

Case Report

Acute jejunal diverticulitis presenting with perforation peritonitis: a rare case managed in a rural setup

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ABSTRACT

Jejunal diverticulosis is an uncommon and frequently underdiagnosed condition of the small intestine, typically presenting in elderly patients with nonspecific gastrointestinal symptoms. Complications such as hemorrhage, obstruction, and perforation, though rare, can be life-threatening and require prompt diagnosis and surgical management. Here's a report of rare case of acute jejunal diverticulitis with perforation in a 76-year-old female presenting with generalized abdominal pain, distension, and constipation for four days. The patient, with a history of diabetes mellitus and ischemic heart disease, exhibited febrile tachycardia, tachypnea, hypotension, and generalized abdominal tenderness on examination. Laboratory investigations revealed leucocytosis and borderline renal dysfunction. Abdominal radiography demonstrated pneumoperitoneum, warranting emergency laparotomy. Intraoperatively, multiple jejunal diverticula were identified along the mesenteric border, with a 0.5×0.5 cm perforation located approximately 2 feet distal to the duodenojejunal junction. Segmental resection of the perforated portion with primary end-to-end jejunojejunal anastomosis and thorough peritoneal lavage was performed. The postoperative period was uneventful. Histopathology confirmed true diverticula with perforation. Perforation in jejunal diverticulitis occurs in about 82% of cases due to necrotizing inflammation and may present as generalized peritonitis. Diagnosis relies heavily on computed tomography (CT) imaging, but in resource-limited rural settings, clinical acumen and plain radiographs remain crucial. Prompt surgical intervention remains the mainstay of management to prevent complications such as sepsis and short bowel syndrome. This case highlights the diagnostic challenges and emphasizes the importance of early clinical suspicion and timely surgical management of jejunal diverticular perforation, even in rural healthcare settings with limited resources.

Keywords: Jejunal diverticulitis, Perforation peritonitis, Jejunal diverticulosis, Rural surgery, Emergency laparotomy, Small bowel perforation

INTRODUCTION

Jejunal diverticulosis is a rare and often underdiagnosed condition of the small intestine, first described by Somerling in 1794 and later by Sir Astley Cooper in 1807.¹ These diverticula are considered “false” or pseudo-diverticula, as they represent herniations of mucosa and submucosa through the muscular layer, commonly along the mesenteric border of the jejunum.² They resemble colonic diverticula in terms of pathophysiology, where mucosal outpouchings occur at points of vascular

penetration in the bowel wall.³ Their size can range from a few millimetres to over ten centimetres.⁴

While jejunal diverticulosis can exist in isolation, studies show coexisting diverticula in other regions: 35% in the colon, 26% in the duodenum, and 2% in the oesophagus.⁵ The condition primarily affects the elderly and shows a slight male predominance.⁶

Most cases remain asymptomatic or present with vague, non-specific gastrointestinal symptoms, which often

delays diagnosis. Sometimes, symptoms are misattributed to conditions like irritable bowel syndrome.⁷

Diagnosis is often incidental—either during radiological imaging or laparotomy for other indications. Common modalities include contrast-enhanced small bowel follow-through, computed tomography (CT) scans, and in cases of bleeding, mesenteric angiography or technetium-labelled red cell scans.^{8,9}

One of the more serious complications is gastrointestinal bleeding. While it usually presents as lower GI bleed, haematemesis can also occur. The bleeding typically stems from erosion of a submucosal vessel, similar to colonic diverticulosis.¹⁰ In haemodynamically stable patients, endoscopy may be attempted, but the jejunum is often beyond reach. Hence, CT angiography and tagged scans offer better sensitivity and can guide therapeutic embolization.⁹

