repair, and heart and lung transplants have been reported to cause vagal nerve injury. We report the rare case of a patient experiencing an inadvertent vagal nerve injury leading to gastroparesis and subsequent gastric outlet obstruction (GOO).
Case Description/Methods: A 60-year-old female with a history of DM and atrial fibrillation treated with multiple radiofrequency ablations (RFAs) presented with two days of abdominal pain, distension, and nausea. She underwent repeat RFA the day prior to presentation and was feeling well previously. Laboratory evaluation was unremarkable. CT abdomen pelvis with oral contrast demonstrated a markedly distended stomach with ingested debris, air and oral contrast. The pylorus was seen to take an abrupt 180 degree turn into the first portion of the duodenum with decompression of the remaining small bowel, concerning for GOO. A nasogastric tube was inserted for decompression with plans for endoscopic evaluation to rule out a mechanical obstruction. The following day, an EGD revealed a large gastric bezoar in

the gastric body and fundus. The pylorus was visualized and patent without evidence of stenosis, ulceration, or malignancy. The diagnosis of gastroparesis from vagal nerve injury as a complication of RFA was made. The patient was started on metoclopramide with improvement of symptoms over the next 24-48 hours and was able to tolerate a full diet at the time of discharge.
Discussion: Vagal nerve injuries remain an exceedingly rare but possible complication of atrial fibrillation RFA. In a large retrospective study, this complication was seen to occur within 72 hours in less than 1% of patients undergoing atrial fibrillation RFA. Clinicians should retain a high index of suspicion for vagal nerve injury in patients presenting with acute GOO with no prior history of delayed gastric motility, offending agents, or infections. Management should consist of nasogastric decompression, early endoscopic evaluation to rule out a mechanical obstruction, and treatment with prokinetic agents. The majority of patients make a full recovery within 1 month, however some experience symptoms up until 1 year.

S3683

Two Tales of Gastric Mucormycosis

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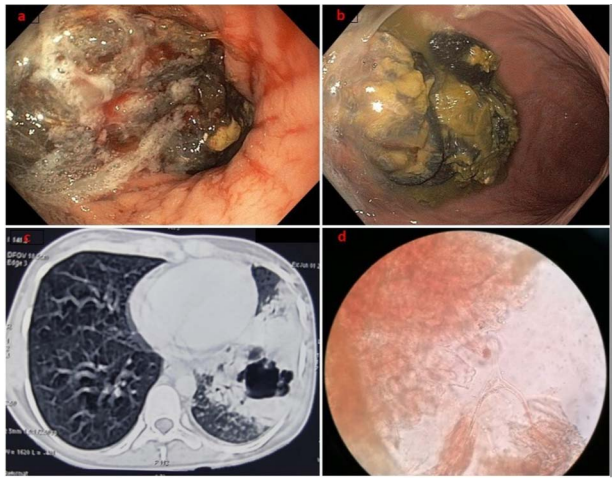
Introduction: Gastric mucormycosis is a rare but potentially lethal infection seen more often in immunocompromised individuals. Mucormycosis mostly involves upper respiratory tract, orbit, brain or lungs and rarely involves the gastrointestinal (GI) tract. Stomach is the commonest GI site.
Case Description/Methods: First patient, a 58-year-old male presented to us with progressive dysphagia and recurrent malena for past 3 weeks. On oesophagoduodenoscopy (EGD) ulcerated mucosa with ooze was seen in oesophagus and black colored polypoid unhealthy growth was seen in stomach body [Figure 1a]. Biopsy from the oesophagus showed squamous cell carcinoma and stomach showed mucormycosis. The patient was admitted and started on Liposomal amphotericin B (LAMB) and proton pump inhibitors(PPIs). He was transfused 3 units of packed red blood cells(PRBCs) and malena settled over 4 days. EGD was repeated at 14 days showing decrease in size of the growth with no ooze [Figure 1b]. He was continued on LAMB for 4 weeks followed by posaconazole. Second patient was a 18 year old girl who presented to us with shortness of breath and diabetic ketoacidosis for which she was put on mechanical ventilation. On evaluation, she had progressive decline in blood hemoglobin levels and a large cavitatory lesion in the left lung [Figure 1c]. She was started on broad spectrum antibiotics and an EGD was done in view of worsening anemia requiring transfusion. Friable black colored coating was seen on stomach mucosa with no ooze or bleed. Biopsy and fungal smear revealed aseptate hyphae [Figure 1d] confirming mucormycosis and she was started on LAMB.
Discussion: Gastric mucormycosis is an opportunistic fungal infection which is lethal in untreated patients. Awareness of risk factors and high index of suspicion is required by physicians for early diagnosis and therapy. Presentation may be with GI symptoms such as bleed and abdominal pain or symptoms concerning rhinorbital or lung involvement with secondary involvement of stomach. Biopsy from suspected lesions confirms the diagnosis. Urgent management with LAMB and Posaconazole is essential for disease control as it is an invasive organism. Serial EGD can help in determining the healing of lesions and duration of therapy. Combination of medical and surgical management is often required for disease eradication.



[3683] **Figure 1.** (a) Black polypoid lesion with ooze (b) Decrease in size and ooze (c) Left cavitary lesion with consolidation (d) Aseptate hyphae seen on smear.

S3684

Treating *Helicobacter pylori* via IV Route in a Patient With Malabsorption Due to Gastric Bypass Surgery

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Introduction: *Helicobacter pylori* (*H. pylori*) is checked in all patients off of proton pump inhibitor (PPI) therapy prior to Roux-en-Y surgery because of the risk for ulcers and their complications. Ulcers carry a potential for bleeding; and if located in the excluded stomach, it would not be possible to reach by scope. Over time, H. pylori has become more difficult to treat. Failed attempts at treatment are usually attributed to poor medication adherence or antibiotic resistance. This case highlights a patient with treatment resistant *H. pylori* infection after Roux-en-Y gastric bypass.
Case Description/Methods: A 48-year-old female with a history of Roux-en-Y performed in 2012 due to obesity presented to clinic with ongoing abdominal pain, nausea, 18 kg weight loss, and poor oral intake. She was initially diagnosed with *H. pylori* in 2014, with EGD and gastric biopsies revealing chronic active gastritis with *H. pylori*. She reported being treated twice without eradication. Repeat EGD took place in 2020 with persistent *H. pylori* on biopsy. She was prescribed quadruple therapy: bismuth subcitrate potassium, metronidazole, tetracycline, and PPI. Despite this, she did not clear the infection. She was re-biopsied and tissue specimen was sent for susceptibility. Results only showed resistance to metronidazole. Based on susceptibilities, she was prescribed high dose amoxicillin three times daily and rabeprazole. Despite appropriate therapy, she tested positive once again. It became clear that the etiology of treatment resistance was secondary to malabsorption. She was ultimately treated with IV ampicillin, IV levofloxacin, and omeprazole for 10 days. Finally, her stool antigen studies returned negative.
Discussion: This case describes a patient with history of gastric bypass surgery who had persistent infection with *H. pylori* despite completing appropriate therapies. She was treated with an oral regimen in accordance to susceptibilities without clearance, suggesting malabsorption secondary to her gastric anatomy was rendering treatment ineffective. This predicament was overcome by administering antibiotics intravenously. This case brings to light the need for further research regarding treatment of *H. pylori* in the setting of malabsorption, as this not clearly outlined in current guidelines or literature.

REFERENCE
1. Shah SC, Iyer PG, Moss SF. AGA Clinical Practice Update on the Management of Refractory H pylori Infection: Expert Review. Gastroenterology. 2021;160(5):1831-1841. 10.1053/j.gastro.2020.11.059.

S3685

Unusual Stomach Mass: Gastric Metastasis of Malignant Leiomyosarcoma

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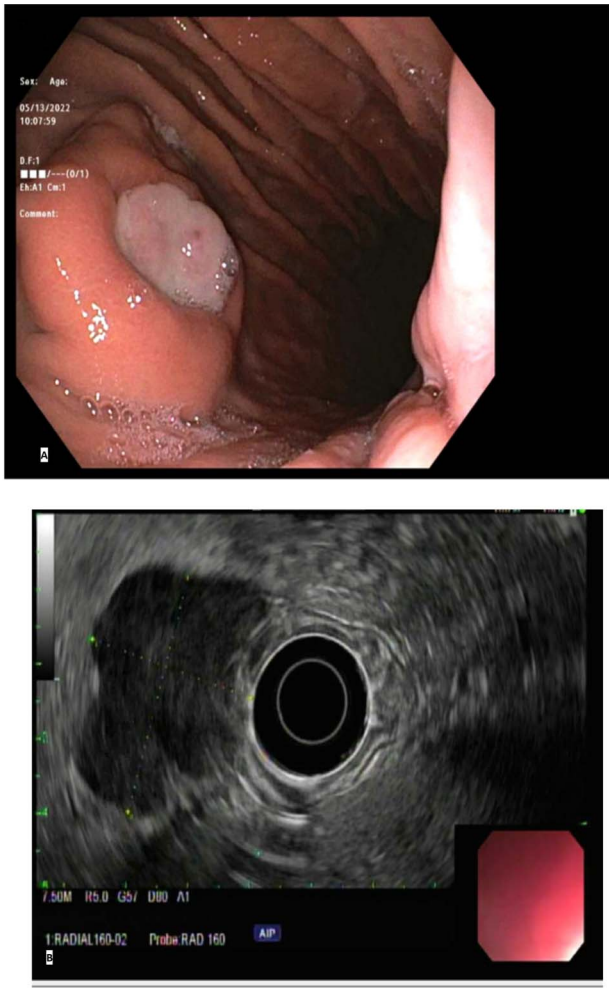
Introduction: Metastases in the stomach are rare findings, and likely represent a progressive malignant disease. With reported incidence of 0.2%-0.7%, the tumor can spread through hematogenous, lymphatic direct and peritoneal dissemination. Gastric metastases of leiomyosarcoma (LMS), a rare malignant mesenchymal smooth muscle tumor, have only been documented in a handful of case reports. We present a case of metastatic leiomyosarcoma in the stomach presenting with gastrointestinal bleeding.
Case Description/Methods: A 64-year-old male with history of metastatic LMS of his left lower extremity came with melena for 3 days. Hemoglobin on presentation was 8.7 g/dl from his baseline of 13-14g/dl. He was diagnosed with grade 3 LMS 3 years ago, involving femoral vessel wall and muscle of his left thigh. He underwent radical excision without any adjuvant chemo and radiotherapy despite recommendations. He subsequently developed metastasis to the lung two years later at which time he started chemotherapy. An esophagogastroduodenoscopy revealed a 6 mm mucosal nodule and a 3 cm mass with a clean based ulcer in the body of stomach. Biopsy, however, was negative for malignancy. He then underwent endoscopic ultrasound guided biopsy for cytology which revealed malignant spindle cell neoplasm in the background of lymphoid tissue consistent with metastatic LMS (Figure 1).
Discussion: LMS, a malignant tumor of smooth muscle origin, represents 20%-30% of soft tissue sarcomas. Predominantly uterine in origin, it can arise from the peritoneum, extremities, and blood vessels. Primary gastric LMS has also been reported in literature, but they are extremely rare and now are considered a type of gastrointestinal stromal tumor. LMS has a rapid tendency to metastasize, with lung, peritoneum, bone, and liver being common targets. Some rare cases of LMS metastasizing to pancreas, stomach and oral cavity have been reported. In general, metastases to the stomach are uncommon. The most common gastric metastases come from breast, lung, renal cell cancer and malignant melanoma. Metastasis of LMS to gastric mucosa has been limited to only a handful of case reports with primary tumors arising from kidney, uterus, and broad ligaments. The lesions are described as nodules, submucosal tumors, and ulcerative lesions, most of which are asymptomatic but can present as GI bleeding and abdominal pain. These metastases typically portray a poor prognosis. Local excision of the primary lesion with hormonal therapy and chemotherapy is considered standard treatment.



[3685] **Figure 1.** A. Endoscopic appearance of the metastatic LMS as a gastric body mass with clean based ulcer B. Endosonographic image of the mass in the gastric image.

S3686

Unusual Presentation of Immunoglobulin Light Chain (AL) Amyloidosis as a Gastric Subepithelial Lesion

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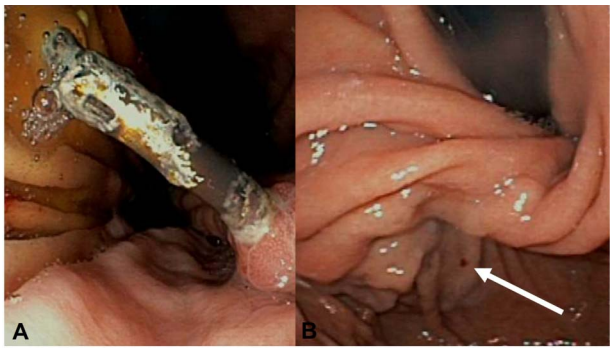
Introduction: Gastric amyloidosis is seen in up to 8% of patients. Immunoglobulin light chain amyloidosis (AL) is rarely associated with chronic lymphocytic leukemia (CLL). We report a rare case of symptomatic gastric AL amyloidosis in a patient in CLL presenting as a subepithelial lesion.
Case Description/Methods: 68-year-old male with a medical history of chronic kidney disease, and chronic lymphocytic leukemia presents with 1 month of melanic stools. He had endogastroduodenoscopy (EGD) revealing a duodenal dieulafoy lesion requiring endoclip placement at an outside hospital. Two weeks later he presented with a recurrence of melena. The patient was afebrile with vitals notable for bradycardia to 34 beats per minute. Physical examination revealed subconjunctival pallor without abdominal tenderness. Labs revealed a hemoglobin of 7.4 g/dL, platelets 84 K/uL, Bun 68 mg/dL, and Cr 5.02 mg/dL. Flex sigmoidoscopy showed normal colonic mucosa. EGD revealed the previous endoclip on the anterior wall of the gastric body and a single 5 mm red nodular mass in the gastric fundus. No source of active bleed was identified. The nodule was biopsied. Random biopsies taken from the stomach and colon revealed normal mucosa. Biopsy from gastric nodule revealed apple-green birefringence and AL amyloid. Diagnosis of AL with kappa light chain was verified with bone marrow biopsy and liquid chromatography with tandem mass spectrometry (Figure 1).
Discussion: Only 1% of gastric amyloidosis becomes symptomatic. This patient presented with melena, and his diagnosis was clinically challenging due to the atypical presentation of AL amyloidosis as a submucosal lesion. Endoscopically gastric amyloidosis commonly presents with erosions, erythema, and up to 44% of patients have an endoscopy-negative disease. The submucosal tumor is one of the least common presentations of gastric amyloidosis. His case highlights the importance of a complete evaluation of the cause of upper GI bleeds and how crucial careful endoscopic inspection is to make a diagnosis of gastric amyloidosis.



[3686] **Figure 1.** (A) previously placed endoclip with no stigmata of recurrence of bleed. (B) A single 5 mm mucosal papule found in the gastric fundus beneath the fold of the fundoplication.

S3687

Unusual Cause of Bleeding From an Underlying Glomus Tumor

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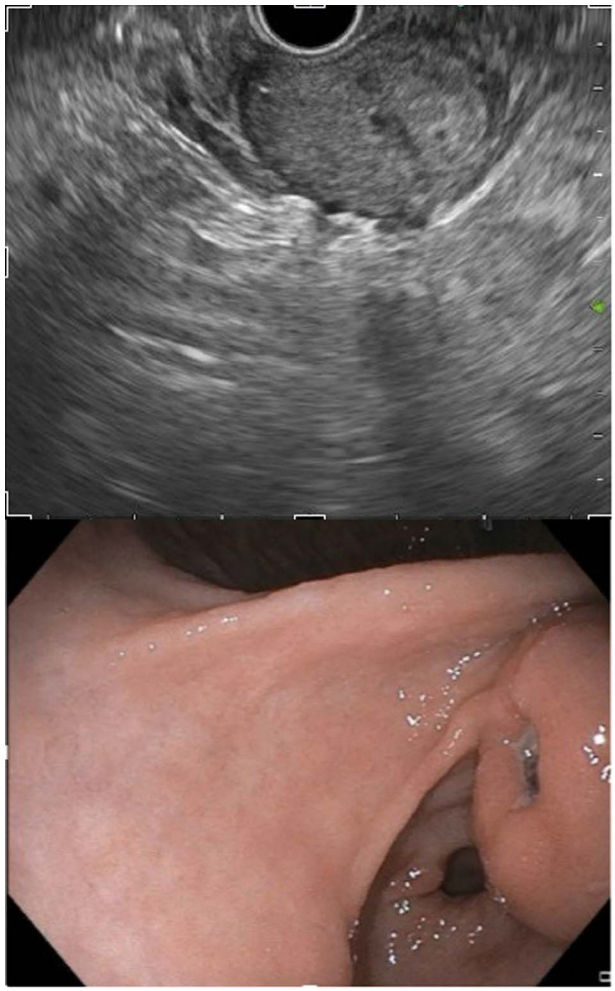
Introduction: Glomus tumors (GTs) are rare, mostly benign mesenchymal neoplasm accounting for nearly 1% of all gastrointestinal soft tissue tumors. Commonly seen in distal extremities, they do rarely occur in the gastrointestinal tract where it most commonly involves the stomach, especially the antrum. These tumors lack specific symptoms and endoscopic findings making it hard to differentiate from other gastrointestinal submucosal tumors without resection. We present a rare case of gastric glomus tumor (GGT) in the antrum diagnosed in a patient presenting with melena.
Case Description/Methods: 47-year- old male patient presented with melena. Upper endoscopy revealed a non-bleeding gastric ulcer with a visible vessel. Almost 3 cm submucosal lesion was seen at the site of the ulcer concerning for possible hematoma. Given the size of the lesion a follow up CT scan was performed 2 months later which showed persistent 3 cm submucosal circumscribed hyper enhancing lesion at the pylorus. The patient was then scheduled for endoscopic ultrasound which showed a hypoechoic lesion with discrete borders arising from the muscularis propria measuring 22 × 24 mm in maximal dimension. Fine needle biopsy of the lesion was performed using 22-gauge needle. Pathology revealed uniform round cells intimately associated with gaping vessels. The cells were reactive for vimentin and smooth muscle actin consistent with the diagnosis of glomus tumor. The patient was referred to surgery for excision (Figure 1).
Discussion: Glomus tumor of the stomach arise from the intramuscular layer and often present as a solitary submucosal lesion. GGTs usually present with epigastric discomfort, hematemesis, melena, nausea or vomiting or rarely as an incidental finding. Endoscopic ultrasound typically shows hypoechoic circumscribed lesions mostly arising from the fourth layer of the stomach. However biopsies are rarely conclusive thus making preoperative diagnosis challenging. Given its rare malignant potential, wide local surgical excision is the treatment of choice.



[3687] **Figure 1.** Endoscopic ultrasound of a glomus tumor in the gastric antrum. Figure 2: Upper endoscopy of a glomus tumor with a central ulcer and visible vessel.

S3688

Vanek Tumor, a Rare Gastrointestinal Tumor: Culprit or Innocent Bystander?

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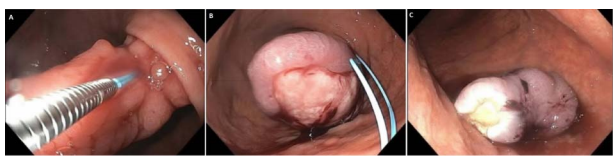
Introduction: Vanek tumor or inflammatory fibroid polyp (IFP) is a rare submucosal tumor of the gastrointestinal tract. It is most commonly found in gastric antrum and ileum. This is a benign tumor and only a few cases have been reported so far in the literature. We present a case of a large Vanek tumor with a coincidental finding of adenocarcinoma of the colon while undergoing evaluation for iron deficiency anemia.
Case Description/Methods: A 61-year-old female with past medical history of hypertension, diabetes mellitus type 2, hypothyroidism was referred for evaluation of anemia requiring blood transfusions. No prior history of endoscopic evaluation. Hemoglobin was noted to be 9.5 gm/dl with iron deficiency. Esophagogastroduodenoscopy showed a giant ulcerated 8 cm pedunculated polyp with a large thick stalk in the antrum, protruding through the pylorus into the duodenal bulb. Using a 33 mm Captivator II extra-large stiff snare, the polyp was brought from the duodenum to the antrum, an Endo loop was secured to the base of the stalk where epinephrine was injected. Piece-meal polypectomy was done with no bleeding noted, leaving behind a fibrotic stalk. Colonoscopy revealed a 6 cm pedunculated polyp at the sigmoid colon which was removed with cautery snare polypectomy and approximation of the edges with clips × 2. Pathology of the antral polyp showed inflammatory fibroid polyp and the sigmoid polyp was poorly differentiated adenocarcinoma (Figure 1).
Discussion: Vanek tumor is a benign inflammatory tumor with unknown etiology and no clear evidence of malignant potential. Despite its benign nature, it can cause gastrointestinal bleeding, intussusception, rarely can also cause intestinal necrosis and perforation. Treatment involves endoscopic resection of small sized polyps however large polyps historically have been treated with surgical resection. To our knowledge our case is the largest documented Vaneks tumor of the stomach which was successfully removed without need for surgery. The case also high lights the importance of adhering to guidelines for evaluation of iron deficiency anemia and performing bi-directional endoscopy as in our case the ulcerated polyp was most likely the culprit behind iron deficiency in addition to the adenocarcinoma of the sigmoid colon.



[3688] **Figure 1.** (A) Polyp with thick stalk. (B) Polyp with endo loop applied. (C) Part of resected polyp.

S3689

Unforeseen Postoperative Complication in a Bariatric Patient: The Rare Case of a Large Phytobezoar Causing Gastric Outlet Obstruction

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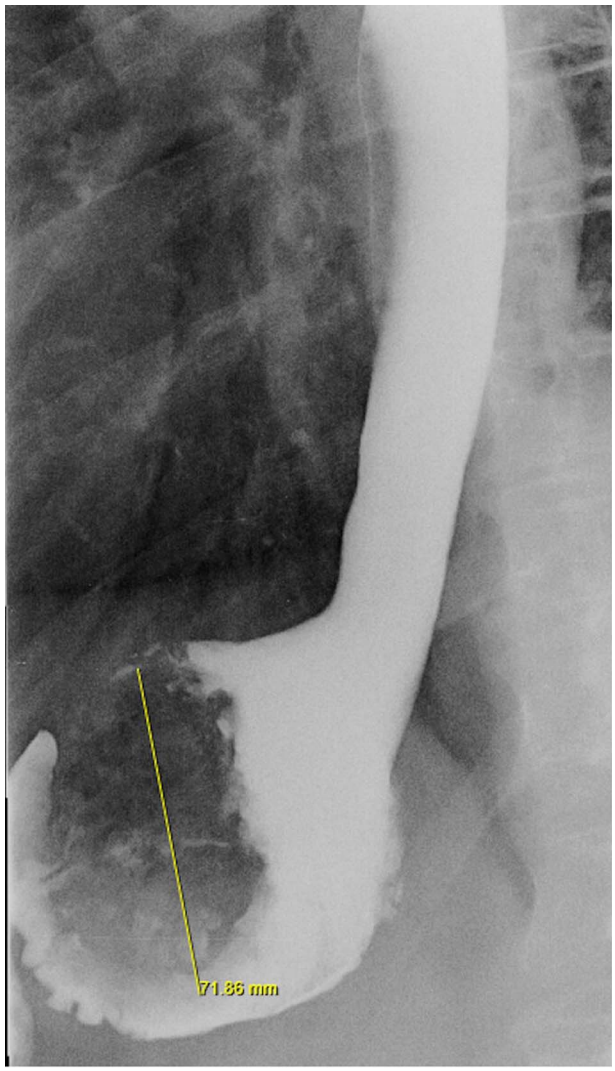
Introduction: Bariatric surgery has become increasingly popular in the treatment of obesity to achieve sustainable weight loss. Despite its numerous benefits, complications can arise due to postoperative gastric hypoacidity and motility disorders. Phytobezoars is an infrequent complication of bariatric surgery that arise from impacted aggregates of indigestible fruit and vegetables. Rarely, bezoars can cause gastric outlet obstruction and/or perforation. The following case highlights the presentation, diagnosis and treatment of phytobezoars and the importance of diet compliance in bariatric patients.
Case Description/Methods: A 60-year-old woman with hyperlipidemia was admitted due to progressive epigastric fullness and postprandial emesis of 2 weeks' duration. Moreover, nausea was constant associated with abdominal bloating and 7-pound weight loss. Pepcid did not alleviate symptoms. She denied fever, chills, chest pain, shortness of breath, diarrhea, constipation, hematochezia nor hematemesis. Her past surgical history was pertinent for sleeve gastrectomy in 2017. She denied toxic habits. Labs were unremarkable except for isolated thrombocytopenia. Physical exam was pertinent for mild epigastric tenderness; no abdominal rigidity nor guarding present. Despite abdominopelvic CT revealing a gastric fundus dilation, an upper GI series was the study that diagnosed a large lobular filling defect compatible with a 7.2 cm phytobezoar.[1] Upon questioning, the patient reported that she arrived from a cruise vacation before onset of symptoms. She recalled consuming large amounts of vegetables, nuts and fruits. Initial intervention consisted of papain meat tenderizer to help dissolve bezoar. Nevertheless, symptoms persisted due to oral medication intolerance. Upper endoscopy was performed and phytobezoar was removed with Roth Net retriever. After procedure, patient was able to progressively tolerate diet and was discharge home with resolution of symptoms. Avoidance of excessive high fiber diet was recommended to prevent future bezoar formations (Figure 1).
Discussion: The incidence of large phytobezoars has been reported as low as 0.3% in the general population, and therefore, its identification is a diagnostic challenge. Even though most of the patients remain asymptomatic, large bezoars can cause gastric outlet obstruction that could end in perforation if not treated promptly. This case emphasizes the importance of considering phytobezoars as a cause of GI symptoms and the importance of diet education in bariatric patients.



