A Case of Jejunal Diverticulitis with Pneumatosis Mimicking Perforation

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Background

- Small bowel diverticulosis is a rare entity, with a reported prevalence of 0.3-4.5% (1). Most diverticula are asymptomatic and are typically diagnosed incidentally. Complications such as diverticulitis, perforation, obstruction, abscess formation, or hemorrhage occur in 20% of afflicted patients, with jejunoileal diverticula more likely to perforate and develop abscesses (2).
- The optimal treatment for jejunoileal diverticulitis is still debated. Open surgical resection has historically been the standard of care, though conservative management have proven effective in cases (3). There are significant diagnostic challenges in identifying perforated diverticulitis. This report presents a case of jejunal diverticulitis with suspected perforation, which was successfully managed surgically.

Case

- A 54-year-old male with a past medical history of anxiety presented to the emergency department with one day of constant, sharp, periumbilical abdominal pain, accompanied by fever, chills, and bloating. On arrival, the patient was tachycardic with a white blood cell count of 17.26 × 10^3/μL and a lactate level of 3.2 mmol/L. On physical examination, there was periumbilical tenderness without signs of rebound or guarding.
- A contrast-enhanced CT scan of the abdomen and pelvis revealed acute inflammation around a small bowel diverticulum in the central abdomen, with evidence of free air suggestive of a perforation (Figure 1).
- Patient underwent an exploratory laparotomy. A 3 cm segment of inflamed and dilated jejunum was identified consistent with diverticulitis (Figure 2). No gross perforation was observed, but surrounding pneumatosis was evident. Approximately 5 cm of the affected small bowel was resected and a side-to-side, two-layer, hand-sewn anastomosis was performed. The patient tolerated the procedure well and was discharged on postoperative day 7 in stable condition after resolved supplemental oxygen needs.
- Pathological analysis of the resected specimen revealed two diverticuli, one of which was inflamed and perforated into the mesenteric adipose tissue with acute inflammation and small abscess cavity, consistent with diverticulitis and contained perforation. Resection margins were not involved with the inflammatory process and four lymph nodes identified within the specimen were benign.

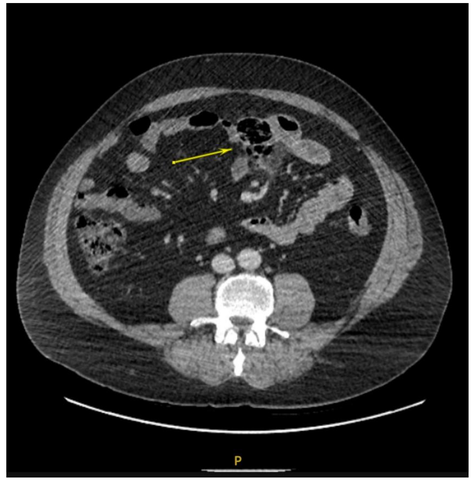


Figure 1 CT findings of small bowel diverticulitis with surrounding free air

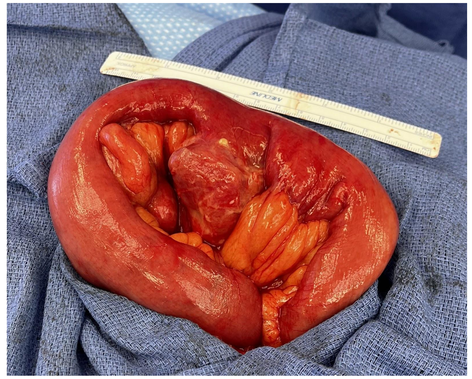


Figure 2 Intraoperative image of small bowel diverticulitis

Discussion

- Small bowel diverticula, excluding Meckel's, are rare with complications such as diverticulitis and perforation even less common. While the exact etiology remains unclear, its presentation poses significant diagnostic challenges.
- The diagnosis of small bowel diverticulitis, particularly in the presence of pneumatosis, can be difficult. Pneumatosis can often mimic the appearance of free air on CT imaging, leading to a misdiagnosis of perforation. Radiological findings alone may not always be definitive, as evidenced by studies suggesting that CT scans can fail to distinguish between true free air and pneumatosis (4). This underscores the importance of integrating clinical findings, such as the patient's hemodynamic status and laboratory results when deciding on surgical intervention.
- Management of small bowel diverticulitis varies depending on the clinical presentation. Historically, surgical intervention was the standard treatment, but more recent reports suggest that non-operative management can be effective in select cases, especially when patients do not exhibit signs of generalized peritonitis or hemodynamic instability (5)

Conclusion

- In this case, pneumatosis of the small bowel diverticulum and a contained perforation into the mesentery was confused for localized pneumoperitoneum on imaging. The patient did not have a frank perforation. Conservative management could have been considered. This case illustrates the necessity for careful imaging interpretation and individualized treatment strategies in managing small bowel diverticulitis.

References

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