MERCY HEALTH
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Medical Education

Chronic Mesenteric Ischemia Causing Chronic Pneumatosis Intestinalis with Pneumoperitoneum

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Introduction

- Pneumatosis intestinalis (PI) is a condition in which gas is entrapped in the intestinal wall.
- In the context of abdominal pain and pneumoperitoneum, PI may reflect an intrabdominal catastrophe; however, there are other, more benign causes.
- We present a rare case of persistent PI with pneumoperitoneum secondary to chronic mesenteric ischemia.

Patient Presentation

Patient: 86-year-old female	
Medical History	- Hyperlipidemia, coronary artery disease , peripheral vascular disease - Denied history of tobacco use
Initial presentation	• Acute exacerbation of chronic abdominal pain. • Pain was worsened by eating and physical exertion. • On physical exam she was hemodynamically stable and nontoxic appearing. Her abdomen was distended with generalized tenderness; peritoneal signs were absent. • Her lactic acid was within normal limits; other laboratory work-up was unremarkable.

Patient Course

- After a discussion with general surgery, the patient elected conservative management and was discharged with hospice care.
- Unexpectedly, her condition remained stable; she graduated from hospice and followed with her primary care provider for the next eight years.
- CT scans at three and six years after her initial presentation showed stable, persistent dilated small bowel with PI and pneumoperitoneum.

