Incidental Finding of Pneumatosis Cystoides Intestinalis: A Unique Case Report

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Purpose

The purpose of this abstract is to present an interesting and unique case involving an incidental finding of pneumatosis cystoides intestinalis (PCI). PCI is a rare condition in which gaseous cysts that contain hydrogen, nitrogen and carbon dioxide are located in the subserosal and submucosal layers of the bowel. The incidence of PCI is estimated to occur in approximately 0.03% of the population [1,2].

Etiology

The exact etiology is unknown, but several theories have been proposed as to what causes PCI. The theories include the mechanical theory, bacterial theory and the respiratory theory, none of which can fully account for the pathology of PCI. The mechanical theory proposes that due to an increase in intraluminal pressure, which may be secondary to bowel obstruction or ischemic bowel disease, gas is pushed through mucosal defects to create the intramural cysts [Wu]. According to the bacterial theory, gas-forming bacteria enter the submucosal area and are responsible for producing these cysts [1]. The respiratory theory states that rupture of the alveoli seen commonly in lung disease leads to pneumomediastinum that can then traverse the vasculature into the intestinal wall [1].

Results

61-year-old male with liver cirrhosis due to hepatitis C status-post orthotopic liver transplantation 2011 and chronic abdominal pain. He was referred to the radiology department for a barium enema for further evaluation after a recent incomplete screening colonoscopy that was terminated at the transverse colon. The procedure report noted severe submucosal dilation of the distal transverse colon and descending colon, raising suspicion for stricture or colonic varices. Recent CT showed multiple cystic lucencies throughout the transverse colon.

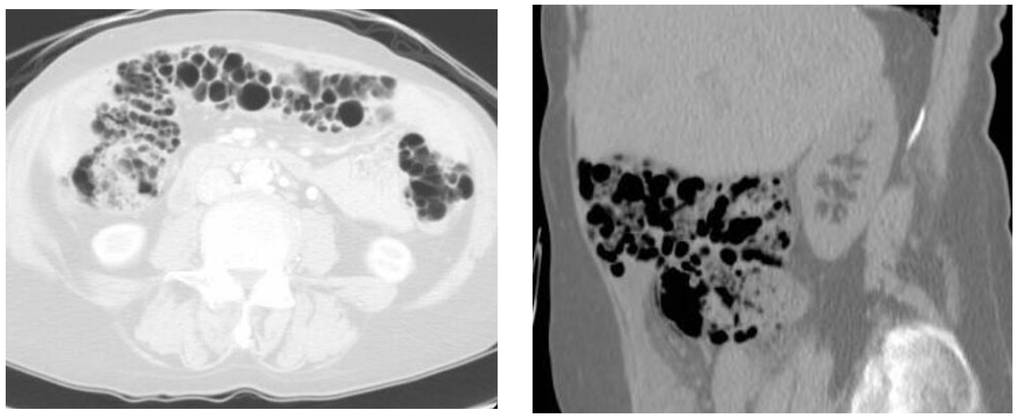

Figure 1: Axial (left) and sagittal (right) images from a contrast-enhanced CT demonstrate cystic lucencies throughout the transverse colon.

Barium enema under fluoroscopic guidance demonstrated cystic lucencies within the transverse and proximal descending colon with no other abnormalities.

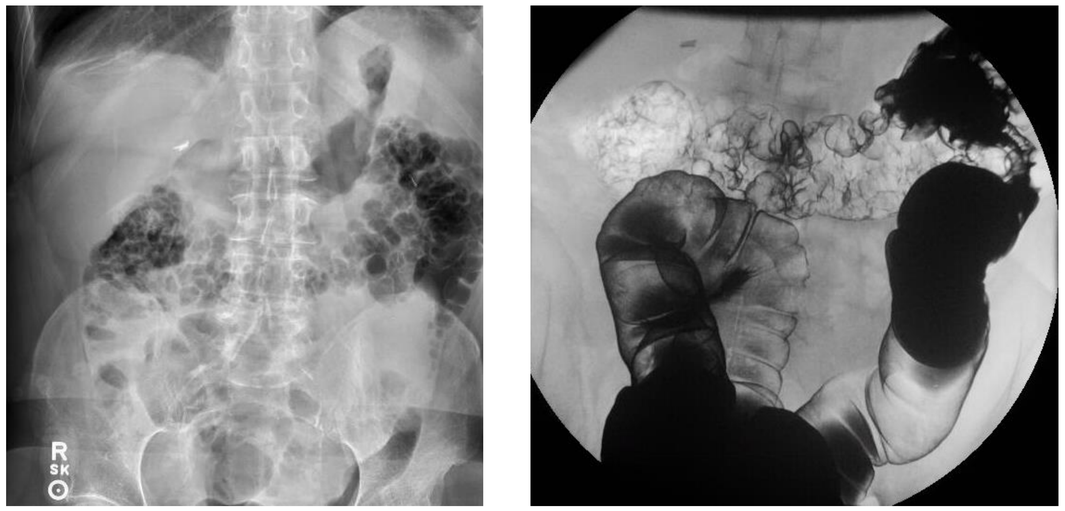

Figure 2: Scout image (left) and fluoroscopic image (right) demonstrate cystic lucencies within the transverse and proximal descending colon.

Management

Treatment of PCI depends greatly on the etiology. Most cases are managed conservatively with high flow oxygen and hyperbaric therapy, as is the case with our patient. Surgery is an option when medical management fails or when the etiology is due to conditions such as obstruction or bowel ischemia [1,2].

Conclusion

PCI is a rare condition in which there are air-filled cysts in the bowel wall and mesentery. This is most often a benign condition, however it has the potential to be life-threatening. Treatment of PCI ranges from simply supportive care to surgery. The recommended imaging tool for suspected PCI is CT, however fluoroscopic studies can be helpful as well.

References

1. Wu LL, Yang YS, Dou Y, Liu QS. A systematic analysis of pneumatosis cystoides intestinalis. World J Gastroenterol. 2013;19(30):4973–78.

2. Rathi C, Pipaliya N, Poddar P, Pandey V, Ingle M, Sawant P, et al. A rare case of hypermobile mesentery with segmental small bowel pneumatosis cystoides intestinalis. Intest Res. 2015;13(4):346–49.