[3689] **Figure 1.** 1. Upper GI series X-ray showing a 7.2 cm phytobezoar causing a large lobular filling defect in the stomach fundus.

S3690

Uncharted Waters: A Rare Case of Ascites in a SLE Flare

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Introduction: Systemic lupus erythematous (SLE) is an autoimmune condition that generally affects women and can involve multiple organ systems. Gastrointestinal involvement is rare, and severe involvement can be seen in patients presenting with peritonitis, bowel ischemia, or mesenteric vasculitis. Here we present a case of sudden onset ascites, a rare manifestation of SLE.

Case Description/Methods: A 23-year-old woman with a past medical history of SLE, diagnosed 1 year before presentation and maintained on mycophenolate and a steroid taper, presented to the ER with generalized body aches and worsening abdominal distension for two days. She also complained of fatigue and joint pain but denied peripheral edema, oral ulcers, rash, urinary symptoms, shortness of breath, or chest pain. The patient had been following up with her own rheumatologist since her diagnosis. Vitals notable for a heart rate of 111bpm, but otherwise stable. Laboratory findings were significant for ESR 34, CRP 13.4, a ferritin level of 167, ANA titer of 1:640, dsDNA level of 340, a protein level >300 on urinalysis, and a low C3 level at 77. CT imaging revealed new large-volume ascites. Gastroenterology and rheumatology were consulted for further management. A hepatitis panel and QuantiFERON were negative. The patient underwent a diagnostic paracentesis and the ascitic fluid revealed a SAAG of 0.3 and an ascitic protein level of 3.5. A urine protein/creatinine ratio was also not within nephrotic range. Rheumatology recommended discharging the patient on an increased steroid dose for her lupus flare, and the patient reported complete resolution of symptoms at her outpatient appointment.
Discussion: SLE is an autoimmune disorder characterized by a relapsing-remitting course and a broad spectrum of clinical manifestations. Elevated inflammatory markers (ESR, CRP, ferritin) and antibodies (ANA, dsDNA, and anti-smith) are the hallmark laboratory findings. Typical clinical features can range from mild to moderate, with severe flares occurring in about 20-30% of cases. Many patients with SLE flares present with constitutional, musculoskeletal, renal, and hematologic symptoms - gastrointestinal symptoms comprise only 18% of these and generally include abdominal pain, nausea, and vomiting. This young patient, who presented with her first lupus flare, had painless and transient ascites, which resolved with paracentesis and steroids. This represents a rare manifestation of an SLE flare.

S3691

Where Is the Bumper? A Case of Percutaneous Endoscopic Gastrostomy (PEG) Tube Malfunction

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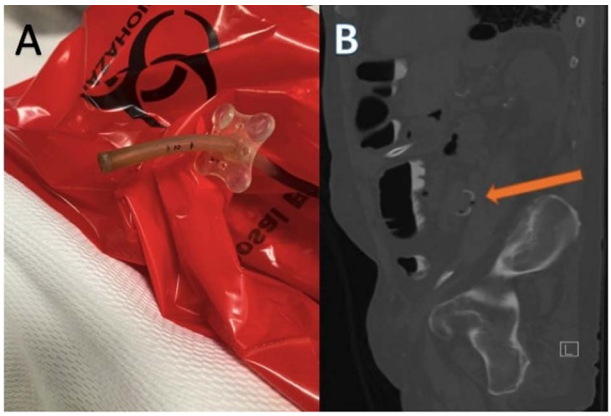
Introduction: Percutaneous endoscopic gastrostomy (PEG) tubes are used for enteral access in patients requiring nutritional support. PEG tube placement and removal generally are regarded as safe procedures. However, complications can be experienced in 16-70%, ranging from benign pneumoperitoneum to gastric outlet obstruction, buried bumper syndrome, and bowel perforation. Our case describes a retained internal bumper during PEG tube removal that undergoes spontaneous passage.
Case Description/Methods: Our patient is a 71-year-old male with a past medical history of tongue cancer treated with chemoradiation and subsequent dysphagia due to esophageal strictures necessitating PEG tube placement. He presented to the hospital with nausea, recurrent emesis, and an inability to tolerate tube feeds. His PEG tube was placed to gravity with one liter of output and relief of symptoms. A plan was made to proceed with gastrojejunostomy (G-J) tube to mitigate his symptoms. During bedside removal of his PEG tube, the internal bumper was noted to no longer be attached to the tube (Figure 1A). A Foley catheter was placed in the tract to maintain its patency. As the bumper was presumed to be retained in the stomach, esophagogastroduodenoscopy was performed but there was no evidence of foreign body throughout the exam. A computed tomography scan of his abdomen was obtained urgently and showed passage of the bumper into the jejunum (Figure 1B). Serial abdominal radiographs were obtained over the following day showing migration of the bumper into the rectum and was subsequently passed in his stool. Thereafter, the patient has successfully G-J tube placement by interventional radiology. His tube feeds were advanced to goal rate and the patient was no longer having any nausea or vomiting.
Discussion: Retained PEG tube internal bumper is a rare complication of PEG tube removal. Prior case reports have described bumper migration into the small bowel where it became lodged and resulted in small bowel obstruction. At least one prior case resulted in small bowel perforation. In cases of bowel obstruction, surgical intervention is warranted. However, in most cases this complication simply warrants clinical monitoring for evidence of obstruction or passage of the PEG bumper; in most reported cases, endoscopic retrieval was not attempted or feasible, and resolved via spontaneous bumper passage through the gastrointestinal tract.



[3691] **Figure 1.** (A) PEG tube with internal bumper no longer attached. (B) CT scan of abdomen showing PEG tube bumper in the jejunum (orange arrow).

S3692

What the Heil? *H. heilmanni* Causing Peptic Ulcer Disease and Severe GI Bleeding

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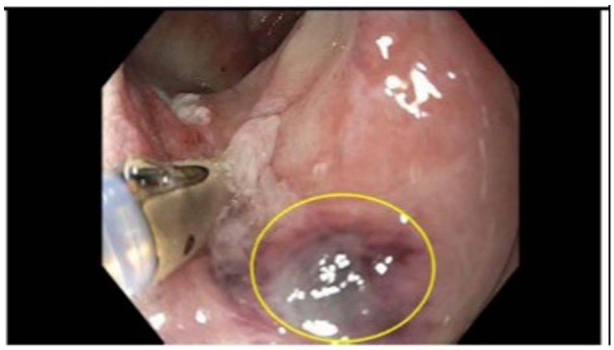
Introduction: Helicobacter pylori (H. pylori) has a well-known association with peptic ulcer disease (PUD) and gastritis. However, other helicobacter species cause similar diseases. We present a case of a patient with H. heilmanni infection causing PUD and significant gastrointestinal (GI) bleeding.
Case Description/Methods: A 63-year-old man with CAD s/p stent on aspirin and recent root canal procedure who was taking ibuprofen for several weeks presented with a one day history of mixed melena and hematochezia. He had no prior history of PUD or GI bleeding. EGD revealed two Forrest class III gastric ulcers and three duodenal ulcers including a 7 mm Forrest class IIc ulcer. Gastric biopsies were taken. He required 3 units of packed red blood cells (PRBCs), and was discharged on pantoprazole BID with a Hgb of 8 g/dl and biopsy results pending. The following day, he presented with similar symptoms, requiring ICU admission for Hgb 5.4 g/dl and blood pressure 77/52 mm Hg. He required 5 units PRBCs without pressor support. Repeat EGD revealed a 12 mm Forest class IIb duodenal ulcer (image 1) which was injected with epinephrine, and a single hemoclip was placed with hemostatic control. Prior EGD biopsy results showed chronic gastritis and helicobacter-like species found to be Helicobacter heilmanni by genotyping, and negative for concurrent H. pylori. The patient was treated with triple therapy with pantoprazole, amoxicillin and clarithromycin. Repeat EGD 2 months after treatment confirmed eradication of H. heilmanni and healing of all ulcers.
Discussion: H. heilmanni was first described as an organism causing gastritis in humans in 1987 under its former name Gastrospirillum hominis. H. heilmanni is found in less than 1% of patients undergoing EGD for upper GI symptoms compared to H. pylori which is found in as many as 60% of patients with similar symptoms. Complications of H. heilmanni infection in patients include: 82% developing gastritis, 16% PUD, 2% gastric cancer, and, in our patient's case, severe GI bleeding. Concurrent infection with H. pylori and H. heilmanni infection is uncommon and identification of H. heilmanni via H. pylori via stool antigen or rapid urease testing has unclear efficacy. Our case highlights the need for H. heilmanni to be recognized as a potential cause of PUD and further testing might need to be considered when H. pylori testing is negative. Ultimately, definitive diagnosis is done via genetic PCR amplification, and treatment is possible using the same antibiotic regimen as H. pylori.



[3692] **Figure 1.** Duodenal ulcer with adherent clot (Forest class IIb).

S3693

When Should I Follow Up? A Case-Based Discussion of Endoscopic Surveillance in Diffuse Gastric Polyposis

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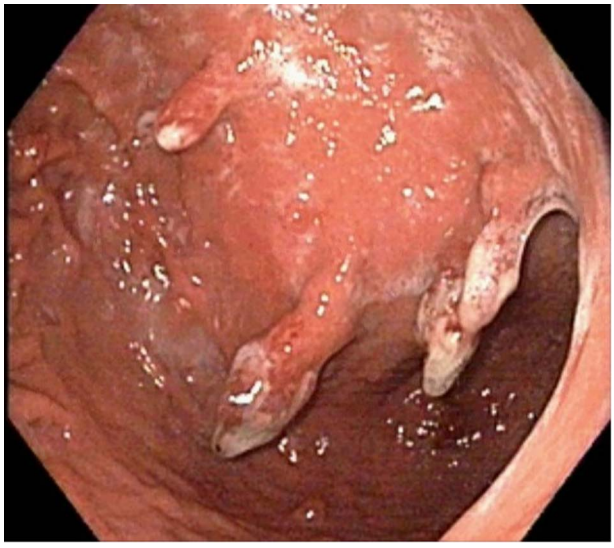
Introduction: Diffuse gastric polyposis is a rarely seen pathology without well defined surveillance guidelines. One study has shown that 2.1% of patients with gastric polyposis were later found to have malignancy.(1) This raises the question: how often should we perform surveillance endoscopy in such a rare but serious disease?
Case Description/Methods: A 54-year-old male with past medical history of GERD was referred from primary care clinic for evaluation of chronic epigastric abdominal pain for one year. Patient's vitals on examination were stable and physical examination unremarkable. Upper endoscopy performed showed numerous (>50) large, pedunculated polyps with superficial ulceration (ranging in size from 3 mm to 2 cm) noted throughout the stomach. Multiple biopsies showed gastric hyperplastic polyps, negative for metaplasia or dysplasia. Patient was asymptomatic on PPI and was offered prophylactic gastrectomy, however, patient refused and chose to follow-up with surveillance endoscopy. Endoscopy was initially repeated monthly, followed by every 3-months, followed by every 6-months with unchanged findings showing numerous (>50) biopsy proven gastric hyperplastic polyps. The patient has been under our care for nine years and is currently being followed up with yearly surveillance endoscopy while continuing to remain asymptomatic (Figure 1).
Discussion: Guidelines do not exist to guide our management of this patient. We began with frequent endoscopies with biopsy and gradually decreased the frequency over the last nine years with good results. We chose to present this case because we would like to raise awareness amongst gastroenterologists about the lack of guidelines and to use this case as an example for future cases. We are advocating for physicians or larger healthcare systems to create a database to monitor these patients or create a retrospective study to determine the timeline for potential malignancy of these gastric polyps. With this data an endoscopic surveillance guideline can be created so that we can prevent the disaster of discovering gastric malignancy late in its course.



[3693] **Figure 1.** Upper endoscopy revealing multiple gastric hyperplastic polyps.

REFERENCE

1. Daibo M, Itabashi M, Hirota T. Malignant transformation of gastric hyperplastic polyps. Am J Gastroenterol. 1987; 82:1016–25.

S3694

Gastric Anisakiasis Masquerading as Gastroesophageal Reflux Disease

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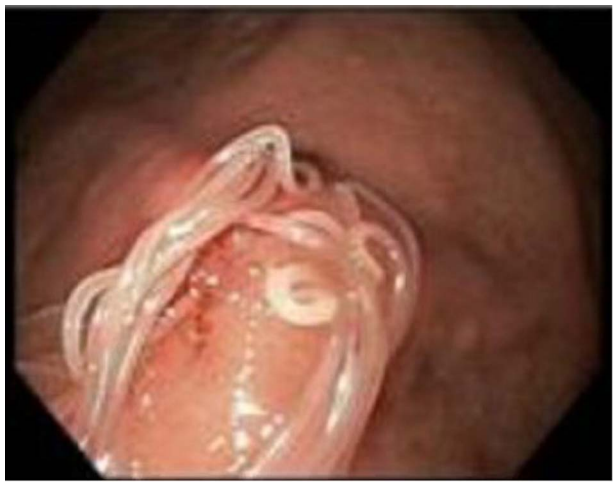
Introduction: Anisakiasis is a rare parasitic disease caused by the accidental ingestion of *Anisakis* larvae from raw or undercooked seafood. Symptoms of gastric anisakiasis are non-specific and can mimic gastroesophageal reflux disease (GERD). We report a patient who presented with GERD-like symptoms and was found by esophagogastroduodenoscopy (EGD) to have gastric anisakiasis.
Case Description/Methods: A 34-year-old man with past medical history of chronic GERD presented with burning throat pain, nausea, and a dry cough concerning for recurrence of his GERD symptoms. He reported taking pantoprazole 40 mg twice daily without improvement in his symptoms. He had an EGD four months prior with findings concerning for Barrett's esophagus and requested a repeat EGD to reevaluate. EGD showed patches of erythema in the stomach associated with white, filiform worms invading into mucosa of the greater curve of the body and cardia at the gastroesophageal junction. Cold forceps

biopsies were obtained for pathology and microbiology-parasitic identification. The worms were extracted endoscopically using biopsy forceps. At his one month follow up, the patient reported symptom resolution. Biopsies of the stomach revealed chronic, active erosive gastritis, and the filiform worms were reported to be morphologically consistent with *Anisakis* nematode. A follow up EGD was scheduled in two months to ensure clearance of infection (Figure 1).

Discussion: Anisakiasis was first reported in 1876 by Leuckhart. In the 1960s, it became widely recognized in the Netherlands due to popular consumption of lightly salted herring. Today, it is most commonly reported in Japan where raw fish is routinely consumed. Symptoms usually develop within 12 hours of consumption and can include nausea, vomiting, abdominal pain, blood in stool, and fever. This occurs as a result of hypersensitivity to the larva or its secretions and mucosal injury from larval penetration. Diagnosis is achieved by direct visualization of larvae by EGD. Gastric mucosal edema surrounding the zone of larval penetration is often found. Endoscopic removal of larvae typically results in prompt resolution of symptoms. Some mild cases are treated supportively with analgesia until the larvae are destroyed or excreted. There are also reports of anisakiasis treated with albendazole however data is limited. Clinicians should consider anisakiasis in the differential diagnosis of patients presenting with gastrointestinal symptoms and recent consumption of raw or undercooked fish.



[3694] **Figure 1.** Esophagogastroduodenoscopy revealed white, filiform worms invading into mucosa of the greater curve of the body and cardia at the gastroesophageal junction.

S3695

Collagenous Gastritis: A Rare Cause of Severe Iron Deficiency Anemia in a Basic Military Trainee

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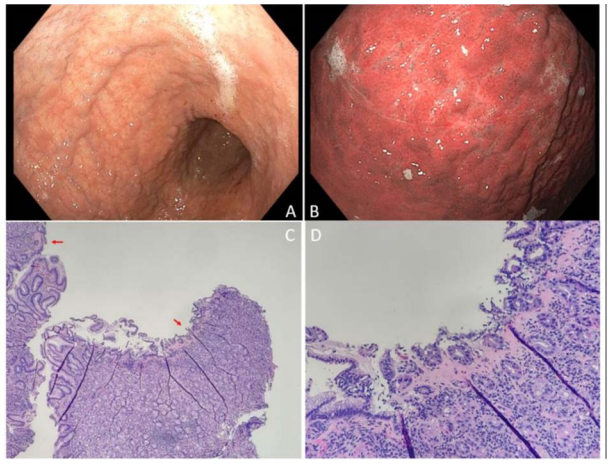
Introduction: Collagenous gastritis is a rare inflammatory disease characterized by deposition of a thick subepithelial band of collagen and associated inflammatory infiltrate. This disorder has a reported prevalence of 13 per 100,000 esophagogastroduodenoscopies (EGDs) with a female predominance. Two distinct clinical phenotypes have been described: adult-onset characterized by diffuse gastrointestinal involvement and diarrhea, and pediatric-onset manifesting with abdominal pain and anemia. We present an interesting case of pediatric-phenotype collagenous gastritis to highlight this poorly-recognized disorder.

Case Description/Methods: A 19-year-old male basic military trainee was referred for evaluation of incidentally discovered iron deficiency anemia. He denied any symptoms, overt blood loss, or NSAIDs. Physical exam was unremarkable. Labs revealed hemoglobin of 9.3 g/dL, iron saturation 7% and ferritin 15 ng/mL. The patient underwent EGD and colonoscopy for further evaluation. EGD revealed a diffusely nodular appearance of the gastric mucosa with areas with suspected atrophy under narrow-band imaging (Figures 1A, B). Colonoscopy was normal. Biopsies returned with a non-specific chronic gastritis without H. pylori. Abdominal computed tomography and additional work up for autoimmune gastritis, fecal H. pylori antigen, syphilis, and heavy metals toxins were all normal. Decision was made to repeat EGD for additional tissue sampling, including cold snared samples. Repeat gastric biopsies with expert GI pathologist review revealed collagenous gastritis, characterized by subepithelial deposition of a thick (greater than 10 μm) collagen band and associated inflammatory infiltrate (Figures 1C, D). Patient was lost to follow up due to disqualification for military service.

Discussion: Collagenous gastritis is an exceedingly rare heterogeneous disease process of poorly understood causes and pathogenesis, with autoimmune conditions, medication effects, and infections theorized to be responsible. Numerous treatments have been reported with variable effect, including antisecretory agents, corticosteroids, immunomodulators, and hypoallergenic diets, along with micronutrient supplementation. Due to its rarity, a high level of suspicion is required by gastroenterologists and pathologists based on clinical and endoscopic findings. Our case helps to bring awareness to collagenous gastritis, and emphasizes the potential value for repeat tissue sampling with expert pathologist review.



[3695] **Figure 1.** A: Diffusely nodular appearance of the gastric mucosa with areas. B: Narrow-band imaging reveals areas of suspected atrophy. C: Multiple fragments of gastric mucosa with a prominent lymphoplasmacytic infiltrate within the lamina propria and occasional foci of subepithelial collagen deposition (red arrows). [Hematoxylin & Eosin, 50× magnification]. D: On higher

magnification a focus of subepithelial collagen deposition may be seen associated with epithelial injury indicated by loss of foveolar mucin and detachment of the surface epithelium. [Hematoxylin & Eosin, 200× magnification].

S3696

Gastric Amyloidosis Presenting as Upper Gastrointestinal Bleeding

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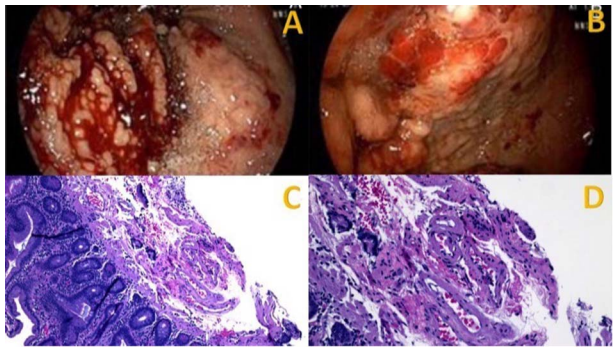
Introduction: See case report
Case Description/Methods: A 74-year-old male with coronary artery disease presented to the hospital with chest pain and shortness of breath and later was discovered to have melanotic stools and anemia with a hemoglobin of 8.9 g/dL. An upper endoscopy demonstrated congested, mosaic patterned gastric mucosa with adherent clots, easy friability, and oozing (Figures 1A and 1B). This was initially thought to be secondary to portal hypertensive gastropathy, however laboratory work-up and imaging did not reveal any evidence of cirrhosis or portal hypertension. With recurrent bleeding, repeat endoscopy was performed with similar findings. Duodenal biopsies were then performed which revealed apple-green birefringence after congo red staining consistent with the diagnosis of amyloidosis later specified as alpha light chain (AL) amyloidosis by liquid chromatography (Figures 1C and 1D). Oncology was consulted and performed a bone marrow biopsy which was notable for a plasma cell dyscrasia with focal amyloid deposition and 4-5% plasma cells by CD138 immunostaining. The patient was started on Daratumumab, Cyclophosphamide, and Bortezomib however the patient only tolerated a short course before being readmitted for a recurrent upper gastrointestinal bleed and is being evaluated for an elective partial gastrectomy given his recurrence of symptoms. The association of AL amyloidosis and a plasma cell dyscrasia is well known as studies show that around 80% of patients with AL amyloidosis have an underlying plasma cell line dysfunction. [1] What was unique to this case was the initial presentation of AL amyloidosis and subsequent underlying plasma cell dyscrasia as isolated recurrent gastric hemorrhage which is a rare disease process.[2] The diagnosis can be easily overlooked in patients who have not been diagnosed previously with amyloidosis or have an underlying plasma cell dyscrasia. Amyloidosis should also be considered in patients with unexplained persistent bleeding after cold biopsy or cold snare excision. This case serves as a reminder to keep a wide differential including systemic pathologies when initial workup is unrevealing.
Discussion: See case report.



[3696] **Figure 1.** (A) Bleeding gastric mucosa seen on upper endoscopy. (B) Mosaic pattern of gastric mucosa seen on upper endoscopy. (C) Longitudinal section of duodenal mucosa seen on hematoxylin and eosin stain at 10× view. (D) Longitudinal section of duodenal mucosa seen on hematoxylin and eosin stain at 20× view.

S3697

A Case of a Pyloric Gland Adenoma Presenting as an Intramural Mass

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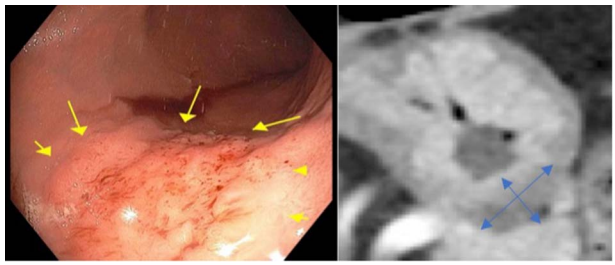
Introduction: Pyloric gland adenomas (PGA) are a subset of gastric adenomas with malignant potential. They are often characterized on endoscopy as an intraluminal polypoid, dome-shaped, ulcerating, or fungating mass. Due to their risk of carcinogenesis, it is important to recognize and resect lesions that are suspicious for PGAs for further pathological examination to confirm the diagnosis. Although PGAs are characterized as mucosal or submucosal lesions, this case reviews an atypical presentation of a PGA that presents intramurally in the stomach without the common features typically visualized on direct endoscopy.
Case Description/Methods: A 65-year-old female with history of GERD presented with a one-year history of globus sensation described as irritation in her throat without associated weight loss, dysphagia, or odynophagia. Symptoms were refractory to proton pump inhibitors and H2 blockers. Upon initial endoscopic evaluation, a friable 3-centimeter region of localized nodular mucosa without ulceration was found on the greater curvature of the stomach and biopsied (Figure 1A). Initial pathology report noted epithelial proliferation within gastric mucosa, but malignancy was not excluded. Follow-up CT scan showed a 1.8 × 1.3 × 1.1 centimeter intramural lesion within the greater curvature at the level of the gastric fundus (Figure 1B). Upon repeat endoscopy, re-biopsy of the lesion with snare resection for more robust tissue sampling confirmed an intramucosal adenocarcinoma arising in a pyloric gland adenoma. The patient subsequently underwent a subtotal gastrectomy with Roux-en-Y gastrojejunostomy and has begun receiving adjuvant chemotherapy with folinic acid, fluorouracil and oxaliplatin (FOLFOX).
Discussion: This case demonstrates the variability in presentation of PGAs while also highlighting the carcinogenic potential to evolve into an adenocarcinoma. Unlike typical PGAs that are mucosal or submucosal, this case describes an intramural PGA, which to our knowledge, has yet to be reported in the literature. Although their incidence is rare, PGAs should be considered on the differential for atypical lesions visualized on endoscopy due to their malignant potential.



[3697] **Figure 1.** Friable nodular ulceration on greater curvature of stomach (A), Intramural lesion within greater curvature at level of gastric fundus on CT scan (B).

