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AN UNUSUAL CASE OF ANNULAR PANCREAS PRESENTING IN AN ADULT FEMALE AS ACUTE PANCREATITIS

CASE REPORT

- A 55 year old female came to Surgery OPD with Chief Complaints of :
    - Intermittent Pain in the Upper Abdomen since 6 months

- History Of Presenting Illness :
    - Patient was apparently normal 6 months back when she developed pain in the upper abdomen
        - Insidious in onset and colicky type
        - Radiating to back
        - Aggravating by food intake and relived following vomiting .

    - She gave history of post prandial fullness.
    - Associated with occasional nausea and vomiting - vomitus containing food particles
    - H/O Loss of appetite and significant weight loss (+)

CASE REPORT

- Past history :-
  - No history of similar complaints in the past .
  - No Comorbidities.
  - No Addictions
- Family history :- Not significant

CASE REPORT - GENERAL EXAMINATION

- Patient is conscious coherent and co operative .
- Thinly built and poorly nourished – BMI : 20kg/m^2

  - Afebrile
  - PR:- 98bpm
  - BP:-110/70 mm of Hg

CASE REPORT - PER ABDOMEN EXAMINATION

- **INSPECTION**:-

  - Abdomen is scaphoid with umbilicus centrally placed and inverted.
  - Visible fullness in epigastric region.
  - All quadrants of abdomen moves equally with respiration .

CASE REPORT - PER ABDOMEN EXAMINATION

- **On Palpation :**
  - Except for mild tenderness in the epigastric region , there were no other significant findings.
  - No palpable abdominal lump
- **Auscultation :** Succussion Splash Could Be Elicited In The Epigastric Region
- **Percussion** – No Free Fluid in Abdomen

PROVISIONAL DIAGNOSIS

- Gastric Outlet Obstruction
- Acute On Chronic Pancreatitis
- Pancreatic Neoplasm ??

COURSE IN HOSPITAL

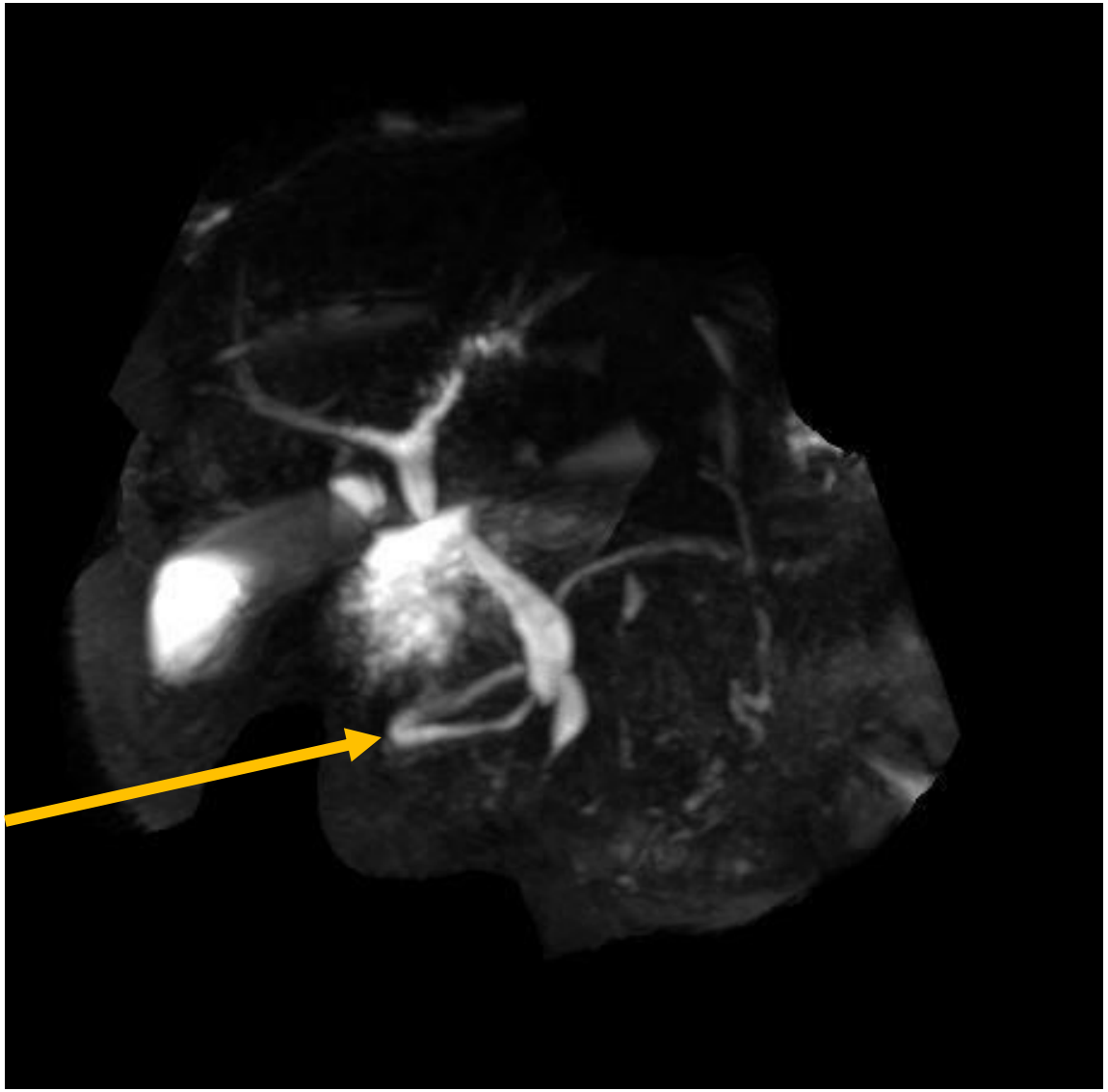
- Routine Hematological and Biochemical investigations revealed :
    - Hemoglobin : 11.2 g/dl
    - TLC : 10,200/mm^3
    - **Sr . Amylase : 1200 U/L**
    - **Sr . Lipase : 2000 U/L**
    - LFT , RFT : Within Normal Limits.
- Tumor Markers :
    - CA19.9 - 4.44 (Normal)
    - CEA – 1.92 (Normal)

