

CASE REPORT

Perforated Jejunal Diverticulitis: a rare cause of acute abdominal pain

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Abstract

It is imperative for surgeons to have a heightened awareness of complications of jejunal diverticular disease so that they can act quickly and contribute to a successful clinical outcome for their patients.

KEY WORDS

jejunal diverticulitis, perforation, surgery

1 | INTRODUCTION

Jejunal diverticular disease is a rare clinical entity difficult to diagnose. While most cases remain asymptomatic, patients may develop complications including diverticulitis, and in rare cases perforation. We report a case of a man who presented with acute abdominal pain and found to have jejunal diverticulitis complicated by perforation.

Jejunal diverticulitis is a very rare condition with a clinical incidence ranging from 0.06% to 1.3%.¹ It is much less common than colonic diverticular disease and usually seen in the sixth and seventh decades.² Its etiology is unknown. The disease is often asymptomatic and diagnosed incidentally on radiographic imaging. In about 10–30% of the patients, it may manifest with unspecific clinical symptoms and develop serious complications, such as hemorrhage, intussusception, small bowel obstruction, or perforation. Such complications must be promptly diagnosed to reduce the risk of morbidity and mortality.³

Owing to the rarity of jejunal diverticulitis, few studies have been published, and there are no known guidelines for treatment. The appropriate approach depends on the patient's symptoms or complications that develop.

2 | CASE REPORT

A 52-year old man, with an unremarkable medical history, presented to the emergency department complaining of two days of mild to moderately intense abdominal pain and vomiting.

On clinical examination, the patient was febrile (T = 38.2°C), and the abdomen was tender around the periumbilical and hypogastric quadrant with associating guarding but was negative for rebound tenderness. Laboratory investigations revealed leukocytosis (WBC count 14,109/L) and high C-reactive protein (CRP 139 mg/L).

An abdominal computed tomography (CT) scan was performed and showed a jejunal diverticulum with surrounding inflammatory changes in the mesenteric fat consistent with acute uncomplicated jejunal diverticulitis (Figure 1). No evidence of any free air seen on CT imaging was suggestive of perforation.

The patient was treated initially with bowel rest and broad-spectrum intravenous antibiotics. Three days later, a sudden worsening of the preexisting pain was observed and physical examination revealed a distended abdomen with signs of peritoneal irritation. The diagnosis of jejunal diverticulitis complicated with perforation was then made. The patient

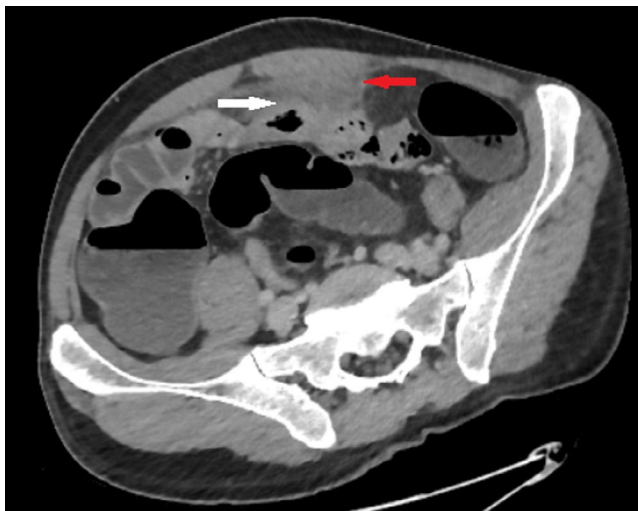


FIGURE 1 CT scan showing a jejunal diverticulum (white arrow) with surrounding inflammatory changes in the mesenteric fat (red arrow)

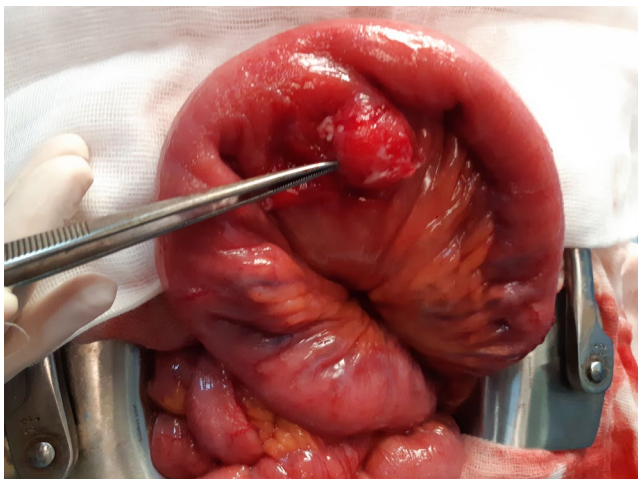


FIGURE 2 Intraoperative findings. Perforated diverticulum arising at the mesenteric border of the jejunum

underwent a midline laparotomy. It revealed a purulent fluid in-between jejunum and transverse colon with a 3-cm jejunal diverticula located in the mesenteric border, 70 cm from the Treitz ligament (Figure 2). The diverticulum was inflamed and perforated. The adjacent mesentery was inflamed and thickened; the bowel lumen remained open. A 10-cm jejunal resection and a functional side-to-side stapled anastomosis was carried out. Histopathology of the resected specimen confirmed jejunal diverticulitis with perforation of the mucosa and peridiverticular abscess.