S3698

Don't Forget the Physical Exam: A Case of Gastric Cancer Diagnosed With the Help of a Sister Mary Joseph Nodule

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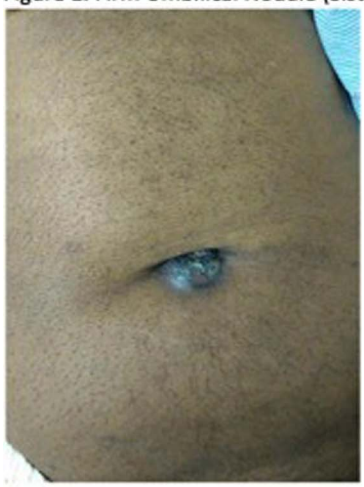
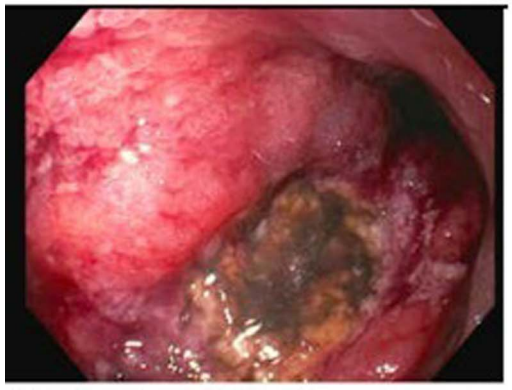
UTMB, Galveston, TX.

Introduction: This case describes a patient presenting with abdominal pain, weight loss, and a Sister Mary Joseph Nodule who was diagnosed with gastric cancer. Our case highlights the need for a physical exam and emphasizes the importance of this lost skill.
Case Description/Methods: Our patient is a 62-year-old male with a medical history of hypertension, diabetes, that presented to gastroenterology clinic citing unintentional weight loss. The patient reported early satiety, abdominal pain, constipation, and a 37-lb unintentional weight loss in the past 6 months. The patient also noted pain and a burning sensation at the umbilicus. Physical exam revealed a distended abdomen, with generalized abdominal tenderness and a firm umbilical nodule with dark discoloration, noted to be a 'Sister Mary Joseph' nodule (Figure 1). Laboratory investigations revealed anemia. Tumor markers were notable for a normal AFP and CEA, but elevated CA 19-9 of 346. Given concern for malignancy, the patient underwent CT abdomen that revealed gastric outlet thickening with mild irregularity of gastric antrum and multiple surrounding lymph nodes. He underwent endoscopic evaluation that revealed a large fungating and ulcerated circumferential mass in the gastric antrum, as well as a large infiltrative mass in the duodenal bulb (Figure 2-3). Biopsies of the antral mass revealed differentiated adenocarcinoma. The patient was evaluated by general surgery and oncology and is currently undergoing cycle 3 out of 5 of neoadjuvant chemotherapy.
Discussion: Gastric cancer (GAC) is the second most common cancer world-wide, and third most common gastrointestinal malignancy in the US after colorectal and pancreatic cancer. It poses substantial mortality despite advances in surgery and use of adjuvant therapy. GAC is highly treatable in its early stages; however advanced stages have a medical survival of just 9-10 months. The importance of early detection is key to prolong survival. Recent reports have mourned the lost art of the physical exam with the increased availability of laboratory testing and imaging studies. However, comprehensive history taking, and physical examination serve as the foundation in arriving at the correct diagnosis. In our patient's case, both his suggestive history and the pathognomonic nodule on his exam expedited his diagnosis and management. The nodule has been named after Sister Mary Joseph who was a surgical assistant and noted the association between umbilical nodules and intrabdominal malignancy in the 1940s.

Figure 1. Firm Umbilical Nodule (Sister Mary Joseph Nodule)



Figures 2-3.
Gastric antral mass



Duodenal Bulb Mass (arrows)

[3698] **Figure 1.** Images of Sister Mary Joseph Nodule and endoscopy.

S3699

Reflux Symptoms Revealed Breast Cancer Metastasis to the Stomach

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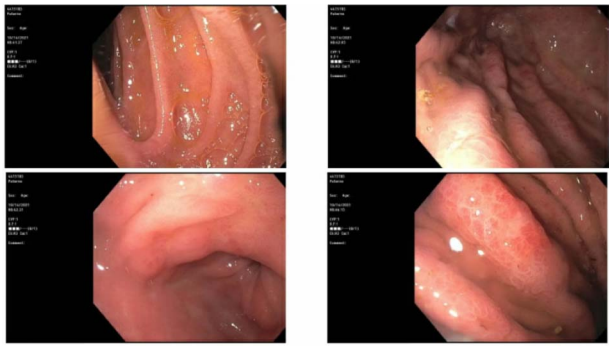
Introduction: Metastasis to the stomach is very rare in the case of breast cancer (BC). The incidence rate of gastric metastasis (GM) is estimated to be about 0.3%. In general, the most common areas of BC metastasis are bone, liver, and lung. Retrospective studies have found that the majority of GM is derived from lobular breast cancer compared with other breast cancer subtypes and higher percentages are hormone positive. Previous studies suggest varying intervals between diagnosis of primary breast cancer and the detection of GM anywhere from 5 to 20 years. Unfortunately, published data is limited to single case reports or small series.
Case Description/Methods: Patient is a 73 year old female past medical history of breast cancer initially diagnosed 13 years prior with stage IIB invasive right breast lobular carcinoma ER/PR positive, HER2 negative. Patient received right mastectomy and completed chemotherapy and radiation without evidence of metastasis. Subsequent imaging including PET scans revealed no evidence of disease. 10 years later biopsy of left breast showed moderately differentiated invasive carcinoma ER/PR positive, HER2 negative. Patient underwent mastectomy with node sampling that was negative for involvement. Patient was continued on chemotherapy. PET scan and brain MRI done 3 months prior to EGD showed no evidence of disease. Patient presented to our outpatient GI clinic with complaints of dysphagia. She had an episode of suspected food impaction relieved by vomiting. Patient was experiencing epigastric discomfort including occasional globus sensation for several months prior to the incident. EGD showed erythematous gastric mucosa with nodularity no obvious mass was found. Biopsies revealed ER/PR positive, HER2 negative, metastatic adenocarcinoma in gastric body and antrum. Patient decided not to pursue aggressive measures in regards to metastasis. She was started on PPI twice daily which helped alleviate epigastric symptoms. Repeat EGD showed improvement of gastritis (Figure 1).
Discussion: Reports on GM from breast cancer are limited do to the rarity. In reviewing previous studies there is a similar theme. GM presents without other signs of metastasis. Our patient had multiple negative scans falsely suggesting no metastasis. Although infrequent, physicians should still consider the possibility of GM in patients with breast cancer and non specific GERD symptoms. More so in patients with history of lobular carcinoma and hormone positive subtypes.



[3699] **Figure 1.** Endoscopic imaging of gastric metastasis.

S3700

Role of Immunotherapy in the Treatment of Recurrent Hereditary Diffuse Gastric Cancer

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Introduction: Gastric cancer is the third leading cause of cancer related deaths worldwide. Majority of cases are sporadic although 10% demonstrate familial clustering, of which 1-3% arise from inherited cancer syndromes. Hereditary diffuse gastric cancer is a rare cancer caused by CDH1 genetic mutation, inherited in an autosomal dominant fashion. Immunotherapy has been shown to increase overall response rates in gastrointestinal cancers especially in those subgroups with DNA mismatch repair-deficient or microsatellite-instable tumors. We herein, present a case of recurrent hereditary diffuse gastric cancer with good response to chemoimmunotherapy.
Case Description/Methods: This is a 41-year-old asian female with past medical history of stage IIB signet ring type gastric cancer diagnosed 12 years ago, status post subtotal gastrectomy with a block transverse colectomy followed by concurrent chemoradiation, who presented with disease recurrence after 10 years, when she was treated with neoadjuvant 5-fluorouracil based chemotherapy followed by surgical resection and adjuvant chemotherapy. Her genetic screening showed CDH1 mutation, with high risk for breast and gastric cancers. She was monitored closely with regular breast magnetic resonance imaging (MRI) and esophagogastroduodenoscopy (EGD). During one of her regular endoscopy assessments recently, she was found to have erythema of her gastric mucosa which upon biopsy confirmed recurrence of her poorly differentiated adenocarcinoma, diffuse type with signet ring features. She underwent treatment with oxaliplatin based chemotherapy combined with Nivolumab for six cycles. She responded well to chemoimmunotherapy as evidenced by positron emission tomography and computed tomography (PET CT) scan and esophagogastroduodenoscopy (EGD). She is awaiting surgical resection followed by adjuvant therapy with chemotherapy either alone or in combination with immunotherapy.
Discussion: Gastrectomy and chemotherapy are the mainstay treatments for hereditary diffuse gastric cancer. Nivolumab has been shown to be effective in heavily pretreated gastric cancers. The combination therapy of nivolumab plus chemotherapy achieved a clinically meaningful overall survival benefit in the first line setting in all advanced gastric adenocarcinoma. Clinical trials and research encompassing antibody treatments, such as targeted anti-PD1 antibodies, are ongoing and could offer additional treatment options in patients with advanced gastric cancer.

S3701

Necrotic Ulcer From Diffuse Large B-Cell Lymphoma

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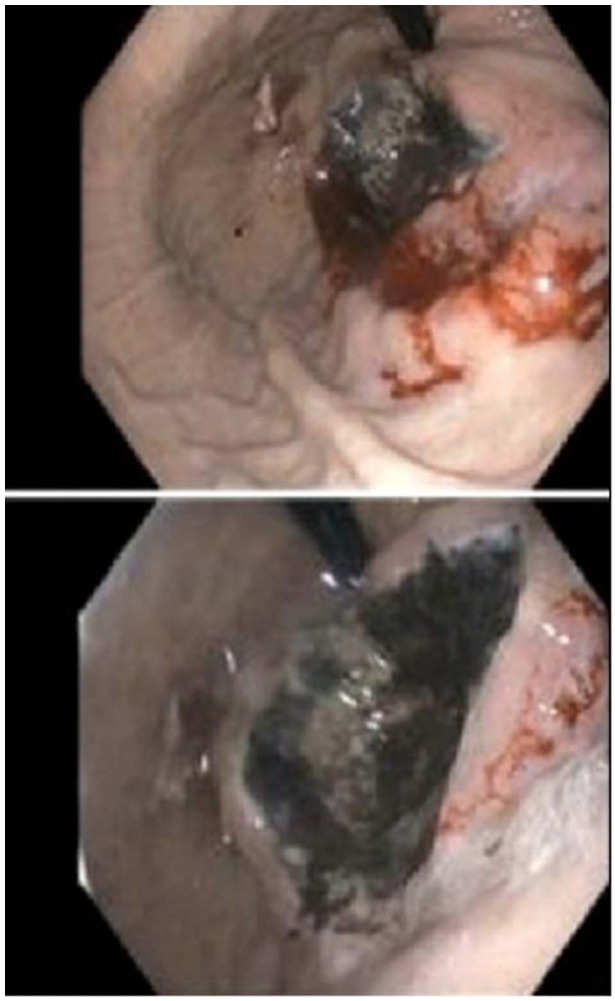
Introduction: Diffuse B cell lymphoma is a non-Hodgkin's lymphoma that mainly occurs within the lymph nodes. However, about 40% of the time it occurs in extranodal sites. The most common sites are within the gastrointestinal tract, especially within the stomach and ileocecal regions. We present a case of a patient with diffuse large B Cell lymphoma within the cardia of the stomach.
Case Description/Methods: A 69-year-old male with a past medical history of diffuse large B cell lymphoma was admitted for active melena. Further workup revealed a hemoglobin of 5.6 g/dL with a baseline around 10 g/dL, as well as a BUN of 67 mg/dL. Aside from mild tachycardia the patient was otherwise hemodynamically stable. He had received K Centra and one unit of blood in the emergency room. A CT angiogram of the abdomen showed recurrence of diffuse large B cell lymphoma with multiple lymph node stations in the pancreas, left kidney, and associated vasculature. Ultimately, the patient underwent an endoscopy. A necrotic ulcer measuring 5 cm in the cardia of the stomach with pigmented material on the surface indicating recent bleeding. Multiple biopsies were taken of each of these ulcers to rule out underlying malignancy. The pathology report revealed that the chronic ulcer in the cardia of the stomach was diffuse large B cell lymphoma and no evidence of Helicobacter pylori. The patient was treated with pantoprazole and Carafate. Their hemoglobin remained stable after 3 units of packed red blood cells and the patient was discharged. However, it was advised for them to follow up outpatient with hematology and oncology however he has since elected for hospice (Figure 1).
Discussion: Diffuse large B cell lymphoma is the most common type of non-Hodgkin's lymphoma. The stomach is the most common extranodal site involved in non-Hodgkin's lymphoma representing up to 65% of all GI lymphomas. In these patients, symptoms may include dyspepsia, nausea, and vomiting. Primary gastric lymphoma is the most common extranodal lymphoma but only accounts for 2-8% of all stomach cancer. Thus, our case of diffuse large B lymphoma in the cardia of the stomach is a rare entity. Most patients are treated with conservative management like chemotherapy or immunotherapy. One retrospective study showed the use of R-CHOP to have a high remission rate. Surgical intervention is usually reserved for lesions that cause perforation, obstruction, or intractable bleeding. Our case would have required surgical intervention had the bleeding continued.



[3701] **Figure 1.** 5 cm necrotic ulcer found on retroflexion in gastric cardia.

S3702

***Helicobacter pylori* Negative Mucosa Associated Lymphoid Tissue**

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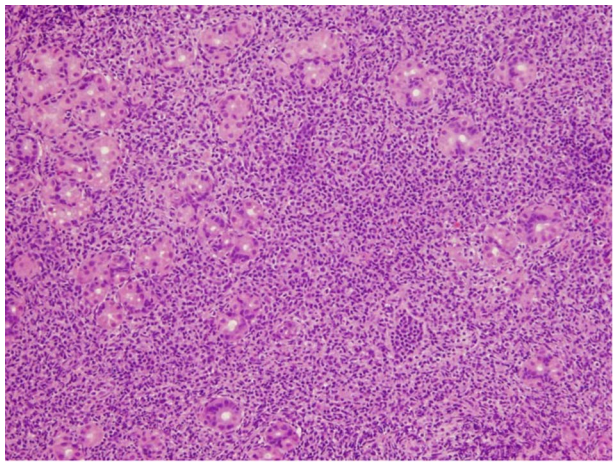
Introduction: Gastric mucosa-associated lymphoid tissue (MALT) is a rare primary gastric lymphoma, which commonly occurs in association with *Helicobacter Pylori*. *H. pylori-negative* MALT is reported in around 5% of the cases, the etiopathogenesis, and management of which is still not thoroughly understood.
Case Description/Methods: A middle-aged African American male with a history of peptic ulcer disease, alcohol, and tobacco abuse, presented to the gastroenterology clinic with dyspepsia. The initial esophagogastroduodenoscopy (EGD) was negative for acute findings and the gastric biopsy showed incomplete type intestinal metaplasia and was negative for H. pylori. The patient was treated with a proton pump inhibitor and a repeat endoscopy with gastric mapping was planned. This revealed localized areas with atrophic mucosa and nodularity without clear demarcation. The gastric body showed prominent rugae with edematous friable mucosa. Gastric biopsy was sent for flow cytometry in suspicion of lymphoma, which confirmed the diagnosis of B cell, non-Hodgkins lymphoma (NHL), with the presence of intestinal metaplasia. Cytology revealed a t(11;18) chromosomal translocation. Repeat H. pylori serology, and stool antigen was negative. Positron emission tomography with computed tomography (PET/CT) revealed local involvement of gastric mucosa and peri-gastric lymph node involvement. The patient was treated with involved-field radiation without eradication therapy resulting in complete endoscopic and histologic remission (Figure 1).
Discussion: The indolent nature of this tumor results in delayed diagnosis and treatment. Additionally, some studies suggest false negative tests for *H. pylori* may play a role in the diagnosis of *H. pylori* negative gastric MALT. The reliability of the serological test has been studied, showing disagreement between initial and repeat testing especially in non-Hispanic and black individuals. The treatment and management of *H. pylori* negative gastric MALT remain controversial, as some studies show benefits and complete remission with antibiotic-based therapy. Additionally, some studies show that cytological identification of t(11;18) can help identify patients expected to have a low therapeutic response to *H. pylori* antibiotic eradication therapy. This patient had many risk factors for developing gastric cancer, however Gastric MALT rarely occurs in the absence of *H. pylori*. The patient's response to involved-field radiation without eradication therapy also makes this case unique.



[3702] **Figure 1.** There is an atypical lymphoid infiltrate compatible with stomach involvement by MALT lymphoma. Oxyntic glands are surrounded by lymphocytes.

S3703

A Case of Hereditary Diffuse Gastric Cancer

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Introduction: Hereditary diffuse gastric cancer (HDGC) is an autosomal dominant disorder associated with pathogenic germline variants in the cadherin 1 (CDH1) or alpha-1 catenin (CTNNA1) genes. Carriers have an 80% risk of developing stomach cancer, at an average age of 38, and 60% lifetime risk of developing lobular breast cancer. This is a case of a middle-aged female diagnosed with CDH1+ HDGC.
Case Description/Methods: An asymptomatic 50-year-old Bangladeshi female presented for surveillance colonoscopy given a strong family history of colon cancer in three siblings, mother and uncle and stomach cancer in her mother. She had a normal upper endoscopy three years earlier for indication of heartburn. She proceeded with colonoscopy which showed two tubular adenomas measuring 7-8 mm. Due to concern of a hereditary syndrome, she was referred to a genetics counselor and an Ambry Colonext Panel with RNA Analysis was conducted. Results were positive for pathogenic heterozygous c.1137G >A mutation in the CDH1 gene raising concern for HDGC. At the time, she opted for surveillance instead of prophylactic gastrectomy. A follow up upper endoscopy showed a few, minute pale regions on close inspection, but no masses, ulcerations or other features suggestive of malignancy. Per Cambridge protocol, 34 biopsies were collected and one gastric body biopsy returned positive for gastric adenocarcinoma with signet ring cell features and weak E-Cadherin expression. Cross sectional imaging was negative for metastatic disease. She met with oncology and surgery teams and underwent laparotomy with total gastrectomy and Roux-en-Y esophagojejunostomy. Gastrectomy biopsy confirmed a single microscopic focus of diffuse adenocarcinoma.
Discussion: Diagnosis of HDGC-associated signet ring cancers is especially difficult because they are only visible on direct mucosal evaluation late in the disease process. Genetic testing is recommended for those meeting family or individual criteria. Prophylactic gastrectomy, as early as age 20, is recommended for pathogenic mutation carriers with an appropriate pedigree. Those denying surgery can be offered annual endoscopy with the understanding that frequent surveillance has not been proven to be effective in early gastric cancer detection in HDGC. During endoscopy, any visible lesion should be biopsied and a minimum of 30 biopsies are recommended to include all five anatomic gastric zones. *H. pylori* should be screened for and treated. Referral to a breast surgeon is also recommended.

S3704

A Case of Back Pain as the Presenting Symptom of Metastatic Gastric Adenocarcinoma in a Young Male

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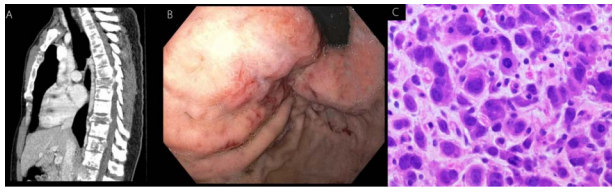
Introduction: Gastric adenocarcinoma typically occurs in the fifth to seventh decades of life, with only 5% of patients diagnosed before age forty. Most common presenting symptoms include weight loss, abdominal pain, and bleeding. There are limited publications describing gastric cancer (GC) in younger patient populations, especially those with atypical presentations.
Case Description/Methods: A 29-year-old male with no significant medical history presented to his general practitioner with back pain for 2 months. Outpatient magnetic resonance imaging (MRI) of his lumbar spine was concerning for metastatic cancer, so he was sent to the emergency department for evaluation. Lab testing showed normocytic anemia of 10.3 g/dL, elevated alkaline phosphatase level of 744, and uric acid level of 10.7. Complete MRI views of his spine demonstrated extensive osseous metastatic disease in his cervical, thoracic, lumbar, and sacral regions (Figure 1A). The patient underwent computed tomography-guided biopsy of the metastatic lesions in his right sacrum. Immunohistochemical staining was suggestive of upper gastrointestinal or pancreaticobiliary malignancy. Therefore, he underwent endoscopic evaluation. Upper endoscopy revealed congestive gastropathy in the cardia and fundus, suspicious for infiltrative pathology, which was biopsied (Figure 1B). Endoscopic ultrasound revealed subtle wall thickening at the gastroesophageal junction and few small lymph nodes in the peri-pancreatic and celiac region. Pathology confirmed poorly-differentiated gastric adenocarcinoma (Figure 1C). H Pylori staining was negative. The patient has since been started on palliative chemotherapy and radiation.
Discussion: We report here a unique presentation of GC in a young patient. To our knowledge this is the only case described thus far that reviews a young male presenting with chronic back pain as the first symptom of metastatic GC. Apart from typically being found in older populations, GC usually presents with symptoms of weight loss or gastrointestinal complaints. This patient's presenting symptom was back pain from his bony metastases. As GC remains a leading cause of death from cancer worldwide, this case demonstrates that it is an important consideration in patients presenting with signs and symptoms concerning for malignancy of unclear origin, including patients of a younger demographic. Additionally, chronic back pain should be thoroughly investigated including in younger individuals to avoid missing clinically significant conditions.



[3704] **Figure 1.** [A] Magnetic resonance imaging of spine showing extensive osseous metastatic disease. [B] Upper endoscopy with congestive gastropathy. [C] Pathology demonstrating poorly-differentiated gastric adenocarcinoma.

S3705

A Case of Multifocal Burkitt Lymphoma in an Immunocompromised Patient

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Introduction: Primary non-Hodgkin's lymphoma (NHL) of the GI tract accounts for less than 0.9% of all gastrointestinal tumors. 30-40% of all extranodal manifestations occur in the stomach during secondary involvement, however this is less common in non-endemic Burkitt lymphoma (BL). Primary BL of the GI tract is very rare, including involvement of the stomach, duodenum and pancreas, accounting for less than 1% of all NHL tumor growth, even in secondary disease. BL is associated with HIV and EBV, however in those with HIV/AIDS, the CD4 count is typically greater than 200 without presence of concomitant opportunistic infections.
Case Description/Methods: A 52 YO M PMH HIV, AIDS, HCV, IV drug abuse presented with acute L sided back and abdominal pain. On arrival he was hypotensive, cachectic with temporal wasting and severe, diffuse abdominal tenderness and tenderness of his L paraspinal muscles and lumbar spine. Labs were significant for leukocytosis, normocytic anemia, AKI, elevated ALP, LDH and ESR, and UDS positive for cocaine and opiates. CT A/P showed a fracture of the L 9th rib and asymmetry of the gastric wall. MRI revealed multifocal osteomyelitis with an epidural abscess spanning T7-T9. He underwent I & D and pathology of the epidural abscess and ribs revealed Burkitt Lymphoma. ERCP/EUS findings included esophageal candidiasis, multiple masses and nodules within the stomach, duodenum, and pancreas with strictures throughout the CBD and lower third of the main bile duct. A biliary sphincterotomy was performed and biopsies of all specimens were positive for Burkitt Lymphoma. His hospitalization was complicated by a subdural hemorrhage, initially thought to be CNS involvement however MRI brain and CSF flow cytometry did not reveal brain metastasis. A bone scan showed increased uptake in the distal shaft of the L humerus and femur, and a CT chest revealed a 4 mm nodule, all concerning for metastasis. He also developed SBO for which he was treated with R-CODOX/R-IVAC chemotherapy to reduce tumor burden. G-CSF and intrathecal methotrexate were administered. His SBO resolved and he was discharged home to follow up with Oncology for further management.
Discussion: We present an HIV patient with low CD4 counts who was diagnosed with BL of the bone, lymph nodes, duodenum, stomach, pancreas and small intestine. The primary site of BL is ultimately unknown due to his complex presentation, however primary and/or secondary involvement of the duodenum, pancreas, stomach and intestine is very rare in non-endemic BL.

S3706

A Blip in the Fundus! A Case of Symptomatic Gastric Diverticulum

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Introduction: Gastric diverticulum are pouches that can form within the stomach. In contrast to colonic diverticula, gastric diverticula are rare and are usually discovered incidentally during EGD. Estimates of prevalence are in the region of 0.04% to 0.01%. When they do occur they are usually found in the fundus. Most diverticulum are asymptomatic however when symptoms are present they are highly variable. The most common symptoms include epigastric pain, nausea, and early satiety. As with colonic diverticula the most common complications are ulceration, perforation, and hemorrhage. Management depends on the severity of the presenting complaints and the presence of complications. Patients who are symptomatic should be initiated on a proton pump inhibitor, H2 Blocker, or antacid therapy. This can occasionally relieve symptoms. When gastric diverticula are large (>4 cm) they may result in symptoms not responsive to acid suppression therapy.
Case Description/Methods: 87 year old female with history of HTN presented with intermittent hiccups, solid food dysphagia, and epigastric pain. She said the hiccups were about once a month and associated with dysphagia during the episodes which would last a day or two. She had an dull, aching epigastric pain associated with solid food intake. EGD showed an unusually 4 × 6 cm large gastric fundal diverticulum with food and seeds which was irrigated, but otherwise normal. Esophageal manometry and barium esophagram were normal. She was managed conservatively with counselling, reassurance and Pantoprazole as needed. Her symptoms completely resolved and she has not required any further interventions to date (Figure 1).
Discussion: While rare, gastric diverticula can be a significant cause of symptoms and their complications can result in morbidity and mortality. Given that most Gastric Diverticula occur in the fundus, careful examination of the fundus with adequate insufflation is essential. The correct identification and evaluation of their size is essential to guide therapy and monitor for complications.