COURSE IN HOSPITAL

- Patient came with an outside **CECT ABDOMEN AND PELVIS** : -
  - Mass in the head of pancreas causing gastric outlet obstruction
    ? Ca Head of Pancreas .
- **USG ABDOMEN AND PELVIS** :
  - Distended stomach with a hyperechoic mass lesion in the head of pancreas.
- **UPPER GI ENDOSCOPY WITH ENDOSCOPIC ULTRASOUND**
  - Partial luminal narrowing at the level of D2 arising as a result of extrinsic compression.

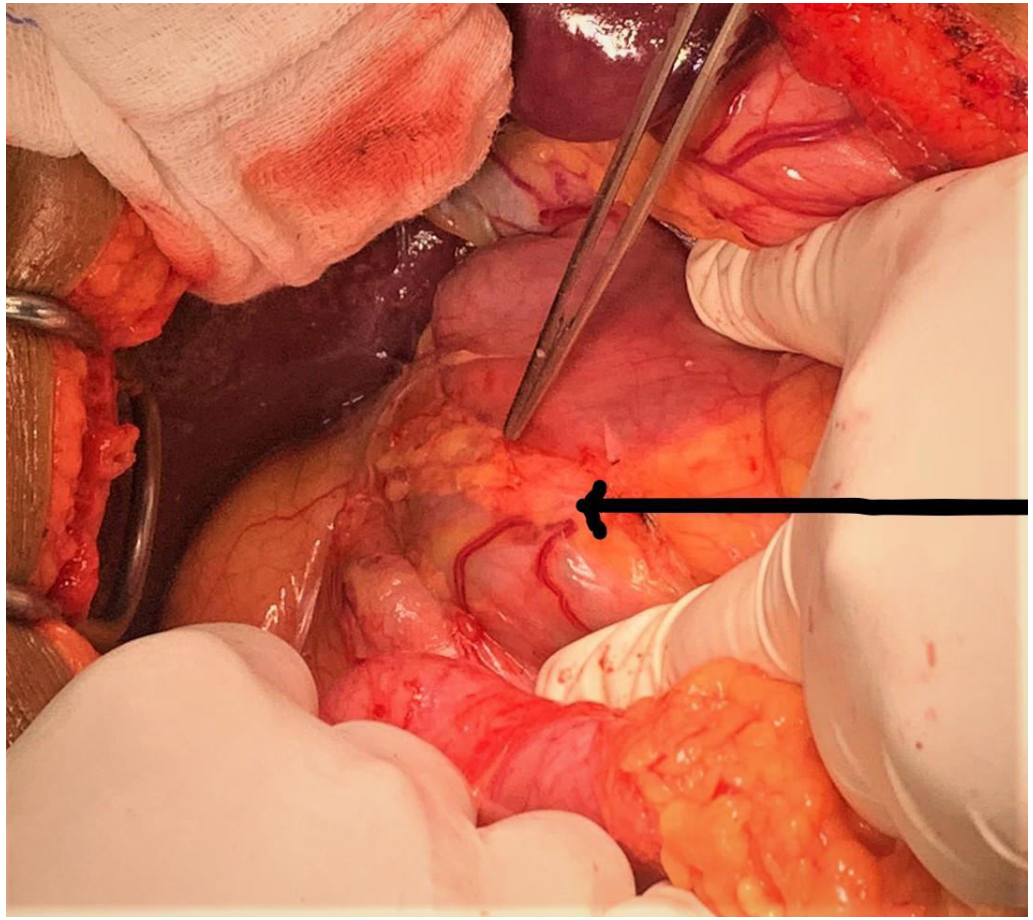
COURSE IN HOSPITAL

- **MRCP**:-
  - Thin tissue of head of pancreas is seen completely surrounding distal segment of 2nd part of the duodenum
  - Main pancreatic duct is forming a loop around the duodenum .
  - Accessory pancreatic duct joins the main pancreatic duct before joining the common bile duct – s/o ANNULAR PANCREAS