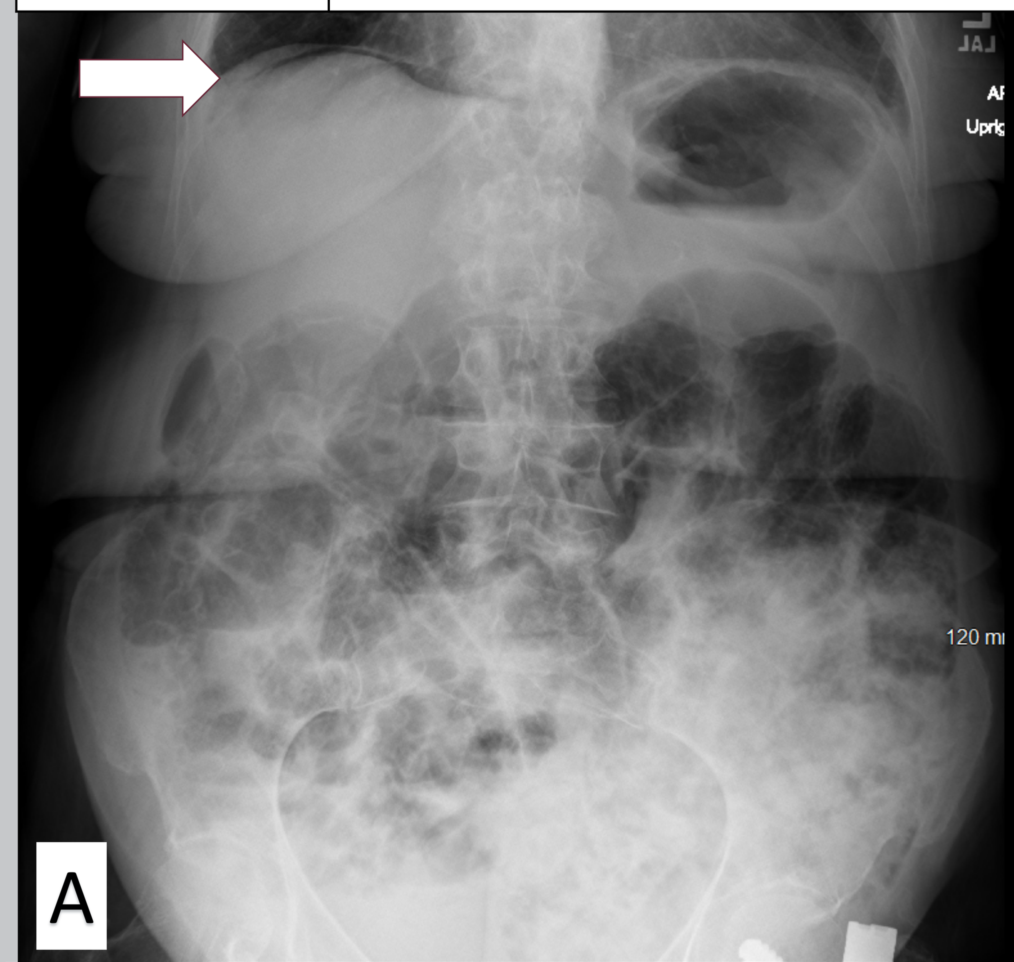
Management of Disease

- She was placed on cilostazol for chronic mesenteric ischemia.
- Interventional radiology determined endovascular revascularization would not be feasible given the extent of disease.
- Her abdominal pain was improved with the aversion of fibrous foods, fatty foods, and meats.
- When pain and bloating persisted, she would make herself nil per os until symptoms resolved.