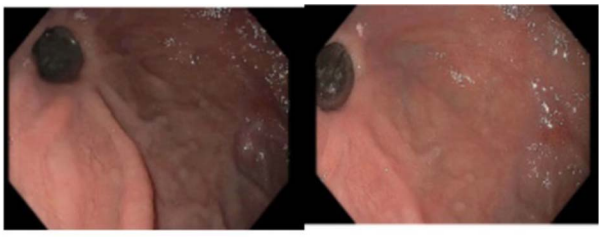

Figure 1 and 2 Large Gastric diverticulum in fundus, about 4x6cm.

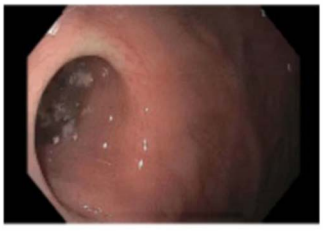

Figure 3 Up close image of gastric diverticulum

[3706] **Figure 1.** Endoscopic Views Fundus Diverticulum.

S3707

A Cautionary Side of the Widely Prescribed: A Case of PPI-Induced AIN

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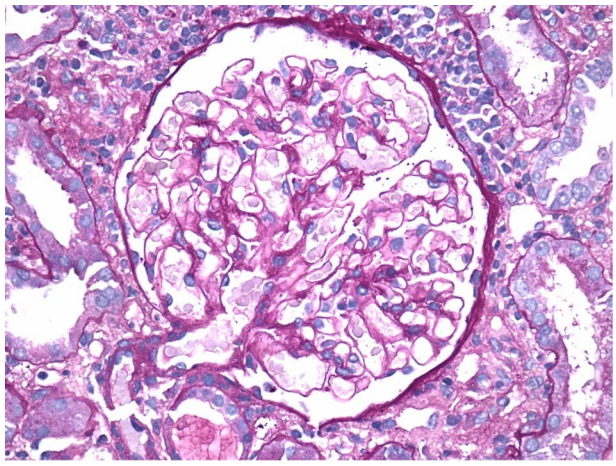
Introduction: Proton pump inhibitors (PPIs) are widely prescribed for the treatment of gastric acid-related disorders. While generally well-tolerated, PPIs are not without side effects, including acute kidney injury. Here we highlight a rare case of biopsy proven PPI-induced acute interstitial nephritis (AIN).
Case Description/Methods: A 54-year-old male with history of rheumatoid arthritis presented with one week history of fever, fatigue, arthralgias, and weight loss. One month prior he was admitted with upper GI bleeding due to NSAID induced peptic ulcer disease and promptly stopped NSAIDs with strict adherence to PPI therapy. He took no additional medications or supplements. On admission labs were notable for recurrent anemia without melena and new acute kidney injury, creatinine 2.32 mg/dL from baseline of 1. Given recent GI bleed patient underwent repeat EGD which showed a clean based healing antral ulcer. Recurrent anemia was attributed to renal dysfunction, which continued to worsen despite supportive care with peak creatinine 3.8 mg/dL. Urine studies were unrevealing without evidence of obstruction

on imaging, but incidentally noted narrowing of the celiac artery was concerning for vasculitis related nephropathy given history of autoimmune disease. Confirmatory contrast enhanced imaging however was negative for evidence of vasculitis with negative serologies. Renal biopsy was performed which showed interstitial inflammation and tubulitis consistent with AIN. Ultimate diagnosis of PPI-induced AIN was made as he took no alternative medications which could be implicated. Patient was started on steroids with notable improvement in renal function. He was switched to an H2 receptor blocker to complete treatment of gastric ulcer and discharged on a steroid taper with complete renal recovery (Figure 1).
Discussion: Initially described in 1992, PPI-induced AIN is a well-recognized albeit rare complication. It is thought to arise due to a hypersensitivity reaction, which may explain the classic presenting triad of fever, rash, and eosinophilia. However, studies have shown that this clinical triad is only present in 10% of cases thereby highlighting the difficulties of diagnosing AIN, which may ultimately require renal biopsy for definitive diagnosis. Treatment requires removal of the offending agent as well as initiation of steroids. Even with treatment, 30-70% of patients may develop chronic kidney disease. As such, it is important for clinicians to be cognizant of this potentially life altering complication of PPI.



[3707] **Figure 1.** Kidney biopsy showing inflammatory changes predominantly in the interstitium.

S3708

A Case of Zargar 2B Ulceration Caused by Accidental Garlic Ingestion

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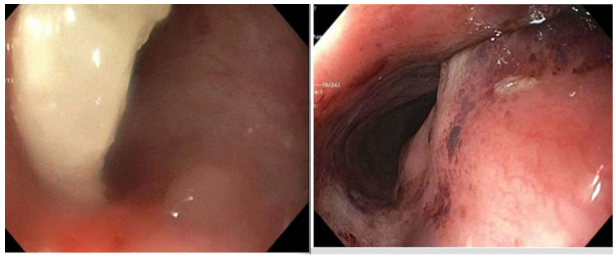
Introduction: Food impaction resulting in caustic injury is a rare phenomenon. In most cases, acidic and alkaline foods will pass through the digestive tract naturally. However, if someone has chewing difficulties, dysphagia, and motility issues, these items can easily be stuck and can cause caustic injury.
Case Description/Methods: A 86 year old female with a medical history of myocardial infarction with 2 stents and right branch bundle block presented with a burning sensation accompanied by pain in her throat after ingestion of garlic. She swallowed a thumbnail size of garlic. She also mentioned that she has had episodes of food impaction before, which had passed without any intervention, and her most recent esophagogastroduodenoscopy was normal. The physical exam was unremarkable and laboratory values were within normal limits. Computed tomography (CT) of her neck showed heterogeneous soft tissue in the proximal esophagus representing impacted food. Urgent EGD showed un-chewed garlic in the proximal esophagus which was then pushed down the esophagus with irrigation. Additionally, Zargar caustic ingestion injury Grade 2b was found in the area underneath where the food bolus was impacted. The rest of the esophagus, stomach, and duodenum were otherwise normal. She was diagnosed with garlic-induced ulceration just distal to the upper esophageal sphincter (UES) and started on a proton pump inhibitor 40 mg twice a day and was on a soft diet. She later had a follow-up EGD in 2 weeks which showed complete healing.
Discussion: Caustic injuries are mostly seen in the esophagus and stomach since the corrosive substance remains in those areas longer. In this case, the acidic content of garlic combined with the mechanical damage was seen with food stasis and played a multi-factorial role in the development of a Zargar grade 2b ulcer. Due to this, our patient was treated with the same degree of precautions as other caustic injury patients to prevent potential long-term complications such as strictures, and carcinoma. As demonstrated in this case, a common food item, such as garlic, caused serious chemical injuries resulting in Zargar grade 2b ulcer due to its acidic contents. Garlic has a PH value of around 5.8. Providers should not overlook food in both contents, whether alkaline or acidic and size as potential culprits of caustic injury and act in a timely manner to prevent adverse effects such as gastrointestinal ulcer/bleed.



[3708] **Figure 1.** Large garlic impaction in the proximal third of the esophagus. Figure 2. Mucosa underneath the impacted garlic showing Zargar grade 2b caustic injury with areas of necrosis.

S3709

A Novel Way to Administer Chemotherapy Medication in a Patient With Esophageal Stenosis Secondary to Metastatic Breast Cancer

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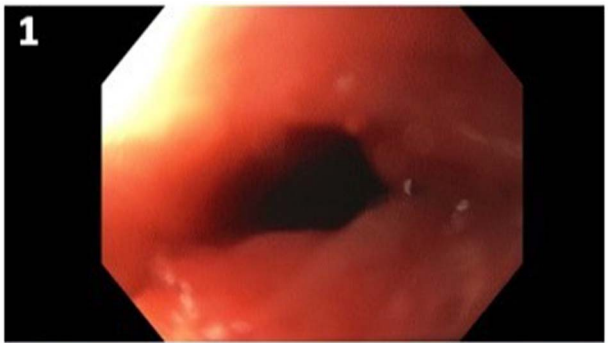
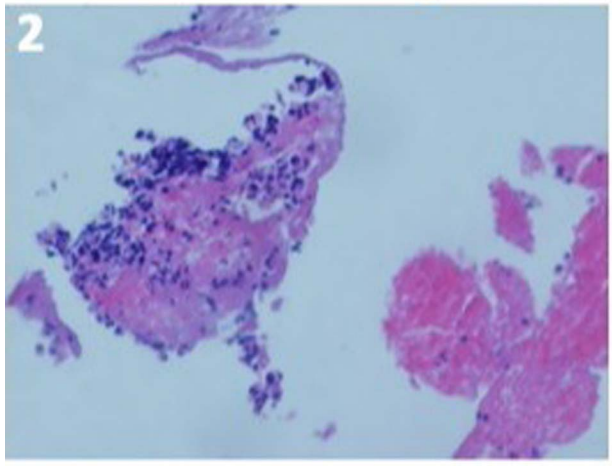
Introduction: Breast cancer can present as cervical lymph node enlargement causing dysphagia due to esophageal compression. We present a case of esophageal stenosis requiring placement of gastrostomy for administration of Palbociclib, which cannot be crushed or split.
Case Description/Methods: 64 year-old female with history of breast cancer treated with lumpectomy and adjuvant radiation therapy, 7 years ago presented with dysphagia and weight loss. Upper endoscopy (Fig. 1) showed extrinsic stenosis at cricopharyngeus 6 mm (diameter) × 2 cm (length). CT scan showed posterior triangle right cervical lymph nodes measuring 16 mm × 16 mm and a 20 mm × 23 mm mass along the right posterior para-tracheal/para-esophageal distribution. Endobronchial ultrasound guided biopsy was obtained. Pathology (Fig. 2 and 3) showed degenerated clusters of (GATA-3 positive) malignant cells suggestive of metastatic breast cancer. PET/CT confirmed irregular soft tissue mass near the right tracheoesophageal groove with intense FDG uptake. There was regional metastatic lymphadenopathy in the

right neck at the level IIA and IIIA regions. Oncology recommended radiation treatment. Due to dysphagia and weight loss, a 20 French PEG tube was placed using an ultraslim upper endoscope. Repeat PET/CT showed partial response and patient was recommended 125 mg Palbociclib tablet daily. The pill cannot be crushed or split and is oval, measuring 16.2 mm × 8.6 mm. Repeat upper endoscopy was performed, gastrostomy was dilated to 30 French, and a 30 French gastrostomy tube was placed. Due to the pill's dimensions, it could not flush down the 30 French tube. Patient was instructed to remove the peg tube daily by suctioning saline from the retention balloon, place Palbociclib directly into the stomach via the gastrostomy, replace gastrostomy tube, and inflate the retention balloon with saline. Nine months later patient had resolution of dysphagia. She was not using her PEG tube and the CT scan showed no residual disease (Figure 1).

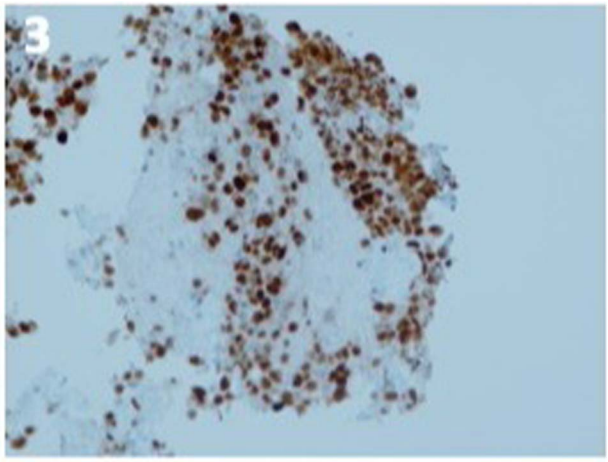
Discussion: We present a case of metastatic cancer causing esophageal stenosis, requiring treatment with a chemotherapy pill that cannot be crushed, split, or flushed down the largest (30 French diameter) available gastrostomy tube. Removing the gastrostomy tube, administering the pill directly into the stomach via gastrostomy, and replacing the tube, patient could self-administer the medication. We present a novel technique of medication administration when substitution of form, route of administration, and medication are not possible.



[3709] **Figure 1.** EGD showing extrinsic stenosis at cricopharyngeus.



[3709] **Figure 2.** Pathology with H&E stain showing presence of malignant cells.



[3709] **Figure 3.** Pathology with GATA-3 immunostain positive metastatic breast cancer cells.

S3710

A Case Series of Gastric Adenocarcinoma Presenting as Cardiac Tamponade

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Introduction: Gastric cancer is the fourth most common type of cancer worldwide and frequently presents at an advanced stage. As such, the presenting symptoms of gastric cancer may be related to sites of metastasis rather than the primary tumor. We describe two cases that presented to the same hospital within a six-month period who were found to have pericardial tamponade secondary to gastric adenocarcinoma metastasis.
Case Description/Methods: **Case 1** describes a case of a 91-year-old male who presented with progressively worsening dyspnea. A bedside echocardiogram revealed large pericardial effusion with evidence of cardiac tamponade. Pericardiocentesis and formation of a pericardial window was emergently performed. Cytology revealed metastatic signet ring adenocarcinoma with gastric as the most likely origin. **Case 2** describes a case of a 68-year-old female with a history of breast cancer who presented to the hospital with epigastric pain, nausea and dyspnea on exertion accompanied by chest pain upon presentation to the ED. An echocardiogram revealed a large pericardial effusion with evidence of tamponade and a pericardiocentesis was urgently performed. A CT scan noted multiple hepatic lesions that were highly suspicious for metastatic disease. She underwent interventional radiology (IR) guided biopsy of a liver lesion and the pathology was consistent with adenocarcinoma. A follow-up esophagogastroduodenoscopy (EGD) with biopsies revealed moderately to poorly differentiated gastric adenocarcinoma as the primary tumor.
Discussion: The pericardium is a rare site of metastasis for gastric adenocarcinoma and may present atypically. Subacute presentation of tamponade may mimic heart failure; thus physicians should have a lower threshold for ordering echocardiography.

S3711

A Mimic of Gastroparesis: An Atypical Case of Gastric Outlet Obstruction Caused by a Gastric Polyp

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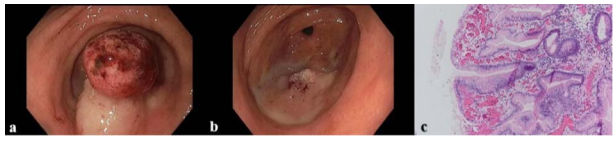
Introduction: We present this case, because gastric polyps are rare and are often incidentally found on an esophagogastroduodenoscopy (EGD), with an incidence up to 5%, and are typically asymptomatic. This case emphasizes the unique finding of a gastric polyp causing intermittent gastric outlet obstruction and the importance of appropriate clinical work-up, despite the patient's symptoms mimicking gastroparesis.
Case Description/Methods: A 36-year-old man, with a history of type 2 diabetes, presented with a one-year history of intermittent post-prandial bloating, nausea, early satiety, and emesis within one hour after a meal. He denied hematemesis, hematochezia, melena, dysphagia or odynophagia. He had no family history of gastrointestinal cancer. The patient had been placed on metoclopramide by his primary care provider prior to this presentation without resolution of symptoms. His laboratory data was significant for hemoglobin of 11 g/dL, mean corpuscular volume 77.6, platelet count 283 × 10 9/L, and serum ferritin 14 mcg/L (24-336 mcg/L). An EGD revealed a single 20 mm pedunculated polyp with oozing blood at the gastric antrum. Intermittent prolapse of the polyp into the duodenal bulb was noted with peristalsis. For resection, the stalk of the polyp was injected with epinephrine (Figure 1a) and was removed with a hot snare (Figure 1b). Endoclips were placed to prevent bleeding. The remainder of the exam was unremarkable. Histopathological analysis demonstrated a hyperplastic polyp with mucosal erosion, and no dysplasia (Figure 1c). The pathology was also negative for H.pylori. Patient's symptoms had completely resolved at follow up.
Discussion: Gastric polyps are often incidentally found on an EGD, with rare cases of them causing symptoms. This case emphasizes the rare finding of a large antral hyperplastic polyp causing intermittent gastric outlet obstruction due to a "ball-valve" effect. The erosion of surface epithelium of the polyp was likely causing bleeding and resultant anemia. Hyperplastic polyps have malignant potential and should be resected completely. Although the patient is at risk of gastroparesis due to his history of diabetes, this case highlights the importance of appropriate work-up including endoscopy for symptoms and laboratory data consistent with alarming features. Anchoring bias and premature closure can lead to delayed diagnosis and potential harm to the patient.



[3711] **Figure 1.** (a) illustrates the gastric polyp and stalk post-epinephrine injection; (b) illustrates the gastric mucosa after the polypectomy; (c) illustrates the histopathology of the gastric polyp, showing hyperplasia, mucosal erosion, but no dysplasia.

S3712

A Case of Non-Cardia Gastric Cancer in a Patient From Cuba

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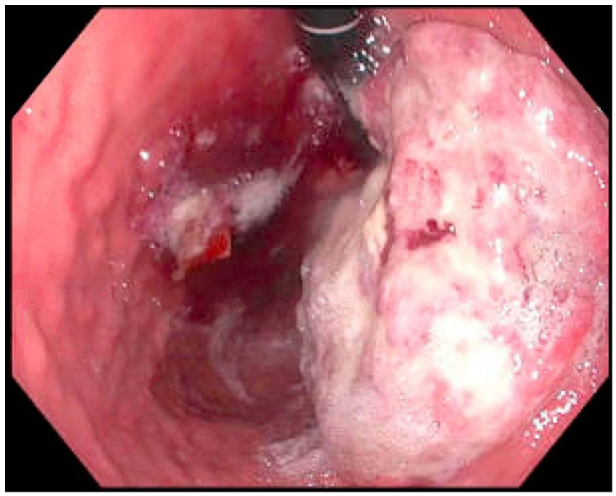
[1]University of South Florida, Tampa, FL; [2]USF Health Morsani College of Medicine, Tampa, FL.

Introduction: We present a case of stage 4 non-cardia gastric cancer in a patient from Latin America and illustrate the need for gastric screening guidelines for high-risk groups.
Case Description/Methods: A 48-year-old Hispanic male with no prior medical history presented to the emergency department (ED) after two months of worsening burning epigastric pain and fifteen-pound unintentional weight loss. The patient was born in Cuba and moved to the United States 5 years prior. In the emergency department, the patient was hemodynamically stable and afebrile. His abdominal exam was significant for epigastric and left lower quadrant tenderness without rebound or guarding. His labs were significant for a hemoglobin of 11.7 grams per deciliter, iron of 22 micrograms per deciliter, and ferritin of 13.3 nanograms per milliliter. Imaging the abdomen with computerized tomography was significant for a nodular lesser curvature mass measuring 8.4 by 5.4 centimeters. Esophagogastroduodenoscopy was performed and revealed a fungating, ulcerated mass on the lesser curvature of the stomach. A biopsy of the mass was significant for poorly differentiated adenocarcinoma, and a gastric biopsy was significant for chronic gastritis with *Helicobacter pylori*-like organisms. The patient underwent endoscopic ultrasonography, which revealed stage T4 gastric cancer with a 5-year survival of 13.8% vs. 5.3% after curative and noncurative resection, respectively (Figure 1).
Discussion: Gastric cancer is the third leading cause of cancer-related deaths in the United States. According to the American Association for Cancer Research Disparities Progress Report 2022, gastric cancer incidence and mortality is more than two-fold higher in both Black and Hispanic Americans than in non-Hispanic White (NHW) Americans. When diagnosed early, gastric cancer has a five-year survival rate of 67%; if resected with stage IA or IB, the five-year survival is 94% and 88%, respectively. Over 90% of noncardia gastric cancer is attributable to *Helicobacter pylori* which has a three-fold higher prevalence in Mexican Americans and Black Americans. There are screening guidelines in countries like Japan, South Korea, Venezuela, and Chile due to the pervasive disease. In the United States, there are no gastric cancer screening guidelines despite evidence that endoscopic non-cardia gastric cancer screening for high-risk groups such as those listed above may be cost-effective.



[3712] **Figure 1.** A large, fungating, ulcerated, non-circumferential mass on the lesser curvature of the stomach.

S3713

A Rare Case of Extramedullary Gastric Plasmacytoma Presenting With Pseudoachalasia

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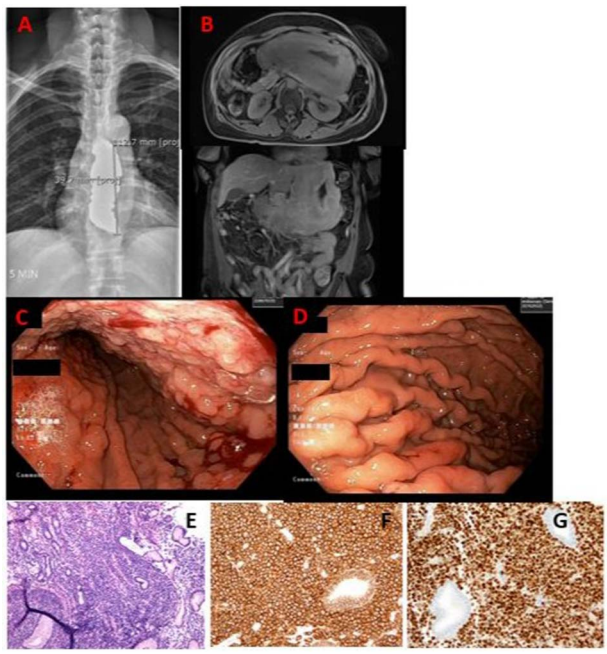
Introduction: Extramedullary plasmacytoma (EMP) is a rare plasma cell neoplasm that can occur in association with multiple myeloma. Gastrointestinal involvement is extremely rare and accounts for less than 5% of all EMP cases. We present here a case of multiple myeloma initially presenting with pseudo-achalasia due to EMP of the stomach involving the gastroesophageal junction (GEJ).
Case Description/Methods: A 65-year-old female presented to the emergency department for symptomatic anemia, and progressive dysphagia to both solid and liquids in the past three months. She reported associated 20 lbs. weight loss. She denied melena, abdominal pain and heartburn. Past medical history was notable for chronic kidney disease and iron deficiency anemia. Physical exam was unremarkable. Laboratory workup revealed microcytic anemia with Hg of 8.1, platelet 167, calcium 8.8, creatinine 2.54. The patient underwent a timed barium swallow with findings concerning for achalasia (Image 1). MRI abdomen showed diffuse gastric wall thickening with extension into the GEJ (Image 1). EGD evaluation revealed friable gastric mucosa with severe thickening of the folds (Image 1). Biopsies were consistent with plasma cell malignancy. Serum immuno-electrophoresis revealed bi-clonal gammopathy of IgA lambda and IgG kappa. The diagnosis of multiple myeloma (MM) was confirmed on bone marrow biopsy with identification of plasma cell neoplasm of 10%. A Congo red stain was negative for amyloidosis. The patient was managed with bortezomib, dexamethasone and daratumumab combined therapy with resolution of symptoms at three months follow up. She achieved complete endoscopic and histological remission of EMP after 13 cycles of treatment.
Discussion: The presentation of MM with GI involvement is extremely rare and typically presents with non-specific symptoms such as abdominal pain, nausea and vomiting, and rarely GI hemorrhage. Pseudo-achalasia is an uncommon presentation and occurs in cases of esophageal or GEJ involvement. There are currently no established treatment guidelines, although most patients are managed with radiation and combination therapy with Bortezomib-based regimens, or autologous transplant in refractory cases. Our case highlights an atypical presentation of EMP with symptomatic and histological resolution using adjuvant chemotherapy/immunotherapy. A high degree of clinical suspicion is essential in facilitating the correct diagnosis given that delay in treatment can lead to rapid progression and poor prognosis.



[3713] **Figure 1.** (A) Timed barium esophagram showing dilated and tortuous esophagus. Beaking of the esophagus at the GE junction region with delayed passage of contrast into the stomach. (B) MRI abdomen with contrast showing very severe diffuse gastric wall thickening. (C) Esophagogastroduodenoscopy at the time of diagnosis showing severe diffuse thickening with friable mucosa from the gastric cardia to the antrum, (D) Improvement post treatment. (F) Antral-type gastric mucosa diffusely infiltrated by a monotonous population of atypical plasma cell infiltrates (Hematoxylin and eosin, 100×). (G) Strongly positive CD138. (H) MUM1 (Immunohistochemistry, 200×).