COURSE IN HOSPITAL

- The patient underwent an exploratory laparotomy :
  - A band of pancreatic tissue encircling the second part of the duodenum more than 2cm breadth resulting in proximal duodenal dilatation .
- A Retrocolic isoperistaltic posterior gastrojejunal anastomosis with jejunojejunostomy is performed .



COURSE IN HOSPITAL

- Postoperative period was uneventful and oral feeding was tolerated from the third day .
- The patient was discharged on the 10^{th} post operative day .
- On follow-up patient was asymptomatic and had acceptable weight gain .

DISCUSSION

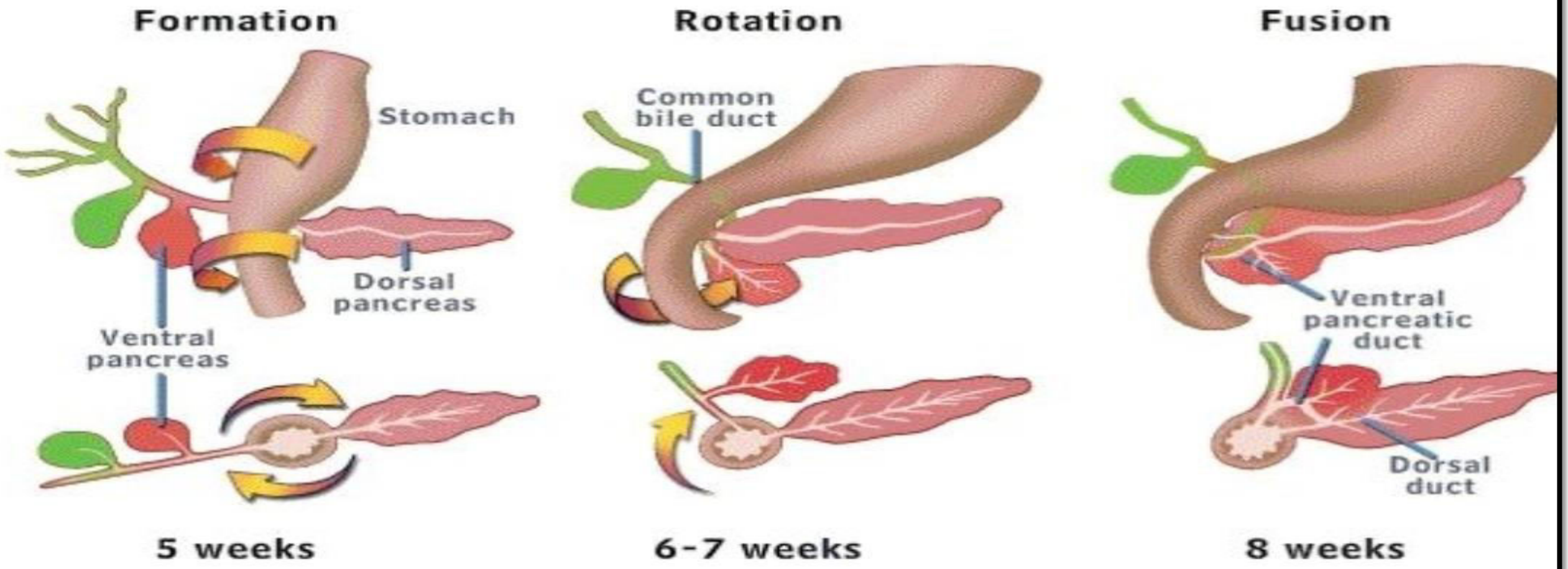
- Annular pancreas (AP) is a congenital anomaly which consists of a ring of pancreatic tissue encircling the descending portion of the duodenum.