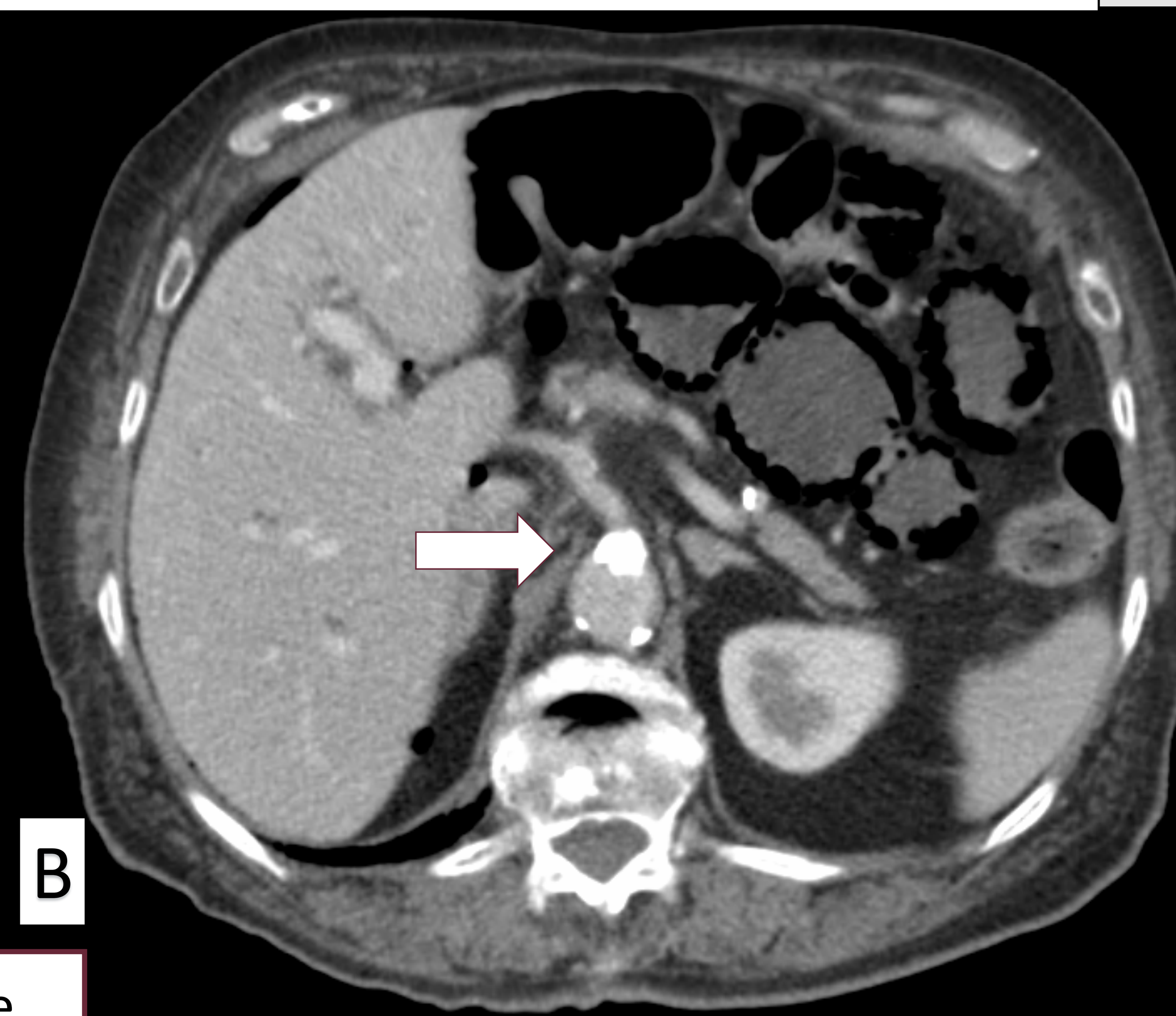
Discussion

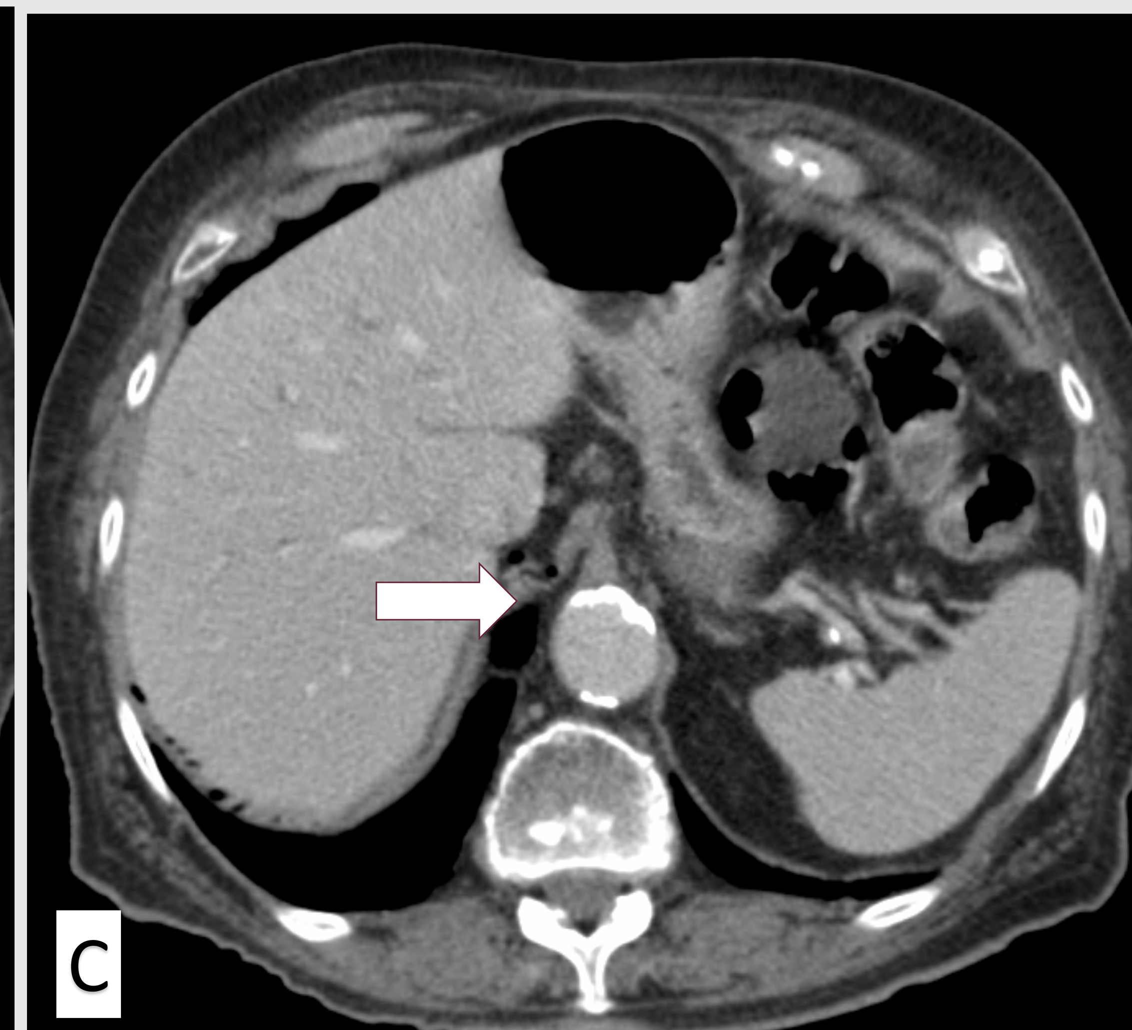
- PI with pneumoperitoneum is associated with gastrointestinal disease requiring emergent surgery.
- Initially, these alarming findings were concerning for acute mesenteric ischemia with bowel necrosis and perforation.
- However, the stability of her symptoms and radiographic findings indicated a severe case of chronic mesenteric ischemia.
- This case was unique given the profundity of these findings.
- This is an important reminder that PI with pneumoperitoneum is a nonspecific radiographic sign requiring careful clinical interpretation.