S3714

A Rare Case of Glomus Tumor of the Stomach Presenting With Upper Gastrointestinal Bleeding

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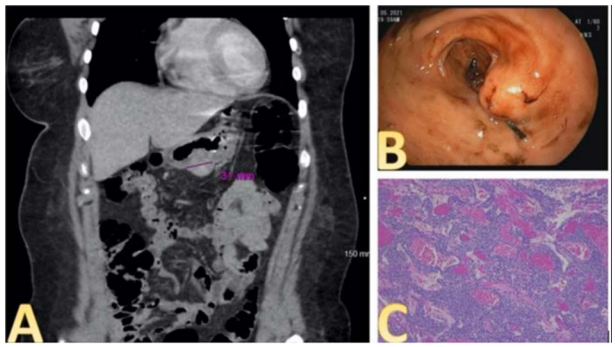
Introduction: Glomus tumors are mesenchymal neoplasms arising from glomus bodies – thermoregulatory arteriovenous shunts, mainly located in the extremities. Gastrointestinal (GI) glomus tumors are rare, with gastric involvement being even less common. Given their rarity and non-specific presentation, they are a challenge to diagnose.
Case Description/Methods: A 27-year-old female with no significant past medical history presented with new-onset melena and lightheadedness. Her hemoglobin (Hb) was 6.5 g/dl. EGD showed a single 15-mm cratered ulcer with an overlying blood clot in the gastric body. An endoclip was placed for site marking. Hb continued to fall and multiple blood transfusions were needed. CT abdomen showed a 3-cm rounded prominence along the inferior wall of the gastric antrum, adjacent to the metallic clip. Repeat EGD revealed a fresh clot and oozing from previous site. No discrete vessel or lesion was visible. Hemostasis was achieved with epinephrine injection. Hb remained stable in the 7s and patient was discharged. She re-presented to the ER 2 days later with dizziness and melena. BP was 89/65 and Hb was 5.2 g/dl. On EGD, an ulcer with an adherent clot was seen in the gastric antrum. This appeared to arise from a 1-2 cm submucosal nodule, suggestive of an ulcerated GIST. The defect was closed with endoclips. Hb continued to drop, and surgery was consulted, who proceeded with laparoscopic robotic-assisted local wedge resection of the bleeding gastric mass. Post-operative course was uneventful. The fluctuation in Hb stopped. On histopathology, proliferation of glomus cells around blood cells was seen. Immunohistochemistry (IHC) was positive for calponin and actin, consistent with a glomus tumor. On a follow-up visit 4 weeks later, patient reported resolution of symptoms (Figure 1).
Discussion: Gastric glomus tumors commonly present with epigastric pain. GI bleeding is seen in 1/4th of the cases, when the tumors bulge towards the mucosa and ulcerate. EUS can help identify their origin from the submucosa and muscularis propria, though EUS-guided biopsy may cause bleeding. Radiological appearance mimics hypervascular gastric tumors like GIST and neuroendocrine tumors. These can be differentiated via histopathology and IHC. Glomus tumors are composed of vasculature surrounded by small, monomorphic cells without atypia. IHC is suggestive of smooth muscle differentiation with positive actin and vimentin. Surgical resection is preferred. Cases of recurrence and malignant transformation have been reported.



[3714] **Figure 1.** CT scan of the abdomen showing a 3 cm heterogeneous slightly rounded prominence along the inferior wall. (B) EGD showing A 1-2 cm submucosal nodule with an overlying bloody ulcerated mucosa in (A). (C) Classic features of glomus tumor with solid sheets of neoplastic cells in a background of blood vessels with varying caliber (hematoxylin and eosin, magnification 200×).

Table 1. Subtypes of glomus tumors

Type	Incidence	Characteristics
Solid	75%	Mainly composed of glomus cells nests.
Glomangioma	20%	Cavernous hemangioma-like vascular structures, surrounded by glomus cells.
Glomangiomyoma	5%	Glomus cells resemble mature smooth muscle.

S3715

A Possible Case of Granulomatous Gastritis Linked to Carbon Tetrachloride Exposure

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Introduction: Granulomatous gastritis (GG) is a rare clinical entity, and most cases described in the literature are associated with Crohn's disease, infections, or underlying malignancy. Idiopathic GG is much less common, and the use of volatile solvents as an etiology has not been previously described. We present a possible case of granulomatous gastritis linked to occupational exposure to carbon tetrachloride.
Case Description/Methods: A 67 year-old male underwent endoscopy for long-standing reflux symptoms and abdominal discomfort, not responsive to daily proton pump inhibitor (PPI) therapy. Index endoscopy revealed antral erythema and biopsies revealed florid non-caseating granulomatous gastritis. Work-up for infectious etiologies, sarcoidosis and Crohn's all returned back negative, including normal imaging, endoscopy, and histological stains. The patient was diagnosed with idiopathic granulomatous gastritis. Multiple repeat upper endoscopies with biopsy showed persistent GG in the absence of infections. Occupational exposure to carbon tetrachloride was identified in the patient's history, with frequent use over a one-year period while working on an industrial ship. Carbon tetrachloride has been demonstrated in the literature to cause hepatic toxicity, with one mechanism being through granuloma formation.
Discussion: Our patient achieved symptom control through dose escalation to twice-daily PPI therapy. One possible etiology identified was this patient's exposure to carbon tetrachloride, a solvent used in the past as a cleaning agent, which is how our patient had his prolonged exposure. Limited data suggest that dermal exposure of carbon tetrachloride can cause gastrointestinal symptoms such as nausea and vomiting, though the clear mechanism behind that is unclear. Perhaps the most well-known toxicity of carbon tetrachloride is hepatotoxicity, with one mechanism being granuloma formation seen in studies of mice who were injected with the substance. Although a definitive causality cannot be proven, we propose a potential etiology behind our patient's diagnosis of granulomatous gastritis.

S3716

A Rare Case of Ectopic Liver Tissue Incidentally Found in the Gastric Body

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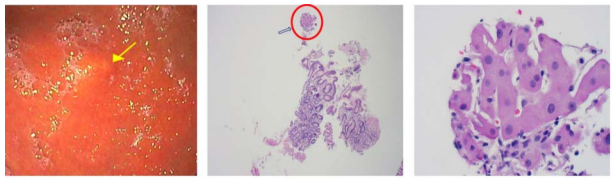
Introduction: Ectopic liver tissue (ELT) is seldom reported in the literature. It is usually asymptomatic and incidentally found. However, ELT has a strong association with malignant transformation to hepatocellular carcinoma (HCC), making removal of this tissue essential. Presented is a rare case of ELT found in the stomach.

Case Description/Methods: A 78-year-old male with a past medical history of hypertension and gastritis presented to clinic for worsening gastroesophageal reflux disease (GERD) over the past six months. The patient reported GERD symptoms for the past twenty years that he had been self-treating with over-the-counter proton pump inhibitors, probiotics, and digestive enzymes without relief. On presentation his vitals, physical exam, and blood work were unremarkable. The patient underwent esophagoduodenoscopy (EGD) which revealed esophagitis, a large paraesophageal hernia, and a single 15-millimeter submucosal nodule in the anterior wall of the gastric body. Cold forceps biopsies obtained from the body and antrum of the stomach were unremarkable and negative for H. pylori. He was referred for endoscopic ultrasound (EUS), where a fine needle biopsy of the benign-appearing gastric body submucosal nodule was performed (figure 1a). Three passes were made with a 22-gauge ultrasound biopsy needle using a transgastric approach. A visible core of tissue was obtained. Final cytology demonstrated superficial gastric mucosa and detached benign liver tissue (figures 1b, 1c). No dysplasia or malignancy was seen.
Discussion: ELT has an incidence of 0.24-0.47%. Of the reported cases, ELT is most commonly seen in the gallbladder or pancreas. The etiology of ELT is unknown but is thought to be associated with errors in embryological development. Most ELT is asymptomatic but can develop the same pathologies as the orthotopic liver. It can also cause abdominal pain, bleeding, and compression of neighboring tissues. There is also a strong association between HCC and ELT, necessitating biopsy and endoscopic removal. This case demonstrated ELT incidentally found in the gastric body during EGD and was biopsied by a fine needle using EUS guidance. Histology was without features to suggest malignancy, but to prevent malignant transformation endoscopic resection was recommended.



[3716] **Figure 1.** 1a. Arrow indicating nodule in gastric body, as seen by endoscopic ultrasound. Image 1b. Hematoxylin and eosin stain with 100x magnification. Normal gastric glandular mucosa. Arrow indicating benign unremarkable hepatic tissue found in gastric body. Image 1c. Hematoxylin and eosin stain with 200x magnification. Benign unremarkable hepatic tissue found in gastric body.

S3717

A Rare Case of Malignant Melanoma of the Stomach

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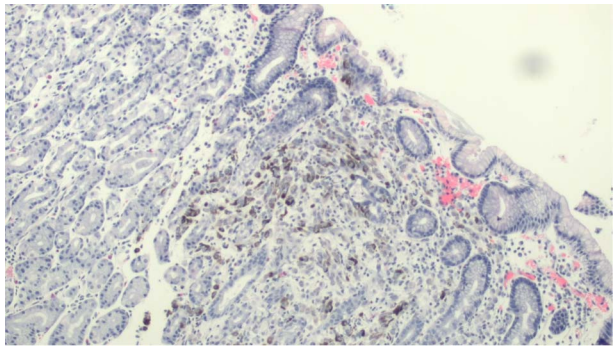
Introduction: Malignant melanoma with metastasis to the stomach is rare and seldom diagnosed before death. The most common gastrointestinal (GI) metastatic sites are the small intestine, followed by the colon, rectum, and stomach. We present the case of a 55-year-old female with a history of melanoma who presented with melena, and syncope and was found to have metastatic gastric melanoma.
Case Description/Methods: A 55-year-old female with a history of right eye choroidal melanoma (status post enucleation of the right eye) with metastasis to liver, bone, and lungs and on therapy with daily trametinib for two years presented to our hospital with chief complaints of hematochezia, fatigue, dizziness, and abdominal pain of one day. Computed Tomography Angiography (CTA) abdomen showed a small area of active bleeding at the gastroesophageal junction (GEJ). The patient was admitted to intensive care unit and was started on intravenous proton pump inhibitors, octreotide, and pressor support. Post admission, she did not report any further episodes of overt GI bleed. Esophagogastroduodenoscopy (EGD) demonstrated a benign-appearing stricture at GEJ and an associated Mallory Weis tear with a visible nonbleeding vessel. Additionally in the stomach, multiple small, pigmented lesions were visualized and biopsied. Biopsy demonstrated gastric mucosa with brown-black pigmented epithelioid cells in lamina propria with immunochemistry stain positive for S-100, and MART-1, diagnostic of malignant melanoma (Figure 1). Following goals of care discussion, the patient declined further aggressive treatment and transitioned to hospice.
Discussion: Metastatic melanoma to the stomach is rare, mostly asymptomatic, and thus evades detection, often not being detected until autopsy. For suspicious metastasis to the GI tract, EGD, colonoscopy, and, if needed, capsule endoscopy should be performed, with subsequent biopsy of lesions. Most metastatic melanomas have a poor prognosis with a median survival of four to six months. Due to the rich lymphatic and vascular supply of gastric mucosa, gastric metastases are particularly aggressive. Early diagnosis is critical for the timely evaluation of patients for treatment options like surgical resection, immunotherapy, and targeted therapy. It is thus vital to keep gastric melanoma as a differential diagnosis when evaluating patients with a history of melanoma, presenting with non-specific abdominal symptoms like nausea, vomiting, GI bleeding, weight loss, and anemia.



[3717] **Figure 1.** Gastric mucosa with brown-black pigmented epithelioid cells in lamina propria, diagnostic of malignant melanoma.

S3718

A Rare Case of Invasive Ductal Carcinoma of the Breast With Metastases to the Stomach

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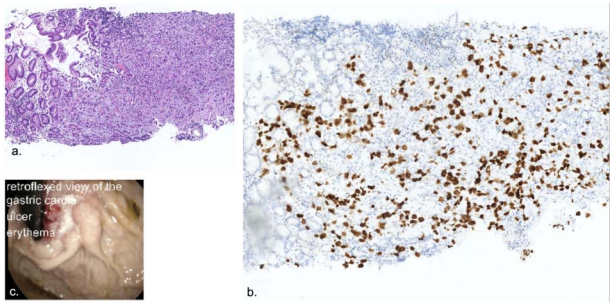
Introduction: The most common type of breast cancer is invasive ductal carcinoma (IDC) followed by invasive lobular carcinoma (ILC). Both histologic subtypes have the potential to metastasize to distant sites, but each demonstrates different metastatic tendencies. IDC metastasizes more often to the bone, lung, and liver, while ILC metastasizes more frequently to the peritoneum and gastrointestinal tract. Gastric metastases are a rare occurrence and are predominately seen in patients with ILC. Here, we present an unusual case of IDC of the breast with metastases to the stomach.
Case Description/Methods: A 77-year-old female with a history of estrogen and progesterone receptor negative, HER2 positive IDC of the breast with metastases to the liver, brain, and lung on palliative chemotherapy presented to our hospital with one month of abdominal pain and melena. On evaluation, the patient was hemodynamically stable with an abdominal exam revealing moderate tenderness in the epigastric region. Lab tests showed acute normocytic anemia with a hemoglobin 8.2 g/dl. The patient underwent esophagogastroduodenoscopy demonstrating a 1.5 cm ulcer at the gastric cardia with surrounding erythema and friable tissue. Pathology from gastric ulcer biopsy showed poorly differentiated adenocarcinoma in the deeper aspect of the lamina propria with immunohistochemistry positive for GATA-3, BRST-2, E-cadherin and HER2 consistent with metastatic breast IDC. The patient was discharged to home with oral pantoprazole and iron supplements. She was later seen in oncology clinic with labs showing improvement in her anemia and palliative chemotherapy was resumed. (Figure)
Discussion: Gastric metastases are an infrequent discovery. When detected, the most common primary source is breast cancer and more often the ILC histologic subtype. Our patient's breast cancer initially followed the typical pattern of IDC with metastases to the liver, brain, and lung. Her disease then progressed to involve the stomach, which is rarely seen in HER2 positive IDC. Gastric metastases may present as

a single ulcerative lesion on endoscopy, which may be difficult to differentiate from primary gastric cancer as seen in this case. The immunohistochemistry of our patient's gastric ulcer biopsy revealed positive biomarkers for metastatic IDC thereby confirming the diagnosis. Physicians should consider the possibility of metastasis to the stomach in patients with breast cancer presenting with symptoms of a gastric ulcer even in those with the IDC histologic subtype.



[3718] **Figure 1.** [A] H and E shows gastric mucosa with expansion of the lamina propria by malignant cells (10x). [B] The malignant cells are positive for GATA-3 immunostain which supports metastasis from patient's known breast primary (10x). [C] 1.5 cm ulcer at the gastric cardia with surrounding erythema and friable tissue.

S3719

A Rare Case of Gastrointestinal Strongyloidiasis in a Patient With Weight Loss

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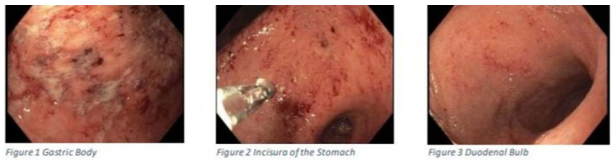
Introduction: Strongyloidiasis is a disease caused by an infection with the nematode Strongyloides stercorali. S. stercoralis is able to reproduce through an asexual autoinfection cycle, allowing it to multiply indefinitely within the host causing fatal infection in the immunocompromised. We present a case of strongyloidiasis hyperinfection diagnosed after an EGD.
Case Description/Methods: A 69-year-old male with PMH of rectal adenocarcinoma in remission presented with months of progressive weakness. Symptoms included diarrhea, nausea, early satiety, and a 40lb weight loss in 3 months. The patient was hospitalized several times for similar symptoms. Concerns were raised for colonic malignancy given his history, however, a colonoscopy that was performed within a year from the encounter was unremarkable. Anemia, eosinophilia, and transaminitis were noted on admission. Abdominal examination was benign. An extensive workup was performed including imaging, gastric emptying study, and stool cultures yielded no remarkable findings. While hospitalized, the patient's Hg dropped for which an inpatient EGD was performed. Erythematous, friable, and eroded gastric mucosa and duodenal mucosal changes were seen (Figures 1-3). The biopsy showed inflammation with parasitic larvae consistent with S. Stercoralis. The diagnosis was confirmed with serology testing. Two doses of Ivermectin were given to the patient with significant clinical improvement.
Discussion: Strongyloidiasis is a soil-transmitted disease that is endemic in the tropics and subtropics. While In the US it can be found among immigrants and travelers, our case was a Caucasian male residing in the Midwest with no travel history. The infection starts with Larvae penetrating bare skin and causing a local reaction. Acute infection happens when larvae reach the lungs while migrating to the GIT causing tracheal irritation and a dry cough. The establishment of the parasite in the intestine causes the chronic disease. It is usually asymptomatic/mild GI symptoms. Eosinophilia, as noted in our patient, is a remarkable finding. Pruritic linear streaks resulting from migrating larvae are significant skin findings, however, none was present in our case. Hyperinfection is a potential medical emergency and occurs with increased larval migration. Exacerbation of GI symptoms is seen. In our patient severity of symptoms implied the hyperinfectivity warranting immediate treatment. Ivermectin is the treatment of choice as it targets both adults and larvae.



[3719] **Figure 1.** EGD.

S3720

A Rare Case of Bouveret's Syndrome

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Introduction: Bouveret syndrome is an extremely rare complication of gallstone disease that results in a gastric outlet obstruction caused by an impacted gallstone at the pylorus or proximal duodenum. It typically occurs after the formation of a fistula between the gallbladder and the duodenum or stomach in the setting of chronic gallbladder inflammation. If not detected early, it can result in a gallstone ileus and has a high rate of morbidity and mortality. Here we present the case of a 81 year old male who presented to our institution with inability to tolerate PO intake for 1 week with CT findings suggestive of a gastric outlet obstruction of unknown etiology.
Case Description/Methods: The patient is an 81 year old male with a PMHx of BPH, Vertigo, and Glaucoma who presented to our institution with the CC of generalized abdominal pain and inability to tolerate PO intake for 1 week. CT of the AP on admission demonstrated abnormal thickening and inflammatory changes at the pyloroduodenal junction with a high attenuation intraluminal density within this region, along with severe distention of the stomach. There was also extensive pneumobilia present. Pre-operative EGD demonstrated a distended stomach, residual food within the gastric lumen, and impacted density at the pylorus that appeared to be a gallstone. Endoscopic retrieval could not be performed as the gallstone appeared to be located within the duodenum. The patient was referred to the surgical service and he subsequently underwent laparotomy which demonstrated findings of acute cholecystitis, a cholecysto-duodenal fistula, and a large impacted gallstone within the proximal duodenum that was 7 x 5 x 4 cm in size. The surgical service performed a cholecystectomy, duodenotomy with removal of the impacted gallstone, repair of the cholecysto-duodenal fistula, and placement of a tube duodeno-jejunostomy. The patient's hospital course was complicated by fluid collection that required CT-guided percutaneous drainage by the IR service.
Discussion: Bouveret syndrome is a rare complication of chronic gallbladder disease and represents approximately 1% to 3% of gallstone obstructions found within the GI tract. Diagnosis relies on cross sectional imaging and a diagnostic (and attempted therapeutic) upper endoscopy. While first line therapy is typically attempted with an upper endoscopy with stone extraction, it is often accompanied by poor success rates compared to surgical intervention. This syndrome has a high morbidity and mortality if not recognized early.

S3721

A Rare Case of Glomus Tumor of the Stomach With Metastatic Spread to the Liver and Lungs

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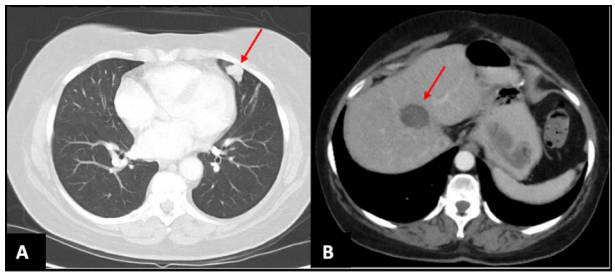
Introduction: Glomus tumors are rare mesenchymal neoplasms arising from glomus bodies and occur mostly as benign tumors located in the subungual region of the digits. Glomus tumors of the gastrointestinal tract are rare, where there may be few or no glomus bodies, and the majority are benign, rarely demonstrating malignant behavior. We present a case of a metastatic glomus tumor of the stomach, which was initially deemed benign.
Case Description/Methods: We present a 72-year-old woman who underwent excision of a gastric mass with a partial gastrectomy in 2010, suspecting a Gastrointestinal stromal tumor (GIST). However, pathology findings were consistent with glomus tumor of uncertain malignant potential given borderline tumor size (2 cm) and increased mitotic activity (>=5/50 HPF). She was not started on chemotherapy and was on surveillance. She was asymptomatic until 2016, when she presented with acute abdominal pain. Imaging showed multiple new necrotic metastases throughout the liver with pathology consistent with metastatic glomus tumor. She underwent radioembolization of the right hepatic and left hepatic artery in 2017 and continued to be symptom-free until 2019 when she presented with another episode of abdominal pain; imaging showed an increase in the number of liver lesions and underwent radioembolization with a good response. Repeat surveillance imaging in early 2020 showed a nodule in the lingula (shown in figure 1a). A CT-guided lung biopsy confirmed the diagnosis of an epithelioid neoplasm, consistent with a metastatic glomus tumor. Caris genomic testing did not show any apparent mutations, and no clear molecular targets for treatments were present. She had low ERCC1 and TOPO1, suggesting that oxaliplatin and irinotecan may be considered for treatment in case of disease progression.
Discussion: Our case highlights the importance of considering glomus tumors as part of the differentials in GI mesenchymal tumors despite GIST having the highest incidence. It is known that many GI mesenchymal tumors have visual and radiological similarities, and hence a biopsy is required. Although a majority of glomus tumors are benign, obtaining histological and immunohistochemical features is still imperative to make a definitive diagnosis to detect malignant glomus tumors with metastatic potential to visceral organs as they have a poor prognosis.



[3721] **Figure 1.** CT Thorax (1a) and abdomen (1b) w/contrast showing epithelioid neoplasm of the lingula and hypo-dense liver mass respectively.

S3722

A Rare Gastrosplenic Fistula Treated Endoscopically in a Post-Chemotherapy Patient With Diffuse Large B Cell Lymphoma

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Introduction: Gastrosplenic fistula (GSF) is a rare complication of diffuse large B cell lymphoma (DLBCL) involving the spleen or stomach. Fistulas can form spontaneously or following chemotherapy and occur due to local wall invasion. Presenting symptoms often include abdominal pain, splenomegaly, vomiting and fatigue. In this case we discuss a rare presentation of DLBCL complicated by GSF and abscess formation in a 36-year-old female presenting with abdominal pain with constipation.
Case Description/Methods: A 36-year-old female with a past medical history of DLBCL on rituximab, doxorubicin, vincristine, and cyclophosphamide presented with fever, leukopenia, tachycardia and tachypnea in the setting of abdominal pain with constipation. Due to SIRS positivity and severely decreased absolute neutrophil count (ANC) of 0.12 K/UL, the patient was started on IV meropenem. Initial CT abdomen and pelvis was concerning for GSF with gas/fluid collection in the spleen from fistulous communication with the stomach. This was confirmed on upper gastrointestinal series (UGI). During esophagogastroduodenoscopy (EGD), a 5mm fistula was found on the greater curvature of the gastric body with surrounding congested mucosa and ulceration. Tissue devitalization within and around the fistula was achieved using argon plasma coagulation (APC). An over-the-scope clip was then successfully deployed resulting in fistula closure. Follow-up UGI three days later confirmed successful and sustained fistula closure. She also underwent CT-guided abscess drainage catheter placement with intervention radiology. Abdominal fluid cultures grew *Step constellatus, Strep anginosus, Lactobacillus rhamnosus* and *Parvimonas micra.*
Discussion: GSF with abscess formation is an exceedingly rare and potentially fatal complication of DLBCL which can often pose a diagnostic and therapeutic challenge to clinicians. There have been few reported cases of GSF with the majority occurring in the setting of DLCBL involving the stomach and spleen. The second most common cause is Hodgkin's lymphoma, followed closely by histiocytic lymphoma. Post-chemotherapy GSF occurs due to rapid regression of tumor burden which decreases wall integrity and promotes fistula formation. Early diagnosis and treatment of GSF is vital in reducing overall morbidity and mortality in patients with DLBCL. GSF should always be on the differential diagnosis list in a DLBCL patient presented with abdominal pain and positive SIRS criteria.

S3723

A Rare Cause of Upper Gastrointestinal Bleeding: Gastric Synovial Sarcoma

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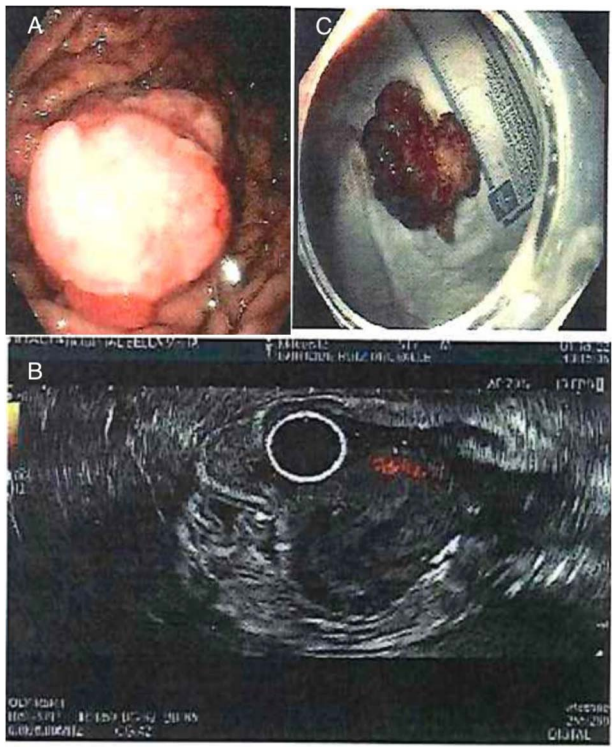
Introduction: Synovial sarcoma is an uncommon type of malignant mesenchymal neoplasm commonly found within joints of the extremities and very rarely found in the GI tract. Genetic sequencing techniques used as an adjunct to histochemical markers have proven indispensable for diagnosis following biopsy. We present a rare subtype of soft tissue neoplasm called primary gastric synovial sarcoma as cause for gastrointestinal bleeding in a middle-aged Hispanic patient.
Case Description/Methods: A 51-year-old male with a medical history of Hypertension, and Diabetes was brought to the ER due to a syncopal episode. Patient denied abdominal pain, weight loss, hematemesis, hematochezia, hematuria, or melena. Physical exam was remarkable only for pale conjunctiva. Laboratory results remarkable for a hemoglobin of 5 g/dL warranting multiple packed red blood cell transfusions. Colonoscopy was performed with normal findings. Following upper GI endoscopy, a mid gastric body 3 cm polypoid irregular mass with shallow ulcerations was found. The patient was referred for endoscopic ultrasound revealing a 25 by 21 mm heterogenous hypoechoic mass in the greater curvature confined to mucosal layer. The acquired specimen displayed characteristics of a high-grade tumor with multiple negative markers (table 1). Therefore, an SS18 FISH test (18q11.2 probe) was performed and the results show the presence of translocation t(X,18) (p11.2;q11.2), consistent with a poorly differentiated synovial sarcoma, a spindle cell monophasic subtype. Completeness of resection of the tumor could not be documented so the patient was referred to surgery for partial gastrectomy of the involved area. The remaining tumor measured 0.7 cm, invaded the submucosal layer but all margins and lymph nodes were uninvolved. A subsequent PET/CT scan did not reveal evidence or residual or metastatic disease. (Figure)
Discussion: This is the first known case of a primary gastric synovial sarcoma, in a patient of Puerto Rican ethnicity, without family history of genetic disorders, radiation exposure or previous malignancy. Prognosis remains challenging due to the small number of reported cases with surgical resection as the mainstay of treatment. Therefore, it is crucial to continue to identify and diagnose this rare malignancy to better inform treatment and prognostic decisions going forward.