Emergency laparotomy becomes necessary in patients with haemodynamic instability. In such scenarios, surgical resection of the bleeding jejunal segment with primary anastomosis is the preferred treatment.¹⁰ Perforation is a rarer but potentially life-threatening complication. It may present with generalized peritonitis or a localized abscess. A necrotizing inflammatory reaction accounts for 82% of perforation cases, followed by blunt trauma (12%) and foreign body impaction (6%).¹¹ CT remains the most sensitive modality for diagnosis, as it can delineate mural and mesenteric disease better than barium studies.^{12,13}

Surgical resection with primary jejunojejunal or jejunoileal anastomosis is usually curative, though care must be taken to avoid extensive resections that risk short bowel syndrome. In some localized perforation cases, conservative management with antibiotics or percutaneous drainage has been successful.^{14,15}

Another complication of jejunal diverticula is acute intestinal obstruction, which may occur due to intussusception, extrinsic compression, or formation of enteroliths. These enteroliths, composed of choleic acid, may form within diverticula due to stagnant acidic environments.¹⁰ Diagnosis can be aided by plain radiographs, ultrasound, barium studies, or CT. Management ranges from conservative measures to surgical removal of enteroliths or segmental resection.

In rural healthcare setups, the challenge of managing such cases is further compounded by limited diagnostic tools, constrained access to specialist care, and infrastructural limitations. Despite these hurdles, timely clinical judgment and surgical intervention can lead to favorable outcomes, as illustrated in the present case.

CASE REPORT

Here, is a case report of 76-year-old female, who presented in the emergency with generalized abdominal pain,

distension and constipation since four days. The patient had a past history of intermittent abdominal pain since one year.

She also had history of diabetes mellitus and ischemic heart disease (IHD) for which she had been taking antidiabetic and antiplatelet medications. On general physical examination she was febrile, tachypnic, tachycardic and hypotensive. Per abdominal examination revealed distension, generalized tenderness, guarding all over abdomen. Routine laboratory investigations showed leucocytosis and borderline deranged renal function test. Abdominal X-ray displayed air under both the domes of the diaphragm and hence was posted for laprotomy. On laparotomy, multiple jejunal diverticula were present on the mesenteric side. A perforation measuring 0.5×0.5 cm was found in the diverticulum which was approximately 2 feet distal to the duodenojejunal junction (Figure 1).

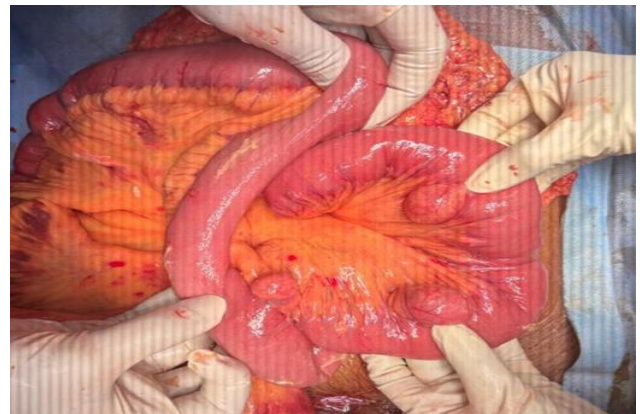


Figure 1: Perforated mesenteric diverticuli.

Multiple diverticuli were seen on mesenteric side all over jejunum and proximal ileum which were non inflamed (Figure 2).



Figure 2: Multiple diverticuli on mesenteric side of jejunum.

Peritoneal lavage with resection of only perforation-bearing segment was done with end to end jejunojejunal anastomosis (Figure 3). On histopathological examination

of resected segment showed true diverticuli with intestinal epithelium and perforation of diverticulum.