3 | DISCUSSION

Jejunal diverticula are the least common type of small bowel diverticula (SBD).⁴ They are usually multiple and

predominantly localized to the proximal jejunum, followed by the distal jejunum. Duodenal diverticula are approximately five times more common than jejunoileal diverticula.⁵

The etiopathogenesis of jejunal diverticulitis is unclear, although the current hypothesis focuses on abnormalities in the smooth muscle or myenteric plexus, intestinal dyskinesia, and on high intraluminal pressures.⁶

Due to the variable and non-specific clinical presentation, the diagnosis of jejunal diverticula is often difficult and delayed. Most patients with jejunal diverticula are often asymptomatic; however, 10 to 30% of patients may develop acute complications such as infection, bowel obstruction, volvulus, bleeding, and perforation.⁷ The most serious complications in SBD are gangrene and perforation with a high mortality level, usually caused by a delayed diagnosis and an advanced patient age.⁸

The typical clinical presentation of jejunal diverticula is intermittent abdominal pain, accompanied by flatulence, diarrhea, or constipation. Importantly, symptoms may mimic acute appendicitis with pain localized in the right iliac fossa, in cases of distal ileal diverticulitis.⁹

Laboratory findings are also non-specific. Leukocytosis and elevated inflammatory markers, such as C-reactive protein, are the most common abnormalities in the presence of jejunal diverticulitis.⁴

Plain radiography of the abdomen has a limited place in the positive diagnosis of jejunal diverticulitis. It can show pneumoperitoneum in case of perforation.⁶ Similarly, abdominal ultrasonography has a low sensitivity due to the interposition of surrounding bowel gas.⁶

Abdominal contrast-enhanced computed tomography is the imaging investigation of choice due to its availability, rapidity, and high diagnostic accuracy.¹⁰ Findings of SBD involve the presence of rounded duodenal or jejunoileal outpouchings, which can contain air, simple fluid, or enteric contrast.⁵ Oftentimes, they have a barely discernable, smooth wall and are seen in profile.

Asymmetric wall thickening adjacent to a diverticulum associated with peridiverticular mesenteric fat stranding is characteristic of acute diverticulitis.⁵

Asymptomatic small bowel diverticulosis requires no treatment.^{5,10} Conservative management can be attempted in cases with local mild inflammation and in the absence of other complications such as hemorrhage, obstruction, and perforation or abscess. It involves bowel rest, nasogastric suction, parenteral nutrition, IV antibiotics, and percutaneous peridiverticular abscess drainage. In case of failure of the conservative approach or generalized peritonitis, surgical management should be undertaken.⁶

Surgery is based on resection with a primary anastomosis either with or without preoperative antibiotic therapy.^{7,11} The elective excision of the diverticulum without segmental bowel resection was not widely accepted because of the higher rate of complications.⁴

Surgical treatment of jejunal diverticulitis has, usually, good outcomes. The mortality rate ranges from zero to 5% and reaches 40% in case of perforation. This high mortality level is caused by factors like advanced age, associated comorbidities, peritonitis, and mainly the time interval between perforation and surgery.^{6,8}

4 | CONCLUSION

Jejunal diverticulitis is a challenging disorder. Its rarity makes diagnosis difficult and thus delayed. It should be considered in the differential diagnosis of intra-abdominal sepsis and chronic abdominal pain. The perforation of jejunal diverticulitis requires emergent surgery to improve the patient's outcome. The treatment of choice for perforated jejunal diverticulum with peritonitis is segmental intestinal resection with primary anastomosis including non-inflamed diverticula.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

AUTHOR CONTRIBUTIONS

Dr Ben Ismail Imen conceptualized the study and wrote the manuscript. Dr Ben Chaabene Hamadi helped in data interpretation and manuscript evaluation. Dr Rebi S Saber involved in data acquisition. Dr Zoghalmi Ayoub critically revised the manuscript.

ETHICAL APPROVAL

Ethical approval was not required, and patient identifying knowledge was not presented in the report.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable requests.

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