[3723] **Figure 1.** Figure A: Friable lobular mass at greater curvature of stomach. Figure B: Endoscopic ultrasound revealed 2.5 by 2.1 cm heterogeneous hyperechoic mass at greater curvature of stomach confined to mucosal layer. Figure C: Picture of specimen following endoscopic mucosal resection.

Table 1. histochemical stains / Fluorescence in situ Hybridization performed for identification of tumor

Tumor	Marker	Result
Lymphoma	CD20, CD23	Negative
Gastrointestinal stromal tumor	CD117, CD34, DOG-1	Negative
Angiosarcoma	CD34	Negative
Leiomyosarcoma	caldesmon, MSA, SMA, Desmin	Negative
Sarcomatoid carcinoma	AE1, AE3	Negative
Spindle cell melanoma	S100, SMB 45	Negative
Synovial Sarcoma	SS18 FISH test (18q11.2)	t(X;18)(p11.2;q11.2)

S3724

A Rare Cause of Chylous Ascites

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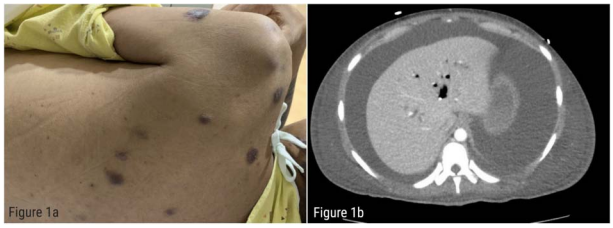
Introduction: Chylous ascites (CA) is a rare form of ascites that results from accumulation of milky-appearing fluid through leakage of lymph into the peritoneal cavity. We report a rare case of Kaposi sarcoma (KS) associated CA in a patient with AIDS.
Case Description/Methods: A 29-year-old man with a medical history of HIV and disseminated KS presented with abdominal distension, vomiting, anorexia, and unintentional wight loss. He was recently hospitalized and found to have KS of the duodenum invading the common bile duct and had a stent placed in CBD and thoracic duct embolization. Upon admission, His physical exam demonstrated multiple skin lesions (Figure 1a), and abdominal fullness. CT imaging showed ascites (Figure 1b). He had a paracentesis that showed milky, cloudy and turbid fluid. Ascites fluid triglycerides was 236 mg/ dL. Adenosine deaminase in the fluid was negative, and quantiferon gold was negative. His clinical course worsened and complicated by septic shock, kidney failure and encephalopathy, unfortunately he eventually died.
Discussion: The majority of CA cases in developed countries are associated with malignancy and cirrhosis, whereas infectious diseases, including TB, are more common in developing countries. KS-associated CA is rare with only few cases reported to date. In disseminated KS, compression or invasion of the lymphatic system can lead to CA. Although CT scan is the modality of choice to evaluate intra-peritoneal fluid accumulations, it cannot differentiate between chylous and clear ascites. While identification of chylomicrons using lipoprotein electrophoresis is considered the gold standard for CA diagnosis, it is not readily available. Paracentesis followed by fluid analysis is the most commonly used method. Ascites fluid triglycerides >200 mg/ dL confirms CA diagnosis. Fluid markers as ADA, which was negative in this case, can be used as an indirect marker for tuberculous effusion. The management of CA consists of treating the underlying disease process. Dietary modification and medications such as orlistat, somatostatin, octreotide and etilefrine have shown benefits in certain scenarios. Peritoneal shunt and angiography with embolization of a leaking vessel are among the interventional options for refractory cases to medical management. However, recurrent AC is common. Congregation of rare CA cases can provide more insight into the pathogenesis of KS-associated CA and treatment strategies.



[3724] **Figure 1.** 1a Kaposi sarcoma lesions, 1b CT imaging of abdomen and pelvis showing ascites.

S3725

A Rare Hybrid gNET: The Neoplastic Jack of All "Grades"

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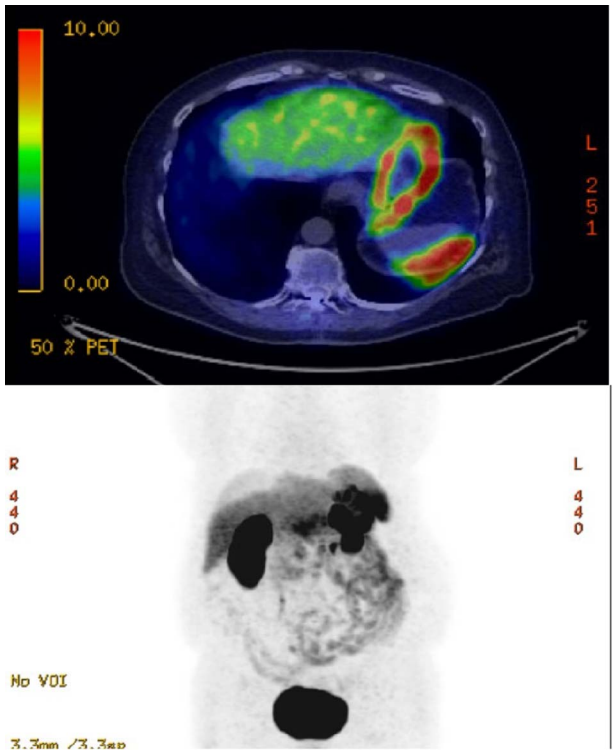
Introduction: Gastric neuroendocrine tumors (gNETs) are rare malignancies which arise from enterochromaffin-like cell (ECL) precursors within the gastric mucosa. There are 4 classifications of gNETs primarily based on size, number of lesions, serum gastrin level, tissue invasion, proliferation index and immunohistochemistry. Applying a combination of factors, gNETs are typically classified into one of these four categories with relative ease. The following case highlights an exceedingly rare hybrid presentation of gNET containing features of all four classification subtypes.
Case Description/Methods: A 78-year-old female with a past medical history of hypertension, diabetes mellitus, chronic kidney disease and gastroesophageal reflux disease (GERD) initially presented with worsening symptoms of GERD. The patient denied any alarm symptoms but did endorse persistence of reflux symptoms despite proton pump inhibitor use. Screening EGD with EUS showed polyps which were removed with mucosal resection. Initial pathology illustrated well differentiated gNET. She underwent a DOTA-TATE PET/CT scan which showed heterogenous uptake involving the gastric body reflecting focal gNET without evidence of metastatic disease. The patient underwent total gastrectomy and esophagojejunostomy with upper GI series revealing no evidence of anastomotic leak. On subsequent pathology, at least 46 semi pedunculated gastric polyps were identified of which the greatest tumor dimension was 0.6 cm with a mitotic rate less than 2 mitoses/2mm2. Pathology and immunohistochemistry revealed well differentiated gNET, grade 1 and 2, staining positivity for Chromogranin A (CgA), synaptophysin, CD56, and CAM 5.2 with a Ki67 proliferation index > 6%. Patient's serum gastrin was within normal limits at 51pg/ml and 24-hour urine 5-HIAA revealed a normal level of 5.7 mg/24hr. She was referred to a geneticist for massive parallel sequencing also known as next generation sequencing (NGS). (Figure)
Discussion: This case displays a rare, hybrid presentation of gNET with features of all four classification subtypes. The positive synaptophysin, normal serum gastrin and increased Ki67 index are characteristic of gNET Type 3 and 4 which carry a poor prognosis. Type 3 and 4 however, are typically large (>2cm), single tumors. This patient had many, smaller tumors with positive CgA staining commonly seen in Type 1 and 2. Hybrid gNETs are extremely uncommon neoplasms which create both a diagnostic and therapeutic challenge requiring a truly multidisciplinary effort.



[3725] **Figure 1.** Ga-68 Dotatate PET-CT showing diffuse heterogenous uptake in the gastric body.

S3726

A Silent Gastric Adenocarcinoma With Peritoneal Carcinomatosis: A Case of a Newly Diagnosed Decompensated Cirrhosis Leading to a Fatal Diagnosis of a Silent Metastatic Malignancy

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Introduction: Gastric carcinoma (GC) with peritoneal carcinomatosis is an advanced cancer with a median survival of less than 6 months. It is the third leading cause of cancer-related death. We present a case of an advanced Gastric Signet-ring cell carcinoma (GSRCC) with peritoneal carcinomatosis that presented as decompensated liver cirrhosis.

Case Description/Methods: A 62-years-old African American male with HTN and DM type II presented with 4 week of worsening abdominal distension with pressure and worsening acid reflux. He denied alcohol, smoking and has no family history of gastrointestinal malignancy. Physical exam revealed a non tender but distended abdomen with dullness to percussion. CT scan of abdomen and pelvis (CT A/P) revealed liver cirrhosis and moderate ascites with mesenteric edema. EGD revealed small varices and poor distensibility of the stomach with diffuse mucosal congestion, granularity, and ulceration in the gastric body and antrum. Biopsy uncovered poorly differentiated GC with signet ring cells. Ascitic fluid cytology also confirmed adenocarcinoma with positive CK7 and CDX-2 markers. Repeat CT A/P with contract revealed nodular densities in the omentum with ascites. With the aforementioned test results, diagnosis of GSRCC stage P3 was made and he was started on palliative chemotherapy with mFOLFOX6 (modified folinic acid, fluorouracil, and oxaliplatin). He is doing well after 9 months of mFOLFOX6 initiation.
Discussion: Most GC are diagnosed at advanced and incurable stage with a median survival of 6 months hence early diagnosis is key to increased survival. The only potential curative therapy is surgical resection for GC in situ whereas palliative chemotherapy is the probable therapeutic option for intraperitoneally-disseminated GC. Based on multiple retrospective studies, gastrectomy with systemic palliative chemotherapy did not significantly improve survival when compared to chemotherapy alone in intraperitoneally-disseminated GC. With rising in GSRCC cases, general population should be educated about its early signs and should seek medical attention sooner. Physicians likewise should have a low threshold for referring to gastroenterologist for endoscopy in a high-risk patient with any alarm symptoms or for persistent acid reflux or epigastric pain that is not relieved with a trial of PPI. Our patient had acid reflux for more than a year which was mildly controlled with antacid. Had he sought appropriate medical attention, his diagnosis could have been made at an earlier stage.

S3727

A Rare Complication of Percutaneous Endoscopic Gastrostomy (PEG) Tube Removal Causing Intermittent Gastric Outlet Obstruction

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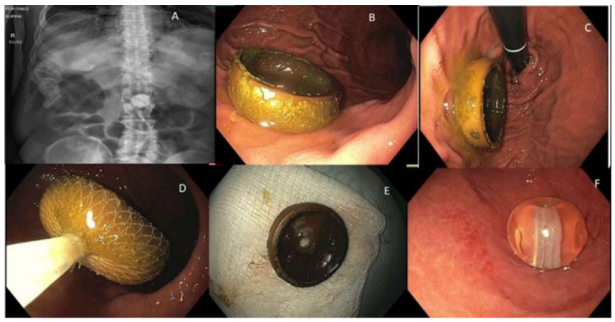
Introduction: Percutaneous endoscopic gastrostomy (PEG) tubes, introduced in 1980, have worldwide recognition for overall safety in providing enteral feeding to patients with poor oral intake. PEG tubes can be removed via percutaneous or endoscopic means and the rate of complications vary but can be as low as 1-2%. Major complications include bleeding, aspiration pneumonia, internal organ injury, buried bumper syndrome, and tumor seeding of the stoma. After placement, minor complications including granuloma formation, local wound infection, peristomal leakage, and tube dislodgement. This case presents the rare complication of intermittent gastric outlet obstruction (GOO) due to internal bumper dislodgement during PEG tube removal via external traction.
Case Description/Methods: A 64 year old male with amyotrophic lateral sclerosis (ALS) complicated by chronic respiratory failure and dysphagia required PEG-tube removal via external traction due to leakage malfunction. Prior tube had been in use for 3 years and was exchanged to a 22Fr balloon G tube. Procedure was technically uncomplicated, but post procedurally, patient complained of epigastric pain, nausea and lack of bowel movements, concerning of gastric outlet obstruction vs. small bowel obstruction. Epigastric tenderness and hypoactive bowel sounds were present on exam. Abdominal xray showed round density in LUQ concerning for a foreign body. On day 3 post exchange, GI was consulted and performed EGD for foreign body removal. An old internal PEG tube bumper was seen freely mobile within the gastric antrum. Antral erosions were present. Internal bumper of 2.5 cm was removed with a Roth net. Patient declined any further pain or discomfort immediately after the procedure. (Figure)
Discussion: PEG tube insertion and exchange are mostly safe, uncomplicated procedures. We report an unusual complication of gastric outlet obstruction due to residual bumper in the antrum after removal of PEG tube. In the literature, removal of PEG tube by cutting the tube at the skin level and waiting for natural passage has been described. One combined retrospective and prospective study revealed that visible passage of residual tube was only noted by 55% of patient, with mean passage time being 2.4 days. Similar to our patient, only one patient has been described to have pain until passage of the PEG tube 4 days later. This highlights the importance of ensuring tube remains intact after its removal and the need for increased awareness on the intervals recommended for tube replacements.



[3727] **Figure 1.** Freely mobile residual bumper, removed via Roth net. A- Abdominal KUB showing possible foreign body within stomach following G tube exchange B- Retained internal bumper of G tube within gastric body C- Retroflexed view D- Removal of G tube's internal bumper from the stomach using Roth net E- Successfully retrieved internal bumper of G tube F- Internal balloon of newly replaced 22Fr G tube within gastric body.

S3728

A Stomach Bug? Not What You May Think: A Case of Post-Viral Gastroparesis Caused by SARS-CoV-2

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Introduction: Gastroparesis has a wide range of etiologies including diabetes, medications, post-surgical, post-viral and idiopathic. SARS-CoV-2 can cause gastrointestinal symptoms which typically resolve within the first few weeks of infection. However, some sequelae persist beyond the initial infectious period.
Case Description/Methods: A 56-year-old female with Type II Diabetes Mellitus presented with a syncopal episode and a two-month history of intractable nausea, vomiting, oral intolerance, and unintentional 20lbs weight loss following COVID-19 infection. She had no prior gastrointestinal problems. On exam, she had orthostatic hypotension and appeared debilitated with dry mucous membranes. Initial laboratories showed electrolytes abnormalities and a hemoglobin A1c of 7.4. She was treated with intravenous fluids, electrolyte repletion, and ondansetron, but her nausea and vomiting persisted. CT abdomen and EGD ruled out mechanical obstruction. Gastric emptying was positive with a half-emptying time of 114 minutes. Her symptoms fully resolved over time following a short course of metoclopramide and a brief period of supportive measures. The patient does have a history of diabetes, a known etiology for gastroparesis. However, her symptoms started and continued for several months following COVID-19 infection, despite adequate glycemic control as evidenced by her hemoglobin A1c. Her gastroparesis was thus attributed to a SARS-CoV-2.
Discussion: Though post-viral gastroparesis is a known subset of idiopathic gastroparesis, few cases of post-COVID gastroparesis have been reported. Most cases represent an exacerbation rather than an index event. Several pathophysiologic mechanisms have been hypothesized. SARS-CoV-2 uses ACE-2, which is expressed in the glandular cells of gastric, duodenal and rectal epithelium to enter host cells and replicate. Studies of the previous SARS epidemic showed active replication in both the small and large intestine. Post-viral injury to the smooth muscle and interstitial cells of Cajal may also lead to delayed gastric emptying. Given the lack of available data to guide management specific to post-COVID gastroparesis, our patient was managed based upon existing recommendations for post-viral gastroparesis and improved with this approach.

S3729

A Rare Case of Primary Lung Adenocarcinoma With Biopsy-Proven Gastric Metastases

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Introduction: Gastrointestinal (GI) metastases from lung cancer are extremely rare. Lung adenocarcinomas are associated with the least likelihood of spreading to the GI tract, and the gastric cavity is a rare site to be involved. Hence, we find it of interest to present a rare case of primary lung adenocarcinoma with biopsy-proven gastric metastases.

Case Description/Methods: A 67-year-old male with 120 pack-year smoking history presented with back and abdominal pain, and productive cough for several months. CT abdomen and pelvis showed numerous lytic lesions in the pelvis and thoracic spine, and an L1 vertebral mass. Further scans revealed ground-glass opacity in the right lung and extensive brain and meningeal enhancement. Biopsies of random gastric mucosa and L1 mass were consistent with metastatic adenocarcinoma with immunohistochemical testing staining positive for Napsin A, TTF1, CK7, and CK19. Peripheral blood was sent for Foundation one testing and no actionable mutations were found. He was diagnosed with Stage IVb lung adenocarcinoma and received 4 cycles of carboplatin, pemetrexed and pembrolizumab and radiation therapy to whole brain, followed by maintenance chemotherapy with pemetrexed and pembrolizumab. Unfortunately, surveillance PET scans revealed worsening tumor burden and currently he is undergoing palliative chemotherapy and radiation

Discussion: As novel treatments are discovered, and survival rates increase, the spectrum of pathology of lung cancer has also evolved. Lung cancer commonly metastasize to the bones and brain; however, the GI tract is increasingly being noted as a potential metastatic site. Small cell lung cancer is the most common subtype of lung cancer associated with GI metastases, predominantly involving small intestine. Very few cases of lung adenocarcinoma with stomach metastases have been reported. Diagnosis of the primary lesion can be tricky in cases where initial presentation includes GI complaints. Further, while metastases to other GI sites might present early as obstruction or perforation, gastric metastases can remain clinically silent for long durations due to the anatomy of the gastric wall and size of the gastric cavity, and hemorrhage in this location can be occult and more extensive. The metastatic involvement of rare sites is mostly seen in aggressive and advanced malignancy. Reporting these rare cases remains essential to substantiate the index of suspicion, which is paramount to early diagnosis and better clinical outcomes.

S3730

A Strongyloides of a Gastritis

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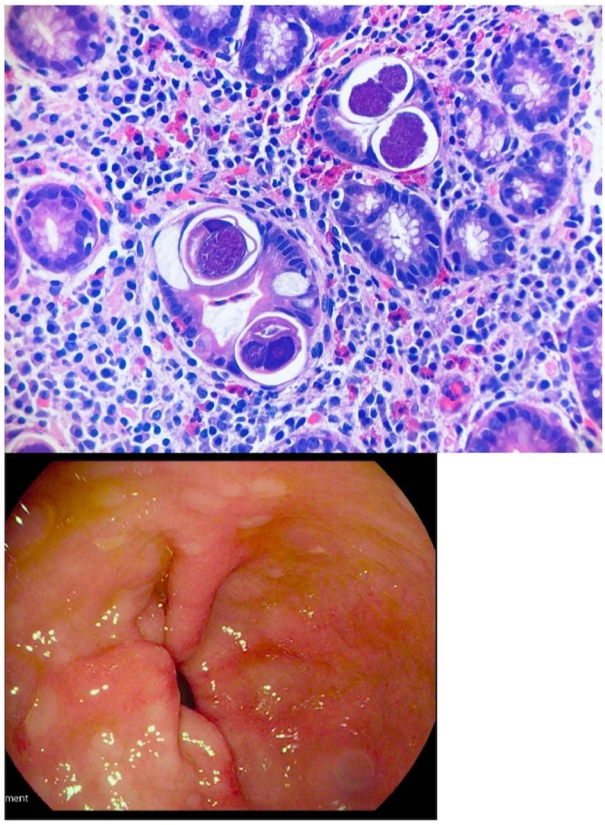
Introduction: Strongyloides Stercoralis is an intestinal parasite that is normally seen in endemic areas such as Southeast Asia, South America, or other tropical areas. Stongyloides rarely inhabits gastric mucosa given acidic nature. Here we present a case of a 72 yo Male who was found to have strongyloides stercoralis in the gastric antrum and body.

Case Description/Methods: A 72 year old Dominican Republic male with hypertension, diabetes, and BPH presented to the hospital with complaints of epigastric pain ongoing for 1 day. He was noted to have bright red blood from rectum 1 time prior to presenting to the hospital. During initial workup, he was found to be hemodynamically stable with a slight decrease in hemoglobin of 11.3 and eosinophilia of 13. EGD and Colonoscopy were performed. EGD was found to have erythematous mucosa in gastric body and antrum with nodular mucosa. Colonoscopy was consistent with hematin in the entire colon, diverticulosis in the rectosigmoid colon and sigmoid colon. Pathology results for EGD showed strongyloides gastritis in the antrum and body in the background of autoimmune metaplastic atropic gastritis. Patient was later discharged and instructed to follow with gastroenterologist outpatient. (Figure)

Discussion: Strongyloides is a nematode that commonly found in the intestinal tract in tropical areas. Usually the parasite live buried in crypts in the proximal small intestine. Gastric involvement has rarely been seen given the acidic nature of the stomach. However it is noted that reduced gastric secretion or immunocompromised state might favor larvae migration to the stomach. The common symptoms that have been reported with gastric involvement include abdominal pain, diarrhea, and nausea. Laboratory studies may reveal eosinophilia; however eosinophilia can be absent in immunocompromised hosts. Gold standard for diagnosis remains stool studies which may need to be done multiple times as parasitic output in the stool is usually low. In our patient given his age, symptoms, and country of origin strongyloides should be kept in thought, although rare gastric involvement can be fatal.



[3730] **Figure 1.** a. Histologic image of strongyloides in the gastric mucosa surrounded by eosinophils Figure b. Showing Endoscopic view of strongyloides gastritis.

S3731

A Rare Complication of Peptic Ulcer Disease: Double Pylorus Syndrome

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Introduction: Double Pylorus Syndrome or gastroduodenal fistula is a rare entity usually found incidentally on endoscopy. This syndrome can be congenital or secondary to gastric malignancy or peptic ulcer disease. The pylorus has two openings which connect the duodenal bulb to the gastric antrum. This syndrome is extremely rare and found in less than .5% of cases. Recurrent gastrointestinal (GI) bleeding can occur secondary to inadequate epithelization of the tract and recurrent ulcerative disease. We present a unique consequence of peptic ulcer disease in a 68 year old female found to have Double Pylorus Syndrome.
Case Description/Methods: A 68 year-old female with PMH of atrial fibrillation on anticoagulation presented to the hospital for evaluation of iron deficiency anemia and was found to have a hemoglobin of 6.8. She was treated with an intravenous proton pump inhibitor drip and iron supplementation. Iron studies revealed an iron level was 19 with a ferritin of 11. She had undergone prior upper endoscopic evaluation which revealed a non-bleeding gastric ulcer in the antrum. She underwent repeat esophagogastroduodenoscopy which revealed a duodenal ulcer with active oozing which was treated with epinephrine, two endoclips, and gold probe electrocautery. A double pylorus was also seen. The patient was discharged with a course of PPI therapy and was cleared to resume anticoagulation, however, she deferred restarting until discussion with her outpatient cardiologist. (Figure)
Discussion: Our case represents an acquired form of Double Pylorus Syndrome (Image 1) which is a rare complication of peptic ulcer disease. Acquired gastro-duodenal fistulas are uncommon and typically present in the prepyloric region in combination with chronic peptic ulcer disease as seen with our patient. This type of fistula forms due to inflammation of the gastric gastric antrum or duodenal bulb leading to adhesions that form between the gastric and duodenal walls. Standard treatment is with a proton pump inhibitor, avoiding triggers such as NSAIDs and corticosteroids, and eliminating H. pylori if present. Our patient responded well to medical management. Surgical intervention is necessary if there are refractory symptoms, perforation, or failure of endoscopic treatment. We present a rare anatomical entity secondary to peptic ulcer disease that clinicians should be aware of and thus be vigilant in treating the underlying cause.

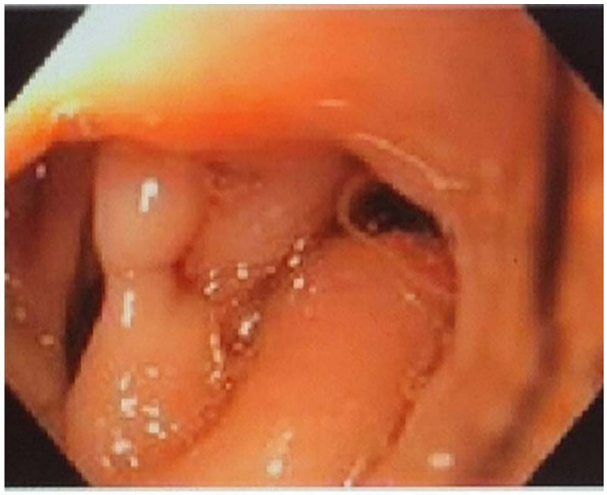

Image 1: Double Pylorus seen on EGD

[3731] **Figure 1.** Double Pylorus.

