

## An uncommon cause of coffee ground emesis : necrotizing enteritis with pneumatosis intestinalis

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### To the Editor,

Hepatic Portal Venous Gas (HPVG) is a rare imaging finding and it used to be associated with a very high mortality rate of up to 75%, even after urgent laparotomy. In more recent decades abdominal CT and ultrasound have resulted in the detection of HPVG in more non-fatal conditions such as diverticulitis, enteritis, colovenous fistulae, gastric dilatation and after endoscopic mucosal dissection (1).

A 42-year old deaf-mute Caucasian man presented at the emergency department with coffee ground emesis. He complained that he had been suffering from anorexia for 4 consecutive days and also experienced postprandial abdominal pain. The patient was a non-smoker and had undergone a left colectomy 7 years ago for a volvulus. On presentation he was hypotensive and tachycardic. An ultrasound of the abdomen was performed and showed a dilated stomach in addition to dilated small intestinal loops. An urgent abdominal CT scan showed distinct pneumatosis intestinalis, mainly in the proximal jejunum and mesenteric free air with presence of air bubbles in the superior mesenteric vein and concurrent intrahepatic portal air without arguments for obstruction. No biliary or pancreatic abnormality was identified. (Figure 1). Because of the presence of harmful air bubbles, distinct indication of a perforation, urgent laparotomy was performed and revealed no signs of ischemia but did show pneumatosis intestinalis and enteritis. A partial resection of 20cms small intestine was performed. The patient was put on broad-spectrum antibiotics with amoxicilline - clavulanate and returned to the intensive care ward. The next day a relook laparotomy was performed and showed no further lesions, which resulted in a side-to-side anastomosis. The patient was kept on antibiotics for 10 days and left the hospital in good health 8 days after the operation.

The pathologist confirmed that there were no signs of transmural ischemia. There were no vascular disorders that could have induced ischemia (embolism, vasculitis or amyloid). The jejunum showed different mucosal cracks and there was pronounced pneumatosis intestinalis with bleeding mucosa as characteristic of enteritis (Figure 2).

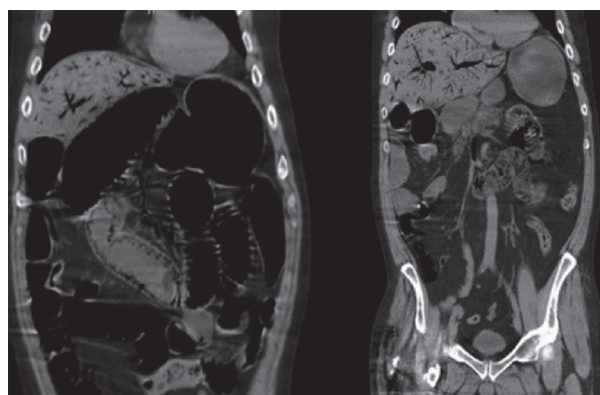


Fig 1. — Abdominal-CT imaging showing pneumatosis intestinalis with presence of air bubbles in the superior mesenteric vein and concurrent intrahepatic portal air.

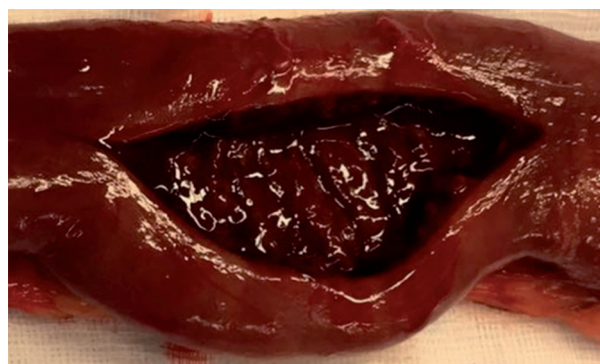


Fig 2. — Peroperative findings showed an image of enteritis without signs of ischemia.

Necrotizing enteritis is a rare condition, it occurs when intraluminal gas produced by gut bacteria enters the portal venous circulation (2). Most often it is a bacterial infection caused by the beta toxins of *Clostridium Perfringens* type C. It was first described after World

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Submission date : 29/09/2017  
Acceptance date : 01/12/2017

War II in Northern Germany among previously starved children and adult who ate large amounts of inadequately cooked meat. At that time the disease was called 'Darmbrand' because of the resistance of the spores. The beta toxins are normally destroyed by proteolytic enzymes. In patients who have severe protein malnutrition or persons who are instilled with naturally occurring protease inhibitors such as soybeans, necrotic lesions can develop (3).

HPVG and pneumatosis intestinalis are radiological findings and they do not necessarily indicate a severe underlying pathology. The prognosis is related to the pathology itself and is not influenced by the presence of HPVG. HPVG on itself is not a surgical indication and does not always indicate a catastrophic intra-abdominal event. Indications for immediate surgery include signs of intestinal necrosis, peritonitis and free air on plain

Rx. In asymptomatic patients with radiographic signs of pneumatosis intestinalis but no concomitant signs of bowel obstruction or free peritoneal air, supportive therapy with antibiotics can be an option (4-5).

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