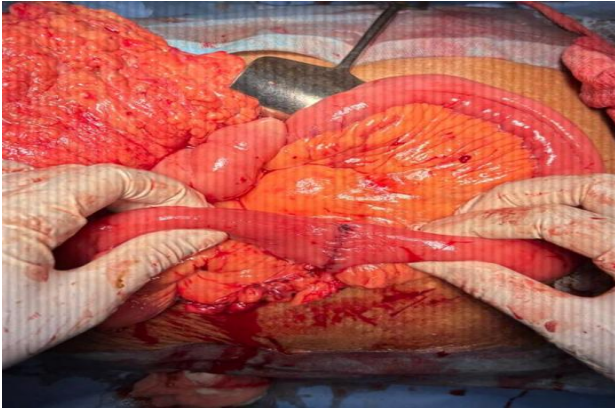


Figure 3: End to end anastomosis after resection of diverticular segment.

DISCUSSION

This report discusses a rare presentation of acute jejunal diverticulitis complicated by perforation and peritonitis, managed successfully in a resource-limited rural environment. Through this case, we aim to highlight the diagnostic difficulties, the importance of clinical vigilance, and the feasibility of effective management even in non-tertiary care centers.

Jejunal diverticulosis is a rare entity, with an incidence ranging from 0.3% to 2.3% in radiological and autopsy series, predominantly affecting elderly individuals with a slight male predominance.¹² The diverticula are pseudodiverticula, herniating through points of vascular penetration on the mesenteric border, similar to colonic diverticulosis.³ Most cases remain asymptomatic and are diagnosed incidentally, but complications such as gastrointestinal bleeding, intestinal obstruction, and perforation may occur. Perforation, although uncommon, has been reported in approximately 6–10% of complicated jejunal diverticulitis cases and is associated with high morbidity and mortality, especially in delayed diagnoses.^{4,5}

In the present case, the patient presented with generalized peritonitis secondary to a perforated jejunal diverticulum, which is consistent with the necrotizing inflammatory etiology described as the most frequent cause of perforation (82%).⁶ Unlike some reports advocating conservative management or percutaneous drainage in localized perforations, the generalized peritonitis and hemodynamic instability warranted emergency surgical intervention, aligning with recommendations by Ross et al and Longo et al, who favored segmental resection with primary anastomosis in such scenarios.^{4,10,14-16} Our successful outcome further corroborates Tsiotos et al analysis, which reported favorable results with limited resection to prevent short bowel syndrome.¹

Recent case-based reviews further support that conservative management may be effective in selected uncomplicated cases, often using antibiotics and CT-guided drainage, but surgery remains the standard in complicated presentations.¹⁶ Laparoscopic resection, once considered experimental, has now been documented as a safe alternative in perforated cases, with successful outcomes and reduced morbidity.¹⁷ Similarly, small case series reinforce that laparoscopic management is feasible in specialized centers, although open laparotomy remains the safer choice in unstable or advanced cases.¹⁸

The rarity of jejunal diverticular perforation in rural settings underscores the challenges in early diagnosis due to limited imaging facilities. Although CT remains the most sensitive modality for detecting mural and mesenteric involvement, this case emphasizes the importance of clinical suspicion, basic radiographic findings (pneumoperitoneum), and prompt surgical exploration in resource-constrained environments.^{12,13}

Comparison with prior literature shows that earlier studies emphasized emergency laparotomy and resection as the mainstay of management, with conservative treatment limited to localized disease.^{7,9,14} More recent analyses highlight that early surgical resection improves survival and reduces morbidity, aligning with our experience.^{16,18} Additionally, cases of jejunal diverticular bleeding have been reported, further broadening the spectrum of complications and stressing the importance of awareness among clinicians.^{19,20}

CONCLUSION

This case adds to the limited literature on perforated jejunal diverticulitis by demonstrating that timely surgical intervention can achieve favorable outcomes even in resource-limited rural setups. It reinforces previous findings that segmental resection with primary anastomosis remains the treatment of choice for perforation-related peritonitis while highlighting that clinical vigilance and early operative decision-making can offset diagnostic limitations. By presenting a successfully managed case in a rural setting, this report advances understanding by emphasizing the feasibility of effective management outside tertiary care centers, encouraging early suspicion of this rare but life-threatening condition in elderly patients presenting with acute abdomen.

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