S3732

A Unique Manifestation of Tuberculosis in the Gut

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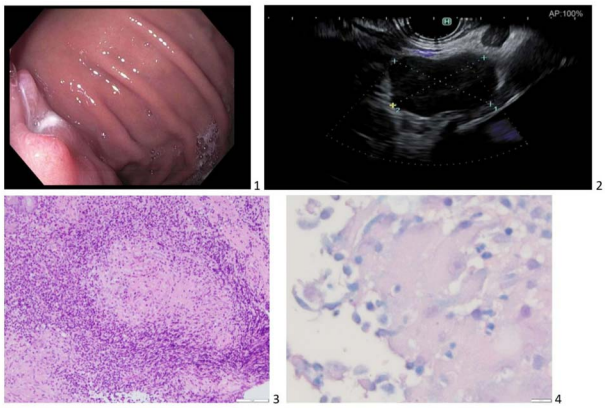
Introduction: Abdominal manifestations of tuberculosis (TB) can involve the peritoneum, gastric body, intestinal tract, pancreas, perianal region, hepatobiliary region, and surrounding lymph nodes in patients with associated risk factors. We present a patient with known TB exposure and a gastric mass with associated lymphadenopathy (LAD), later determined to be secondary to gastric tuberculosis.
Case Description/Methods: An 18 year old female with no past medical history presented with several months of upper abdominal pain exacerbated by deep breathing. A prior esophagogastroduodenoscopy (EGD) revealed a submucosal gastric ulcer (1), and further evaluation with an EGD and endoscopic ultrasound (EUS) revealed a peri-gastric mass with retroperitoneal and portocaval LAD (2). Fine needle aspiration (FNA) of the mass revealed granulomatous inflammation with focal necrosis (3) and rare acid fast bacilli seen on Fite stain (4). Further history on follow up revealed a close household contact had recently tested positive for TB. The patient was started on full treatment with Rifampin, Isoniazid, Pyrazinamide, and Ethambutol (RIPE) for gastric TB, with improvement in symptoms noted on follow up. A repeat EGD with EUS was performed 7 months after the initial, with observed improvement in retroperitoneal LAD and no organisms seen on FNA. (Figure)
Discussion: This case illustrates a unique presentation of gastric TB in a patient, later determined to have been exposed to a close contact. The presenting symptom of non-remitting abdominal pain along with prior endoscopic findings of a submucosal gastric ulcer prompted further evaluation, which led to the histologically confirmed diagnosis of gastric TB and the initiation of appropriate treatment. Gastrointestinal (GI) tract involvement of TB occurs in about 11% of cases, and is associated with concomitant pulmonary TB infection in only about 25% of cases. Mycobacterium tuberculosis is thought to infiltrate the GI tract by adhering to submucosal lymphoid tissue, with caseous necrosis leading to ulceration over 2-4 weeks. Diagnostic findings include circumferential ulceration surrounded by inflammation with submucosal granulomas seen on biopsy, as seen in this case. Patients often clinically improve after treatment with RIPE, though surgical management is warranted when complications exist. GI manifestations of TB should be considered in patients with positive risk factors and unexplained persistent abdominal symptoms, with treatment initiated as soon as the diagnosis is confirmed.



[3732] **Figure 1.** 1) Gastric cardia ulcer seen on EGD 2) Peri-gastric lymphadenopathy seen on EUS 3) 10x Hematoxylin & Eosin (H&E) stain of gastric tissue showing granulomatous inflammation 4) 60x Fite stain of gastric tissue showing acid fast bacilli.

S3733

Acute Gastritis and Functional Gastroparesis Due to Sarcina ventriculi Infection

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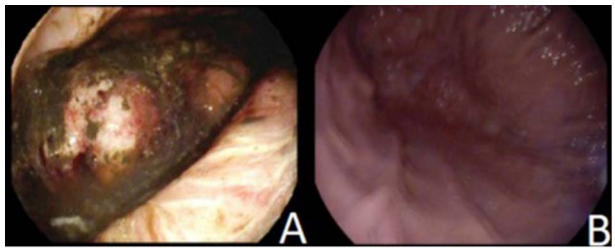
Introduction: Sarcina ventriculi is a rare anaerobic gram-positive coccus that grows in a tetrad arrangement in the stomach. Its pathogenicity is poorly understood in humans. Limited prior case reports link associations with various clinical presentations including gastritis, ulceration, delayed gastric emptying, gastric outlet obstruction, and gastric perforation. There is no established treatment for symptomatic patients. We present a case of successfully treated Sarcina ventriculi-related acute gastritis and delayed gastric emptying.
Case Description/Methods: Patient is an 89-year-old male hospitalized and treated for community-acquired pneumonia. On day 8, he developed episodes of large volume, brown emesis. He denied any bowel movement since admission but was passing flatus. There was significant abdominal distention but no tenderness on exam. Abdominal radiography showed no acute obstruction but extensive gaseous distention of the stomach along with moderate colonic stool burden. Gastroenterology was consulted. Nasogastric tube placement resulted in immediate improvement, but symptoms returned in 7 days. As a result, an EGD was performed, which was significant for >500 cc retained fluid in the stomach and erythema with ulceration in the fundus. A focal area of ulcerated mucosa was biopsied, and the pathology report showed marked active gastritis with ulceration, fibrinous purulent exudate, and hemorrhage. Helicobacter pylori was negative but Sarcina ventriculi was identified. Patient was started on ciprofloxacin 250mg twice daily and metronidazole 250mg three times daily for a 7-day course, and pantoprazole 40mg twice daily for 6-8 weeks. He had symptomatic improvement and was discharged. He returned 4 months following discharge without symptoms of nausea or abdominal distention. Repeat CT abdomen showed mild thickening of the gastric wall which was later confirmed on EGD as normal mucosa. (Figure)
Discussion: Previous cases have reported that Sarcina ventriculi infection leads to serious complications such as emphysematous gastritis, ulceration, obstruction, and perforation. Our case showed a patient developing acute gastritis and functional gastric outlet obstruction with biopsy-confirmed Sarcina ventriculi. Per review of previous cases, treatment with a combination of metronidazole and fluoroquinolone has been used with varying results. Our case shows an acute presentation of the disease with complete resolution after a 7-day course of ciprofloxacin and metronidazole.



[3733] **Figure 1.** A. Initial EGD showed severe gastric ulceration in the fundus. B. Repeat EGD after antimicrobial and PPI treatment showed normal mucosa in the stomach and pylorus.

S3734

Abdominal Wall Necrotizing Fasciitis in a Recent COVID-19 Infection as a Rare Complication of Percutaneous Endoscopic Gastrostomy: Case Report and Review of Literature

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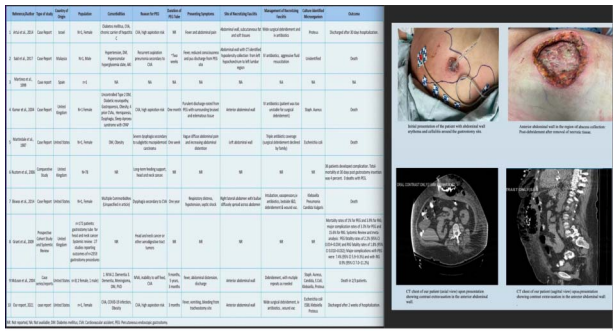
Introduction: Complications of percutaneous endoscopic gastrostomy (PEG-tube) can be minor (wound infection, bleeding, ulceration, tube dysfunction, inadvertent removal, gastric outlet obstruction) or major (colo-cutaneous fistula, necrotizing fasciitis). Abdominal wall necrotizing fasciitis from a leaking or dislodged PEG-tube is a rare but life-threatening complication.
Case Description/Methods: A 65-year-old female with history of hypoxic respiratory failure, stroke (requiring tracheostomy and PEG-tube), recent COVID-infection, atrial fibrillation presented with fever, tachycardia, tachypnea, and leukocytosis. Examination showed decreased basal breath sounds, mild erythema around gastrostomy site, while abdomen had no peritoneal signs. CT-scan showed bilateral lower lobe consolidations and extensive subcutaneous emphysema throughout anterior abdominal wall tracking into subcutaneous soft tissues and fat stranding. Her abdominal erythema worsened on day-2 as rapidly progressing cellulitis, with diffuse tenderness and crepitus. Contrast radiography confirmed necrotizing fasciitis of the abdominal wall. Broad-spectrums antibiotics were initiated. Patient underwent surgical debridement, with removal of (15x20x20)cm necrotic tissue from anterior abdominal wall extending to fascial layers. Her wound cultures grew ESBL E.Coli, ESBL Klebsiella pneumonia and Enterococcus faecalis. Patient was discharged once stable; on wound-vac, dobhoff-tube nutrition and extended antibiotic regimen. (Figure)
Discussion: Abdominal wall NF is a rare complication of PEG-tubes seen in less than 1% of gastrostomy procedures with mortality between 50-80%. Old age, obesity, diabetes mellitus, immunocompromised status, and even COVID-19 infection are risk factors. In our patient, leakage from the dislodged tube into abdominal wall caused infection by gas-producing organisms. Her recent COVID-19 infection and multiple medical comorbidities also clouded the initial presentation. Our review of literature included 5 case reports- 4 reported death as the final outcome, one comparative study demonstrated PEG tubes have greater safety and fewer complications compared to other gastrostomy techniques, and one systemic review reported major complication rate of 7.4% and fatality rate of 2.2% following PEG-placement. Since PEG-tubes are widely used in critically-ill patients, physicians must be aware of this rare but life-threatening complication and their silent manifestation in this COVID era.



[3734] **Figure 1.** Review of Literature of all studies with percutaneous endoscopic gastrostomy associated necrotizing fasciitis of abdominal wall, along with images of abdominal wall necrotizing fasciitis in our patient, as described.

S3735

A Unique Case Report: Gastric Pneumatosis on Computed Tomography

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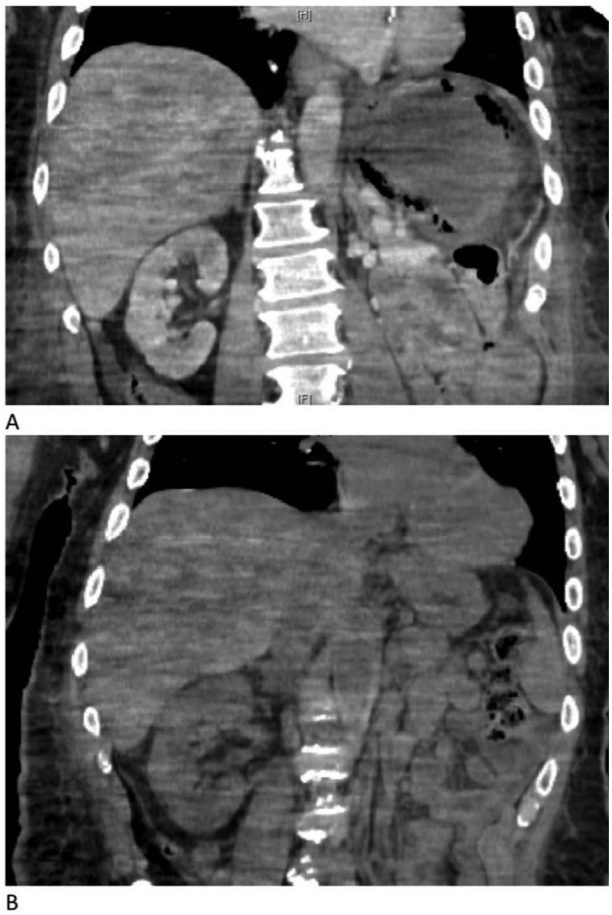
Introduction: Gastric pneumatosis is a unique medical condition characterized by the presence of intra-mural air in the stomach associated with portal venous air tracking to a variable degree. Pneumatosis of the gastric wall may be suggestive of ischemia and can imply compromised circulation, however, may also be due to a benign condition. A severe variant of pneumatosis intestinalis, emphysematous gastritis has been traditionally considered to have mortality rates as high as 60-80%. We present a rare case of emphysematous gastritis, discovered incidentally on imaging with a favorable outcome.
Case Description/Methods: 75-year-old male with Parkinson's disease, history of CVA with residual dysphagia, GERD, and Type 2 diabetes mellitus admitted for altered mental status. He had diarrhea, fatigue, decreased PO intake, and somnolence for one day. Given history of diarrhea, he was tested for C. diff and was found to be PCR positive, but negative toxin EIA. Labs remarkable for WBC 8.5K (peaking at 19.4K) and Cr 2.45. CT A/P to investigate diarrhea showed a distended stomach with emphysematous stomach, the celiac and left gastric arteries appearing normally enhanced. No evidence of an obstructive process (Figure A). Patient was managed conservatively with gastric decompression and infectious workup was unremarkable. Of note, patient had a readmission for AKI after 3 months and repeat CT A/P showed complete resolution of gastric pneumatosis (Figure B).
Discussion: Pneumatosis intestinalis is an uncommon phenomenon with the rarest forms as emphysematous gastritis. Literature review describes about 75 cases of emphysematous gastritis and gastric emphysema. Gastric emphysema is a benign condition due to a non-infectious source, mostly asymptomatic and no hemodynamic compromise. Emphysematous gastritis, however can present with significant symptoms such as septic shock. Gas producing organisms invade the gastric mucosa resulting in a systemic inflammatory response however no organisms are found in many cases. Various predisposing factors have been described in the literature including diabetes, renal failure, peptic ulcer disease, and alcohol abuse. Treatment can be surgical or conservative, with the correction of any fluid and electrolyte imbalance. Mortality of emphysematous gastritis has been estimated to ~60-80%, while the overall mortality of gastric emphysema is ~29%. We present this unique case to highlight importance of conservative management in emphysematous gastritis without ischemia.



[3735] **Figure 1.** (A): Initial CT A/P on admission with evidence of emphysematous stomach Figure (B): Readmission CT A/P after 3 months showing complete resolution of gastric pneumatosis.

S3736

Adenocarcinoma of the Gastric Stump After Billroth II

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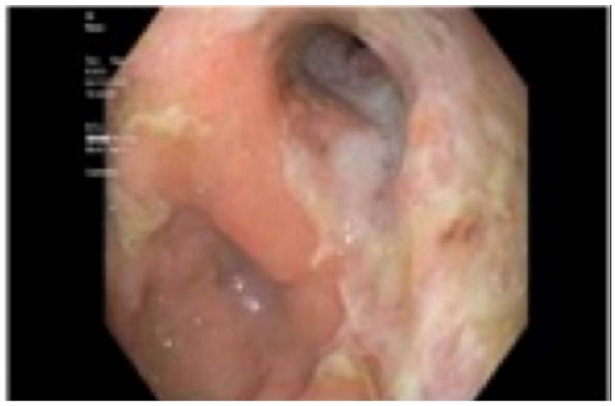
Introduction: Patients with a prior partial gastrectomy for benign diseases, such as Peptic Ulcer Disease (PUD), are at an increased risk of developing Gastric remnant Carcinomas which generally arise near the anastomotic site. Advancing therapeutics have reduced the prevalence of peptic ulcer gastrectomy, though it may still be indicated in certain instances including; bleeding, perforation, malignancy, and gastric outlet obstruction. Despite decreased gastrectomies performed, the long interval between surgery and the development of cancer has caused the incidence to remain stagnant.
Case Description/Methods: A 90-year-old male with a history of PUD status post-Billroth II 57 years prior presented to the hospital with hematemesis. He was admitted to the ICU for hemorrhagic shock and treated with packed red blood cells, IV Pantoprazole, and taken for endoscopy. Unfortunately, the stomach and the middle two-thirds of the esophagus were filled with clotted blood. After more than an hour of irrigation and clot removal, the source of hemorrhage was not found due to the excessive blood. The patient was kept nothing by mouth, given IV erythromycin, and taken for a repeat endoscopy. Again, after copious irrigation and clot removal, a source could not be found. The treatment continued and again endoscopy was performed. During this evaluation, the tissue of the anastomotic region of the stomach was noted to have granularity, friability, erythema, and ulcers. Biopsies were taken, which demonstrated adenocarcinoma of the stomach. The patient decided not to undergo further treatment and was discharged home with hospice care. (Figure)
Discussion: Remnant gastric stump cancer after resection of benign disease is a well-recognized complication and is defined as malignancy occurring five or more years after gastrectomy. The incidence is between 0.5-1% and typically increases 30 years after the initial gastrectomy. The underlying pathogenesis is thought to be secondary to reflux of biliary contents retrograde into the stomach, causing gastritis, leading to intestinal metaplasia, and the development of adenocarcinoma. Despite the risk, partial gastrectomy continues to be performed for PUD complications after conservative management has failed. While this process takes many years, it should be strongly considered in younger patients when considering partial gastrectomy. Cases such as this may highlight a need for further research and the development of screening guidelines for earlier detection of gastric remnant carcinoma.



[3736] **Figure 1.** Ulcers, granularity, friability, erythema, and congestion in the gastric antrum.

S3737

AL Amyloidosis: An Uncommon Cause of Hematemesis

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Introduction: Amyloidosis is a condition in which abnormal amyloid proteins deposit into various tissues of the body resulting in organ dysfunction. Immunoglobulin light chain amyloidosis (AL amyloid) is the most prevalent type. The clinical features of AL amyloid vary greatly. Gastrointestinal (GI) symptoms typically include constipation and dysmotility. Hemorrhage is an uncommon feature.
Case Description/Methods: An 84-year-old woman presented to the emergency department April 2019 with complaints of nausea and intermittent hematemesis. EGD on the day of admission was notable for a Mallory-Weiss tear, severe erythematous gastritis and necrotic-appearing changes of the gastric body, and adherent clot in the stomach. The areas were treated with epinephrine injections and clip placement. Gastric mucosa was biopsied and showed mild to moderately active chronic gastritis, positive congo red staining, and involvement of lambda light and heavy chains. Further biopsies of the GI tract included duodenum and colon and were negative for amyloid. Workup did not reveal any additional underlying malignancy or other systemic involvement. The decision was made to closely observe her clinical course. She had additional hematemesis in June 2021. EGD redemonstrated friable gastric mucosa. A daratumumab-based regimen was proposed for treatment of the amyloidosis, but the patient ultimately opted for observation.
Discussion: AL amyloidosis uncommonly presents as an isolated gastric disease which causes hematemesis. Of those with an affected GI tract, 25-45% of patients present with GI bleeding . GI manifestations typically include abdominal discomfort, malabsorption, and dysmotility. Hemorrhage may occur if the disease causes ischemia, mucosal friability, or ulcerations. In patients with localized amyloidosis, treatment is not needed unless the symptoms are severely symptomatic or if amyloidosis extended to the regions outside of stomach. If systemic treatment is needed, then it is aimed at treating the underlying plasma cell dyscrasia with monoclonal antibodies or chemotherapy.

S3738

Agent Orange as a Possible Cause of Helicobacter pylori Negative Gastric Mucosa-Associated Lymphoid Tissue Lymphoma

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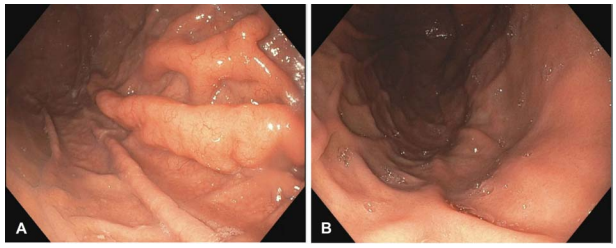
Introduction: Gastric mucosa-associated lymphoid tissue (MALT) lymphoma was first described in 1983 as the most common extranodal site of non-Hodgkin lymphoma. Helicobacter pylori (H. pylori) infection is implicated in 90% of all gastric MALT lymphoma cases. Agent Orange (AO), with traces of oncogenic 2,3,7,8-tetrachlorodibenzo-p-dioxin, has also been classified as a causative agent in non-Hodgkin lymphoma, which includes gastric MALT lymphoma. Here we report a case of H. pylori negative gastric MALT lymphoma in a patient with history of significant AO exposure.
Case Description/Methods: A 75-year-old Caucasian male veteran who served in the Vietnam War with significant AO exposure, as well as history of chronic gastroesophageal reflux disease, was referred for endoscopy to evaluate a reported history of un-staged Barrett's esophagus 5-years prior but with two subsequent normal endoscopies at an outside facility. He noted symptoms of burning chest pain and dyspepsia following large meals, all of which were worsened with spicy foods and improved with omeprazole. Family history was negative for a history of gastric cancer, and he had a 25-pack year smoking history but quit 20 years prior to presentation.Initial esophagogastroduodenoscopy (EGD) revealed abnormal folds in the gastric fundus and erythema in the gastric antrum, but otherwise normal exam including normal duodenum and esophagus. Random gastric biopsies and biopsies of the abnormal folds were consistent with gastric MALT lymphoma, negative for H. pylori and t(11;18)(q21;q21). Repeat EGD 1 month later for further sampling demonstrated identical findings (Figure 1A). Stool testing for H. pylori antigen was also negative. The patient was referred to oncology and after staging imaging was found to have stage IE gastric MALT lymphoma. He was treated with involved site radiation therapy and EGD 3 months later showed both endoscopic and pathologic resolution (Figure 1B).
Discussion: The 10% of cases of H. pylori negative gastric MALT lymphoma have an unclear etiology, although dysregulation of nuclear factor-kappa B (NF-κB) principally via translocations t(11;18)(q21;q21) is thought to be a potentially causative genetic alteration. In this patient, neither H. pylori nor the common t(11,18) genetic alteration were present. Given AO is implicated in non-Hodgkin lymphoma and the most common site of extranodal non-Hodgkin lymphoma is the gastric mucosa, AO exposure should be considered a risk factor for development of gastric MALT lymphoma.



[3738] **Figure 1.** (A) EGD demonstrating abnormal gastric mucosa with prominent gastric fundus folds seen on retroflexion during EGD prior to ISRT (radiation) therapy. (B) Post-radiation EGD demonstrating resolution of the abnormalities seen with the pre-treatment EGD including disappearance of the prominent gastric fundus folds.

S3739

An Elusive Diagnosis: Primary Gastric Melanoma With Metastatic Disease Presenting as Occult Gastrointestinal Bleed

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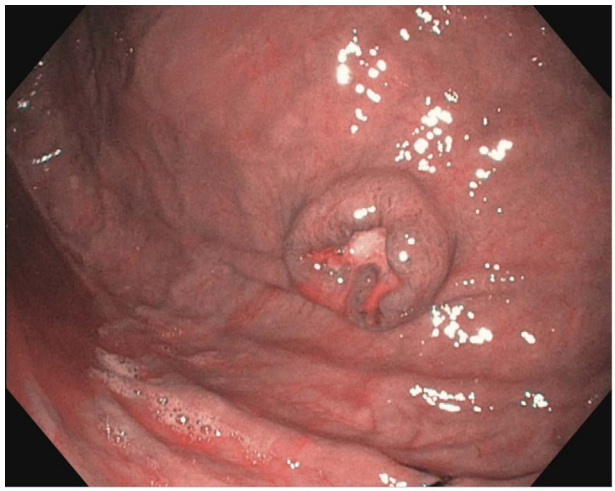
[1]Methodist Dallas Medical Center, Dallas, TX; [2]AdventHealth Orlando, Orlando, FL; [3]Allama Iqbal Medical College, Sarnia, ON, Canada.

Introduction: Mucosal melanomas are rare, accounting for 0.3% of all cancer diagnoses and ~1% of all melanomas. While cutaneous melanomas frequently metastasize to the gastrointestinal (GI) tract, primary GI melanomas, especially gastric, are extremely rare. Mucosal melanomas are more aggressive and have worse prognosis compared to cutaneous melanomas. We report a case of primary gastric melanoma (PGM) presenting as occult blood loss anemia.
Case Description/Methods: A 58 year old male presented with complaints of weakness, fatigue, intermittent black and tarry stools, dizziness, and loss of appetite and weight over the past few months. He also noted enlarging masses in the upper right quadrant of his abdomen and right axillary area. He denied pertinent medical, surgical, and family history. He never had a colonoscopy or esophagogastroduodenoscopy (EGD). Physical exam was notable for a firm, non-tender subcutaneous right upper quadrant abdominal mass and a palpable, non-tender right axillary lymph node. Labs showed severe iron deficiency anemia for which he received 2 units of packed red blood cells. EGD showed a non-bleeding, clean base gastric ulcer with raised borders on the anterior wall of the gastric body. Histopathological analysis showed an aggregate of malignant tumor cells positive for S-100 protein, HMB-45, and Melan-A, consistent with malignant melanoma. CT of the abdomen and pelvis revealed subcutaneous and intramuscular implants including a dominant lesion in the right upper abdominal wall, periportal and gastrohepatic ligament adenopathy, and small bowel thickening suspicious for carcinomatosis. Abdominal wall mass biopsy was consistent with metastatic melanoma, positive for S-100 protein and Melan-A. Detailed inspection failed to find any potential lesions on the skin, eyes or genitals. He was treated with combination immunotherapy. (Figure)
Discussion: In addition to being extremely rare, PGMs are exceedingly challenging to diagnose. The lack of specific symptoms and distinct endoscopic findings make it an elusive diagnosis even for the most experienced endoscopists. Lesions sometimes appear pigmented on EGD, however, they are often amelanotic and undistinguishable from other gastric malignancies. Therefore, biopsy with immunohistochemistry analysis is a crucial part of the diagnostic process. Metastasis is the most important prognostic factor, making early detection imperative. Further research is needed to establish diagnostic and management guidelines for this uncommon yet deadly disease.