- **This malformation once considered rare has been reported with increasing frequency in the adult population – Owing to advances and more rampant use imaging modalities like CT/MRI**

- The adult prevalence of annular pancreas is believed to be between **15 to 400 cases in 100,000 adults – As per Indian Context**

- Despite the congenital nature of the disease, **the clinical manifestations may ensue at any age.**

EMBRYOLOGICAL BASIS OF ANNULAR PANCREAS



EMBRYOLOGICAL BASIS OF ANNULAR PANCREAS

- Several theories have been proposed to explain the formation of annular pancreas.
    - **Lecco's theory** - Adhesion of the right ventral bud to the duodenal wall
    - **Baldwin's Theory** - Persistence of the left ventral bud
    - Adherence of a small portion of the left ventral bud to the duodenal wall with concomitant pancreatic tissue enveloping the duodenum during rotation

- **Yogi et al. classified Annular Pancreas in 6 types**, depending on the site of drainage of the annular duct .

- **The most common variety is type I, in which the annular duct flows directly into the main pancreatic duct.**

- It is followed in frequency by type II, where Wirsung's duct encircles the duodenum but still drains at the major papilla.

- The other 4 types are much less common

Type	Graphic representation	Opening site
I		Wirsung's duct from dorsal site
II		Wirsung's duct encircling the duodenum
III		CBD from the dorsal site
IV		CBD without communication with Wirsung's duct
V		Santorini's duct from ventral site
VI		Santorini's duct from ventral site + pancreas divisum

CBD = Common bile duct.

DISCUSSION - SYMPTOMATOLOGY

- In the pediatric population, annular pancreas is frequently found associated with other congenital anomalies such as duodenal stenosis, duodenal atresia and Down syndrome.

- In these patients the presentation most commonly consists of symptoms related to duodenal obstruction, such as vomiting, bloating, and feeding intolerance – **However the intensity of these symptoms depends on the degree of malrotation and extent of duodenal luminal compromise.**

- **In contrast the adult symptomatology shows a much wider spectrum of symptoms depending on the extent of rotation of parenchyma and resultant ductal anatomy**.

DISCUSSION - SYMPTOMATOLOGY

- Almost 2/3rd of adults remain asymptomatic throughout their lifetime.

- Adults usually present with intermittent or mild symptoms either due to :
  - **Duodenal stenosis from extrinsic constriction by encircling pancreatic parenchyma.**
  - Acute / Chronic pancreatitis – **Severity based on the ductal anatomy (MC with types I/II)**
  - Rarely , Malignancy may arise from the enclircling tissue

- **Sandesegran et. al. in a study of 40 cases of annular pancreas in adult population revealed that majority of cases were asymptomatic with only 5% cases presenting with Gastric outlet obstruction / Pancreatitis.**

- A dual-phase clinical manifestation of AP in the same patient, combining partial duodenal obstruction and abdominal pain and vomiting due to chronic pancreatitis at adult age, as occurred in the patient of the present report, is most unusual.

DISCUSSION

- **Advances in radiological imaging modalities has increased the incidence of annular pancreas in adults from 0.2% in 2000 to 2.1% in 2021 as per Sandesegran et. al.**

- A complete ring of pancreatic parenchyma is not always essential for the diagnosis of annular pancreas.

- **MRCP delineation of ductal anatomy is of paramount importance in understanding the symptomatic spectrum based on ductal variations.**

- No specific guidelines and protocols exist about management of Annular pancreas - **Treatment and operative approaches must be individualized.** ranging from conservative management of pancreatitis to operative intervention in cases with duodenal obstruction .
  (Duodeno-Duodenostomy / GastroJejunostomy)

UNIQUE POINTS IN OUR CASE

- Unusual age of presentation of Annular Pancreas.
- A dual-phase clinical manifestation of Annular Pancreas in the same patient, combining partial duodenal obstruction and abdominal pain and vomiting due to acute on chronic pancreatitis at adult age.
- Lack of clear clinical picture pointing towards the diagnosis of Annular Pancreas.

TAKE HOME MESSSAGE

Although the incidence of Annular Pancreas in adults is very low, its presence should be suspected in cases of epigastric pain with unusual presentation

THANK YOU