Imaging

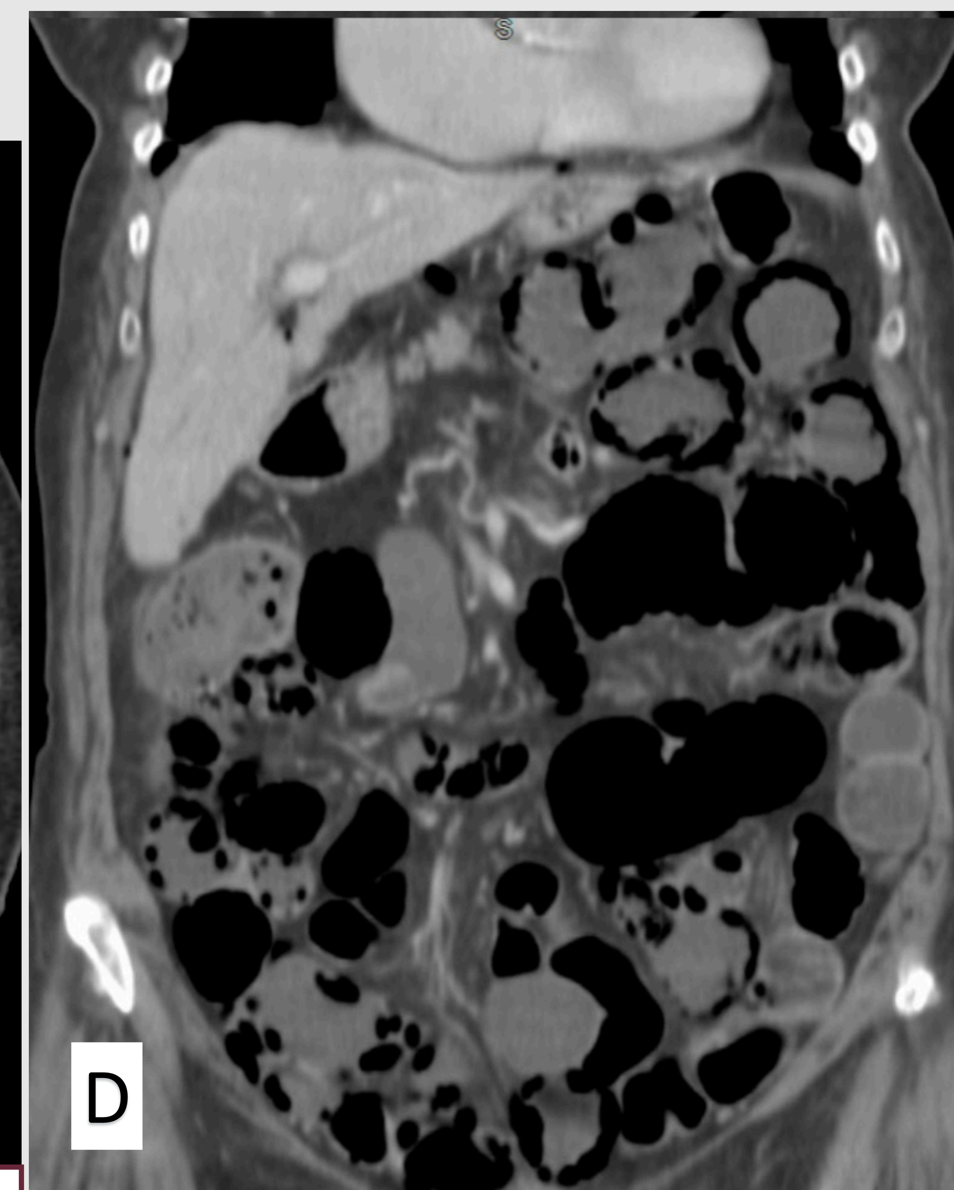


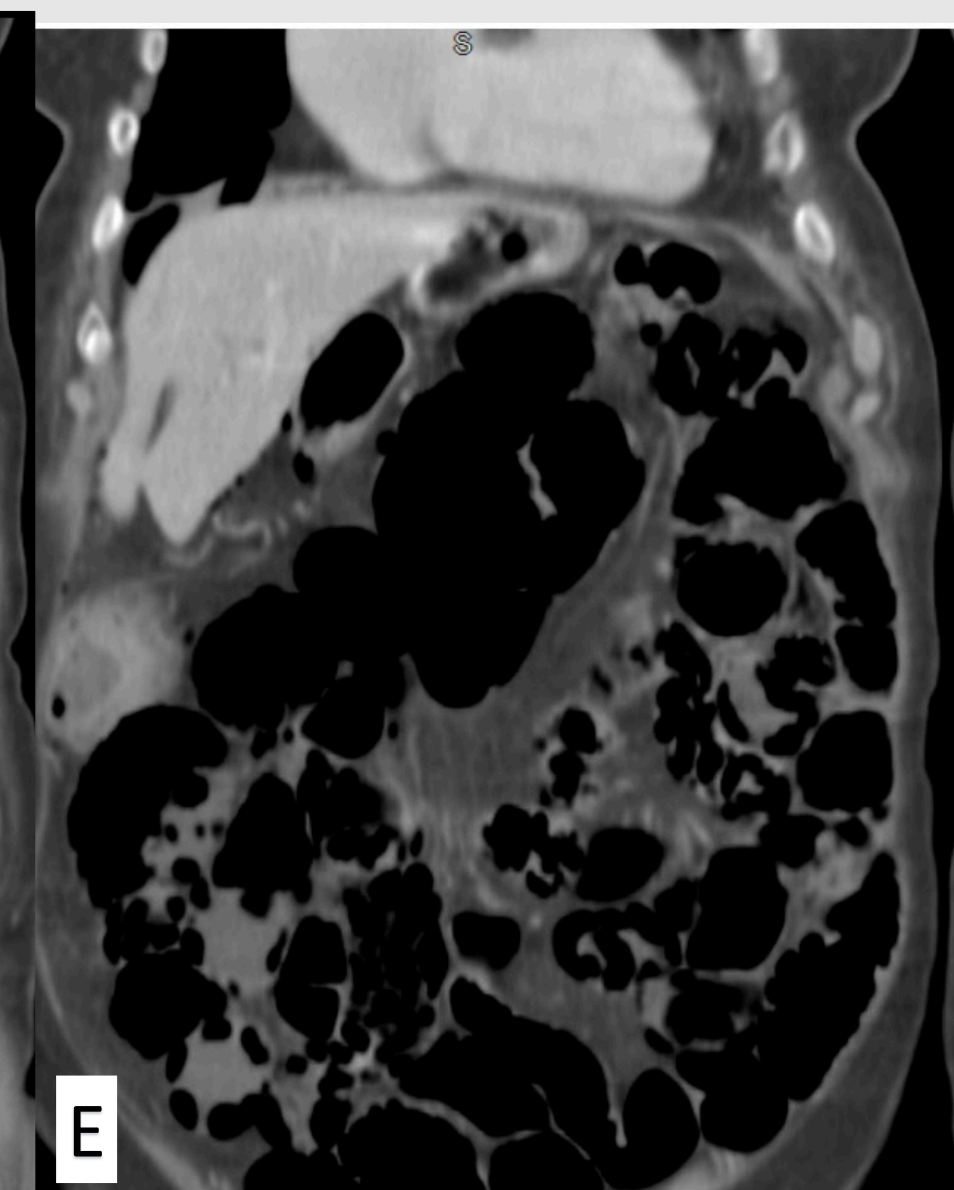
(A) CXR with a linear lucency between the diaphragm and the liver concerning for free intraperitoneal air in addition to diffuse prominence of the colon and small bowel





(B,C) CT abdomen and pelvis with contrast revealed calcified atheromatous plaque within the abdominal aorta at the origins of the celiac artery (B) and the superior mesenteric artery (C)





(D,E) Extensive PI was seen throughout multiple loops of dilated small bowel with pneumoperitoneum.