[3739] **Figure 1.** Non-bleeding ulcer with a clean base on the anterior wall of the gastric body (8 mm, Forrest Class III).

S3740

An Uncommon Pulsating Submucosal Gastric Lesion

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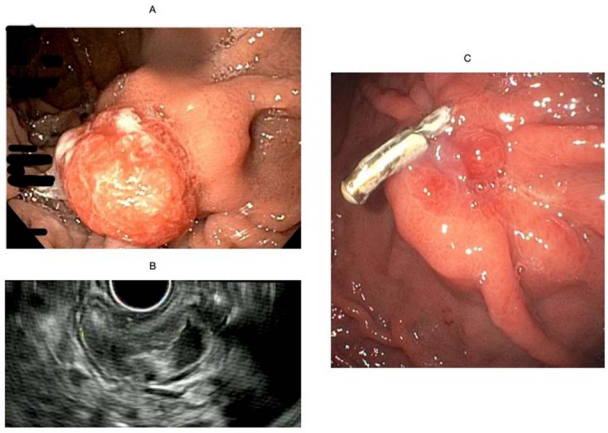
Introduction: Gastric hamartomatous inverted polyps (GHIP) are extremely rare submucosal lesions. These polyps are commonly asymptomatic and are found incidentally during esophagogastroduodenoscopy (EGD). While gastric polyps are benign in nature, 20% of GHIP possess foci of gastric adenocarcinoma. As such, en-bloc endoscopic or surgical resection is the treatment of choice. We describe a challenging case of a large GHIP in the setting of esophageal stenosis secondary to eosinophilic esophagitis (EOE).
Case Description/Methods: A 40-year-old male with no significant past medical history was referred to our clinic for dysphagia. EGD at this time was significant for severe esophageal stenosis with circular rings consistent with EOE and a 3 cm pulsating, polypoid submucosal mass at the gastric fundus (Figure A). Given the pulsatile nature of the mass, biopsy was deferred. Computed Tomography of the abdomen with contrast was significant for a 2.1 cm gastric wall mass, suspicious for a gastrointestinal stromal tumor (GIST). Endoscopic ultrasound (EUS), after esophageal dilation, was performed revealing a 25 x 15 mm submucosal gastric mass in the fundus, originating from the muscularis mucosa (Figure B). Fine needle biopsy (FNBx) was considered benign but inconclusive due to blood. The pathologist recommended additional tissue. An EGD was later performed with piecemeal endoscopic mucosal resection (EMR) followed by clip closure at the resection site. An endoscopic submucosal dissection (ESD) was not undertaken in this situation due to severe esophageal stenosis and inability to advance a scope with a distal attachment cap through the narrow esophagus. The final pathology was consistent with a GHIP. Follow up endoscopy revealed no residual tissue (Figure C). After discussion with the patient and due the risk of malignancy and inability to guarantee negative margins on a piecemeal resection, he was given the option of endoscopic surveillance vs. surgical resection, he elected the latter option. Robotic wedge gastrectomy was performed and revealed no residual GHIP.
Discussion: GHIP is a rare lesion often mistaken for GIST. After histological diagnosis, the treatment of choice for GHIP is en-bloc resection. This presentation with esophageal stenosis due to EOE made it extremely challenging to follow these traditional approaches. This case highlights how endoscopic mucosal resection can be used to resect these types of lesions.



[3740] **Figure 1.** A - Pulsating submucosal gastric fundus lesion seen on EGD ; Figure B - EUS image of the submucosal lesion ; Figure C - Resection scar at follow up EGD with granulation tissue and retained clip.

S3741

An Interesting Case of a Double Pylorus

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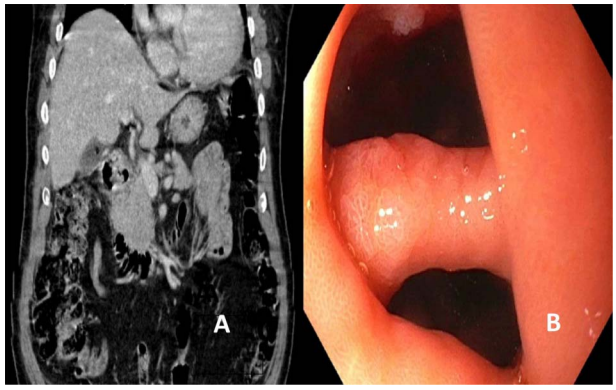
Introduction: Double pylorus also termed double-channel pylorus is an endoscopic finding that refers to the presence of a double connection between the gastric antrum and the duodenal bulb. This connection is typically established through the presence of a gastroduodenal fistula. Despite that double pylorus is reported in the literature, its incidence is extremely low and accounts for less than 0.4% of upper endoscopic findings. Herein we report the case of 74 year-old Albanian man who was found to have a double pylorus in the setting of peptic ulcer disease.
Case Description/Methods: A 74 year-old man with history of hypertension presented to the emergency room with a few week history of epigastric pain, nausea and vomiting. He denied NSAIDs intake. Vital signs were within normal range. Physical examination revealed epigastric tenderness. Laboratory tests were unremarkable. Abdominal CT scan showed inflammatory changes of the gastric antrum and proximal duodenum (panel A). Findings on upper endoscopy included erythema and edema of the gastric wall, a 7 mm cratered duodenal bulb ulcer in addition to a gastroduodenal fistula that connected the gastric antrum to the proximal duodenum consistent with a double pylorus (panel B). Routine staining of gastric biopsies identified *Helicobacter Pylori* (HP) organisms. The patient received high dose proton pump inhibitors and *Helicobacter Pylori* eradication regimen. His symptoms significantly improved and was successfully discharged home after few days of treatment initiation. He was advised to avoid Non-steroidal anti-inflammatory drugs and was scheduled for an outpatient follow-up to document eradication of HP.
Discussion: Double pylorus was first described in 1969. It is twice as common in men compared to women. It can be congenital or acquired. Congenital cases are associated with gastric duplication, heterotrophic pancreatic tissue and pancreas divisum. Acquired double pylorus is usually secondary to systemic diseases, gastric malignancy, drugs or *Helicobacter Pylori* infection that lead to the formation of a fistulous tract between the gastric antrum and the proximal duodenum. Double pylorus can be asymptomatic or manifest as gastrointestinal bleeding or abdominal pain. Treatment includes acid suppression via proton pump inhibitors or H2-Receptor antagonists. Refractory and complicated cases require advanced endoscopic or surgical interventions.



[3741] **Figure 1.** Panel A: CT scan of the abdomen showing inflammatory changes of the gastric antrum and proximal duodenum; Panel B: Upper endoscopy showing a gastroduodenal fistula connecting the gastric antrum to the proximal duodenum consistent with a double pylorus.

S3742

An Atypical Presentation of Burkitt's Lymphoma

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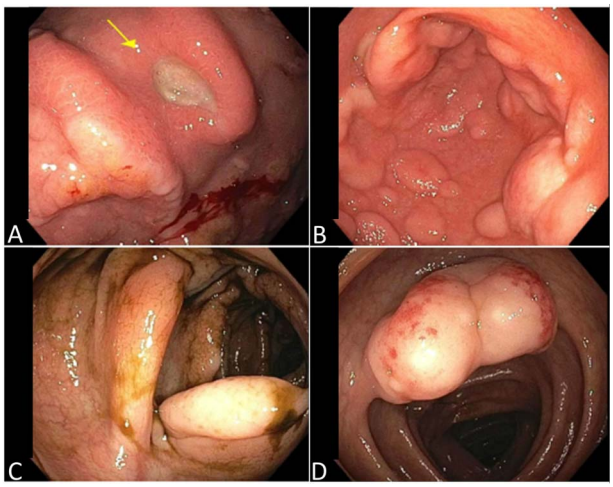
Introduction: Burkitt's lymphoma is an aggressive non-Hodgkin lymphoma, uncommon in adults and has 3 subtypes. Immunodeficiency-associated subtype is primarily linked to HIV infection accounting for 30%-50% of HIV associated lymphoma. Abdominal involvement can be found in this subtype. We present a case of an atypical presentation of Burkitt's lymphoma.
Case Description/Methods: A 38-year-old man with no significant past medical history who presented to the emergency room with nausea, vomiting, bloating, non-bloody diarrhea, unintentional weight loss of 15 lbs, fevers, chills, diaphoresis and decreased appetite for 1 month. On physical examination, there was evidence of abdominal distension with ascites and hepatomegaly, and bilateral lower extremity edema. Laboratory tests showed elevated AST of 67 U/L, ALT of 42 U/L, lactic acid of 3.7 mmol/L and LDH of 1,091 U/L. CT showed extensive periaortic, pericaval common and external iliac chain lymphadenopathy; circumferential small bowel wall thickening and associated contrast enhancement suggesting inflammation. Further workup revealed positivity for HIV sub-type B. Patient underwent EGD and colonoscopy. On EGD, a non-bleeding cratered ulcer was seen in the lesser curvature of the stomach and numerous, large, confluent papules noted on the entire stomach, bulb and second portion of the duodenum. On

colonoscopy, a 7 mm lipomatous-appearing submucosal nodule was found in the ileocecal valve, a 30 mm polypoid non-obstructing mass in the proximal transverse colon and a 20 mm polypoid lesion in the proximal transverse colon. All lesions were biopsied. (Figure-1 A,B,C,D). Biopsy results revealed composite High-grade B-Cell Lymphoma (HBCL) with MYC+ Burkitt lymphoma.
Discussion: Burkitt's lymphoma is a relatively rare malignancy in adults accounting for about 1-5% of all non-Hodgkin lymphomas in this population. Mesenteric and retroperitoneal lymph node involvement is common. Small bowel involvement may be seen on imaging as circumferential thickening, aneurysmal dilatation or as an intraluminal polyp/mass. Based on our patient's vague initial presentation, multiple differentials were considered including gastrointestinal lymphoma, neuroendocrine tumors, inflammatory bowel disease or infectious disease. A robust differential was only achieved after the finding of periaortic and pericaval lymphadenopathy which directed our focus towards lymphatic malignancy and the later discovered presence of HIV infection further supported the suspicion of Burkitt's lymphoma.



[3742] **Figure 1.** Endoscopy and Colonoscopy findings. A – Gastric ulcer in body of the stomach. B – Papules and nodules and pre-pyloric stomach. C – Polypoid lesion in transverse colon. D – Mass in transverse colon.

S3743

An Unusual Culprit for Gastric Ulceration

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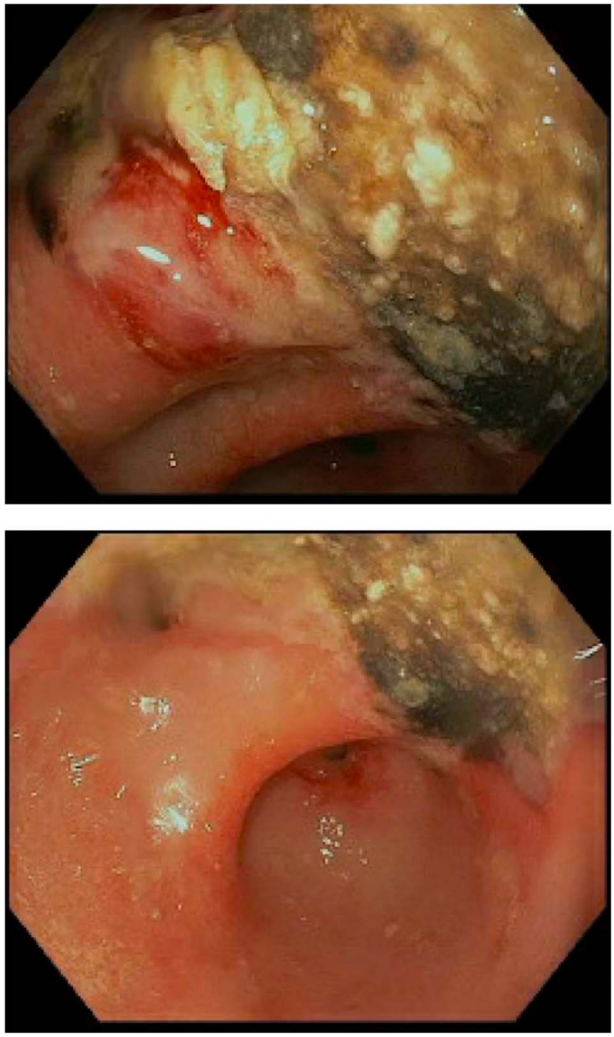
Introduction: Actinomycosis is a chronic granulomatous disease caused by an anaerobic, gram positive, filamentous bacterium. Actinomycetes are commensal oral/intestinal bacteria that can manifest with fibrosis/necrosis, abscess formation, draining sinuses and fistulas when they invade susceptible tissue. Infection commonly affects the cervicofacial region (50%), however the literature describes abdominal involvement in 20% of cases (typically localized in the appendix and ileocecum). We describe a case of gastric ulceration secondary to actinomycosis.
Case Description/Methods: A 33-year-old female with Type 1 Diabetes Mellitus status post kidney-pancreas transplant on immunosuppression presents with one month of progressive, diffuse abdominal pain. Initial evaluation revealed acute renal failure of unclear etiology (creatinine of 5 from baseline of 1). Kidney biopsy revealed acute antibody mediated cellular rejection with donor specific antibodies. Methylprednisolone, PLEX and thymoglobulin were started. The patient's ongoing rigors and abdominal pain prompted an infectious workup. Blood cultures returned with Group B Strep and Computed Tomography (CT) abdomen/pelvis without contrast showed diffuse gastric wall thickening and effacement of the gastric rugal folds. Esophagogastroduodenoscopy (EGD) revealed congested, erythematous and ulcerated mucosa in the gastric antrum. Biopsies demonstrated reactive gastropathy and purulent exudate with ample Actinomyces colonies and rare CMV viral inclusions. Of note, there was an undetectable serum CMV PCR during the same admit. The patient was discharged on IV Ampicillin (6 weeks) and oral Valganciclovir (21-day course). She then transitioned to oral amoxicillin for an additional 12 months. At 8-week follow-up endoscopy, a non- bleeding gastric ulcer was seen with biopsies indicating moderate active chronic gastritis and reactive epithelial changes, but without Actinomyces or CMV. (Figure)
Discussion: Actinomycosis is difficult to diagnose by virtue of its rarity and indolent course. A palpable mass, sinus tract, or fistula may be present; but more uncommon gastrointestinal manifestations, such as gastric ulcerations, may be found. Radiographic imaging is non-specific, though CT may be useful localizing the extent of disease burden. Biopsy is the gold standard for diagnosis and should be pursued, especially in immunosuppressed patients.



[3743] **Figure 1.** Images demonstrating severe mucosal changes characterized by congestion, erythema, granularity and ulceration at the incisura and gastric antrum. White nodular areas and signs of possible necrosis.

S3744

An Unusual Presentation of a Large Gastrointestinal Stromal Tumor (GIST)

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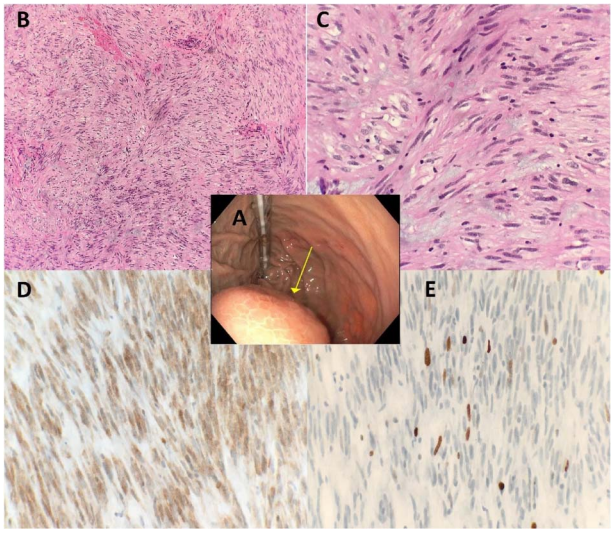
The Brooklyn Hospital Center, Brooklyn, NY.

Introduction: Gastrointestinal stromal tumors (GISTs), although the most common mesenchymal neoplasms of the digestive tract, are relatively rare primary GI cancers. They originate from the interstitial cells of Cajal, which are cells of the intestinal autonomic nervous system. They function as electrical pacemakers, controlling motility as well as regulating peristalsis. Individuals with GISTs can present with overt or occult GI bleeding, but, more frequently, they present with nonspecific symptoms, such as vague abdominal pain or discomfort, early satiety, or bloating. Other individuals may be asymptomatic, and the GISTs are detected incidentally during an endoscopic study (where they usually appear as subepithelial masses) or on cross-sectional imaging studies performed for a different reason. Here, we present an interesting case of an elderly woman discovered to have a large GIST.
Case Description/Methods: A 69 y/o F, with PMH of b/l unprovoked pulmonary embolism (submassive with evidence of right heart strain) in 8/2017 on anticoagulation (Warfarin), HTN, and DM, underwent EGD and EUS a few years prior that showed a 4 cm umbilicated, firm, round mass along the posterior wall/greater curve of the stomach. The pathology from FNB at the time was suggestive of gastrointestinal stromal tumor (GIST) (+ C-kit, CD117). She subsequently failed to follow up with GI. Recent CT A/P then showed a small hiatal hernia, and a filling defect in the stomach, 3.2x3.1cm, arising from the lesser curvature immediately distal to the GEJ. The patient underwent EGD on 1/12/2022 for intraoperative evaluation of GIST tumor (Fig 1A), followed by robotic assisted surgical wedge resection of the gastric tumor by the surgical team (Fig 1B-E).
Discussion: GISTs are identified primarily by the expression of the KIT protein and often carry activating mutations in either the KIT or the platelet-derived growth factor receptor alpha (PDGFRA) genes.[1,3] These neoplasms are frequently discovered in the stomach (40 to 60 percent) and small intestine (30 to 35 percent).[4] However, they can arise in any part of the digestive tract. Resectable GISTs can be completely or almost completely removed by surgery.



[3744] **Figure 1.** A) Gastric body: Submucosal mass. - A prior placed naso-gastric tube was found in the esophagus. - A 3-4 cm submucosal GIST tumor (from prior EUS guided FNA/FNB in 2018) was seen on the posterior wall of the proximal body, approximately 3 cm from the GE junction. B) Hematoxylin and eosin (H&E) stain, low power. C) Hematoxylin and eosin (H&E) stain, high power. D) CKit. E) Ki-67.

S3745

An Uncommon Case of Helicobacter pylori-Negative Gastric MALT Lymphoma

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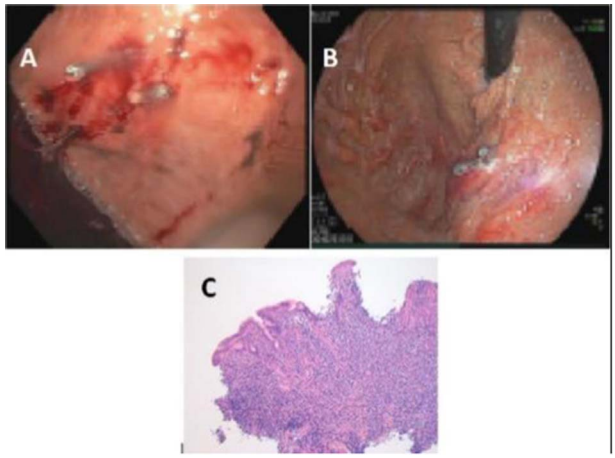
Introduction: Gastric MALT (mucosa-associated lymphoid tissue) lymphoma is a type of non-Hodgkin's lymphoma with concomitant *H. pylori* infection. Approximately 5-10% of patients are not. Recent studies on *H. pylori*-negative gastric MALT lymphomas have suggested that *H. pylori* eradication therapy is effective in a proportion of patients with this disease and could even be considered a first-line treatment. Here, we present this uncommon and unique case.
Case Description/Methods: A 58-year-old man, with PMH of prostate cancer and DVT not on anticoagulation, was initially admitted for seizures and altered mental status under the impression of bacterial meningitis. He had an upper GI bleed during the same hospitalization, and an inpatient upper endoscopy showed a Forrest 1a ulcer in the gastric fundus s/p clipping (Fig 1A). A repeat upper endoscopy three months later showed gastric erythema and a 6 mm non-bleeding healing gastric ulcer in the fundus (Fig 1B). The pathology report of antrum biopsy showed fundic and transitional zone gastric mucosa, mild chronic gastritis without intestinal metaplasia or dysplasia, and the presence of a few atypical lymphocytes. The body biopsy showed fundic/body type gastric mucosa, and findings were compatible with low-grade B-cell lymphoma, favoring extranodal marginal zone lymphoma of MALT lymphoma (Fig 1C). The patient was empirically treated for *H. pylori* with Bismuth-based quadruple therapy. The patient improved on follow-up with GI. Hematology-Oncology is currently planning for FISH for t(11;18) and/or MYD88 mutation status to assist in the differential, as the *H. pylori* strain was negative on biopsy.
Discussion: Several theories describe pathways for lymphoid proliferation in *H. pylori*-negative patients, but the exact mechanism has yet to be determined. Currently, it is deemed multifactorial. There is a high incidence of translocation (11;18)(q21;q21) in *H. pylori-negative* MALT lymphomas is seen. Using radiation therapy for patients with early-stage (Lugano I/II) gastric MALT lymphomas that are negative for *H. pylori* infection is recommended, with clinical remission rates of up to 100%. Conversely, organ-preserving therapy has no added benefit and surgical treatment is rarely pursued. Therefore, it is recommended to eliminate the presence of *H. pylori* and evaluate for this translocation. Recent studies have suggested that *H. pylori* eradication therapy is effective in some proportion of these patients and could be considered a first-line treatment.



[3745] **Figure 1.** A) Upper endoscopy image of Forrest Class 1a ulcer s/p two clips. There is a spurting gastric ulcer with spurting hemorrhage. B) Upper endoscopy of gastric erythema and a 6 mm non-bleeding healing gastric ulcer in the fundus. C) Pathology: Low power view, H&E stain, of antrum biopsy showing fundic and transitional zone gastric mucosa, mild chronic gastritis without intestinal metaplasia or dysplasia, and the presence of a few atypical lymphocytes Immunohistochemistry studies showed atypical lymphocytes CD20+, CD79a+, PAX5+, CD5-, CD10-, BCL6-, BCL2+, CD43+, CyclinD1-, BCL6, and CD10, highlighting very small, scattered, disrupted germinal centers. CD3 and CD5 highlighted numerous admixed T-cells. Ki-67 was overall low (5-10%). Kappa(ish) and Lambda(ish) stains showed that the plasma cells were kappa-restricted, and had low mitotic activity, supporting the diagnosis of marginal zone lymphoma.

S3746

An Unusual Presenting Symptom of Gastric Adenocarcinoma

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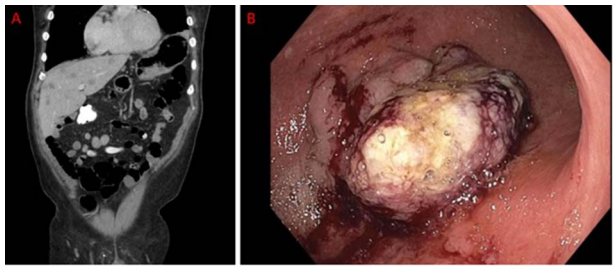
Introduction: Gastric malignancies often present with anorexia, nausea, abdominal pain, early satiety, dysphagia and weight loss. Gastrointestinal bleeding and metastatic disease can further complicate the presentation. When the underlying disease has progressed, clinicians may encounter unusual signs and symptoms such as in this rare patient case. Moreover, patients may omit to report typical symptoms, hence a high clinical suspicion should be maintained by the clinician.
Case Description/Methods: A 76-year-old male smoker, with a history of deep venous thrombosis (DVT) and extensive negative work-up for inherited hypercoagulable conditions initially presented to the hospital for another episode of DVT complicated by sub-massive pulmonary embolism (PE). He was treated with anticoagulation only (refused interventional therapy), clinically improved and was discharged to continue anticoagulation. One month later, he was re-evaluated because of a syncopal episode. Due to concerns of possible PE progression, a CTA was performed showing improved clot burden. Careful questioning also revealed that he had been losing weight for the last few months leading to CT abdominal imaging that revealed an evident irregularly shaped intraluminal gastric mass associated with innumerable hypodensities in the liver (FIGURE A). At this point an EGD was performed with biopsies of the mass detecting moderately differentiated gastric adenocarcinoma at the greater curvature (FIGURE B). He was ultimately diagnosed with stage IV gastric adenocarcinoma with metastases to the liver and bones and even though he started chemotherapy, he passed away a couple months later.
Discussion: Malignancy is an acquired risk factor leading to a hypercoagulable state, increasing the risk for PE development. Gastric malignancy, especially when advanced, is associated with PE development. It is crucial that all patients presenting with VTE without an apparent cause and no inherited conditions present, receive age-appropriate cancer screening which arguably should include imaging scans if the patient is at high risk (i.e., unintentional weight loss, tobacco use, etc.). A meticulous history and exam may reveal information that will guide further work-up. Gastrointestinal malignancy must be within the differential diagnosis and targeted questions should be asked to reveal associated symptomatology. Even though initial labs and imaging may not be suggestive, an EGD should be considered, especially for high-risk patients.



[3746] **Figure 1.** A: CT Abdomen Pelvis- coronal view B:EGD findings.