Bad Things Happen In Threes: A Case Series of Perforated Small Bowel Diverticula

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Background

- Small bowel (SB) diverticulitis is a rare, atypical cause of abdominal pain
- SB diverticula occur most frequently the duodenum followed by jejunum and the ileum[3]
- Sequelae can mirror colonic diverticulitis
- The optimal management of SB diverticulitis remains unclear
- Often treated with surgical intervention [4] but reports exist of successful non-operative management
- We present three back-to-back cases of perforated SB diverticulitis in one month that were all surgically managed

Current Literature

Systematic Review[2]
- 12 studies with total of 527 patients
- 23% of cases were perforated
- Surgery utilized in 48.4% of patients (86% open, 4% laparoscopic)

Imaging Review [1,3]
- In patients with abdominal pain, CT with IV contrast is imaging of choice. No change in diagnostics with addition of oral contrast in one review.
- Extraluminal gas seen in 30% of patients
- Asymmetric small bowel wall thickness adjacent to diverticulum
- Fat stranding, abscesses or fluid collections were also common

Other Clinical Findings[4]
- Physical exam
- Laboratory values can often be normal, however, a leukocytosis may be present

Objective

Our objective was to present management strategies for cases of small bowel diverticulitis and highlight the need for more definitive management guidelines.

Cases

Case A

A 46-year-old male presented with one-day of abdominal pain, non-bloody diarrhea, and chills. Laboratory evaluation revealed a leukocytosis of 14.9 x 10^9/L. Computed tomography (CT) demonstrated jejunal diverticulum with concern for perforation. Broad spectrum antibiotics were initiated and the patient was taken for exploratory laparotomy and small bowel resection. The area of the diverticula was 20 cm distal to the ligament of Treitz. Pathology demonstrated ruptured jejunal diverticulum.

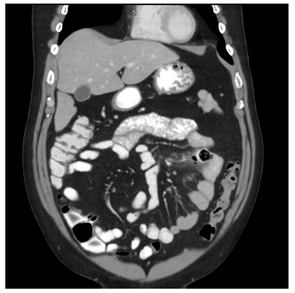


Figure 1. CT abdomen/pelvis with IV and oral contrast demonstrating jejunal diverticulum with thick-walled small bowel, extraluminal air, and mesenteric fat stranding

Case B

A 78-year-old female presented with a one-day history of acute abdominal pain worsening over several hours. Evaluation showed normal white blood cell count, elevated BUN and creatinine, and acidemia with bicarbonate of 16 mEq/L. CT revealed mesenteric gas concerning for perforation. Exploratory laparotomy and resection of small bowel was performed. An area of perforation was visible 60 cm from the ligament of Treitz. Pathology demonstrated diverticular abscess and transmural perforation.



Figure 2. Segment of resected jejunum with multiple diverticula along the mesenteric border

Case C

A 78-year-old female with stage III CKD presented with severe abdominal pain for several days associated with nausea and fatigue. Evaluation revealed leukocytosis (20 x 10^9/L) and acidemia (bicarbonate 17 mEq/L). CT was concerning for perforated small bowel diverticulum with air and abscess. Exploratory laparotomy and small bowel resection was performed. The area of perforation and mesenteric thickening was located 30 cm proximal to the terminal ileum.

Management and Discussion

Conservative management[3]
- May be indicated in contained perforations and patients who are clinically stable
- No standardized regimen; typically based off recommendations for colonic diverticulitis
- Non-operative management can include bowel rest, nasogastric tube suction, broad spectrum antibiotics and TPN.
- May require percutaneous drainage of any abscesses.

Surgical management[3]
- Standard management of perforation or acute abdomen with segmental resection of affected bowel and primary anastomosis
- Excision of the diverticulum without small bowel resection thought to lead to higher complication rates.
- Laparotomy more common than laparoscopy in case reports

Conclusion:
We report three separate presentations of perforated small bowel diverticulitis within one month. For such a rare clinical phenomenon, we found it surprising it occurred not once nor twice, but thrice within this short period of time. Each patient was managed with upfront surgery and recovered well. It is unclear if they could have recovered with non-operative management, as only a few case reports have described. Despite our brief uptick in experience, it is unlikely this represents a broader increase in incidence that would yield the potential for randomized control trials. Until more data arises, perhaps through a national collaborative database, we recommend thoughtful patient selection and counseling in the treatment of small bowel diverticulitis.

References

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