

Perforated Jejunal Diverticula: A Rare Cause of Acute Abdomen in the Elderly

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ABSTRACT

Jejunal diverticula are rare and usually occur in the elderly. The condition is difficult to diagnose because patients generally present with symptoms that mimic other diseases. Enteroclysis and abdominal computed tomography are the most specific diagnostic tests. The standard treatment is the surgical resection of the involved segment. We present a rare cause of acute abdominal pain with a case of perforated jejunal diverticula. Our patient was successfully treated and had a favorable outcome. We also review the literature regarding this rare condition.

Key words: *Jejunal diverticula, Diverticulosis, Small bowel diverticula, Perforated diverticula*

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ÖZET

Perfore Jejunal Divertikül: Yaşlılardaki Akut Batının Nadir Bir Sebebi

Jejunal divertikül nadir bir durumdur ve genellikle yaşlı kişilerde meydana gelir. Hastalar genellikle diğer hastalıkları taklit eden semptomlarla başvurduğu için bu durumun tanısını koymak zordur. Enteroklizis ve abdominal bilgisayarlı tomografi en spesifik testlerdir. Standart tedavi tutulan segmentin cerrahi rezeksiyonudur. Biz akut karın ağrısının nadir bir sebebi olan perfore jejunal divertikül olgusunu sunduk. Hastamız başarılı bir şekilde tedavi edildi. Biz ayrıca, bu nadir durumla ilgili literatürü de gözden geçirdik.

Anahtar kelimeler: *Jejunal divertikül, Divertikülozis, İnce bağırsak divertikülü, Perfore divertikül*

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INTRODUCTION

Jejunal diverticula are rare and usually occur in the elderly, with an incidence of less than 0.5%^[1]. Pathologically, they are pseudodiverticula of the pulsion type, resulting from increased intraluminal pressure and weakening of the bowel wall. These out-pouchings only contain mucosa and submucosa. Despite most cases of jejunal diverticulosis remaining completely asymptomatic, complications are reported in 10-30% of patients^[2]. These include chronic abdominal pain, malabsorption, hemorrhage, diverticulitis, obstruction, abscess formation, and rarely, diverticular perforation. Although diverticular disease is a common pathology of the colon, diverticulosis of the small bowel and its complications are relatively rare. As a result, the diagnosis is often missed, which can be disastrous.

CASE REPORT

A 75-year-old male presented to our emergency department with a one-day history of generalized abdominal pain, without nausea or vomiting. On physical examination, the patient's vital signs were stable. Abdominal examination revealed a generalized abdominal tenderness and signs of peritonitis. Routine laboratory investigations were normal. Abdominal X-ray showed multiple dilated loops of small bowel but no free air under the diaphragm. A subsequent computed tomography (CT) scan of the abdomen and pelvis (Figure 1A) revealed thickening of the distal jejunum with mesenteric fat stranding and dilatation of the proximal jejunum. A hypodense collection was seen in the mesentery of the distal jejunum abutting the gut loop (Figure 1B). Multiple small bowel diver-

ticula were identified with surrounding pockets of free air adjacent to the jejunal diverticula, suggestive of a small bowel perforation. The patient underwent a laparotomy, which identified multiple jejunal diverticula (Figure 2A) with single pinhole jejunal perforation in diverticula of the distal jejunum and associated enteritis of a 15 cm jejunal segment, which was adhered to the sigmoid colon. The inflamed jejunal segment (Figure 2B) containing perforation was excised, and jejunojunal anastomosis was performed. Our patient's postoperative period was uneventful and he made a full recovery.

DISCUSSION

Jejunal diverticulosis was first reported in 1807 by Sir Astley Paston Cooper. Jejunal diverticula are the least common type of small bowel diverticula, with an incidence of less than 0.5%^[1]. The most common location of the diverticula in the small bowel is the proximal jejunum (75%), followed by the distal jejunum (20%) and the ileum (5%)^[3]. They are rarely solitary and more commonly multiple (77%). Although the true etiology of jejunal diverticulosis is unknown, this condition is believed to develop from a combination of abnormal peristalsis, intestinal dyskinesia, and high segmental intraluminal pressure. These are pulsion-type false diverticula consisting of mucosa and submucosa, excluding the muscularis layer of the bowel wall arising on the mesenteric border where the mesenteric vessels penetrate the jejunum.

The patients are usually asymptomatic, until they present with the complications associated with diverticular disease. Common acute complications of diverticula include diverticulitis, hemorrhage, intesti-

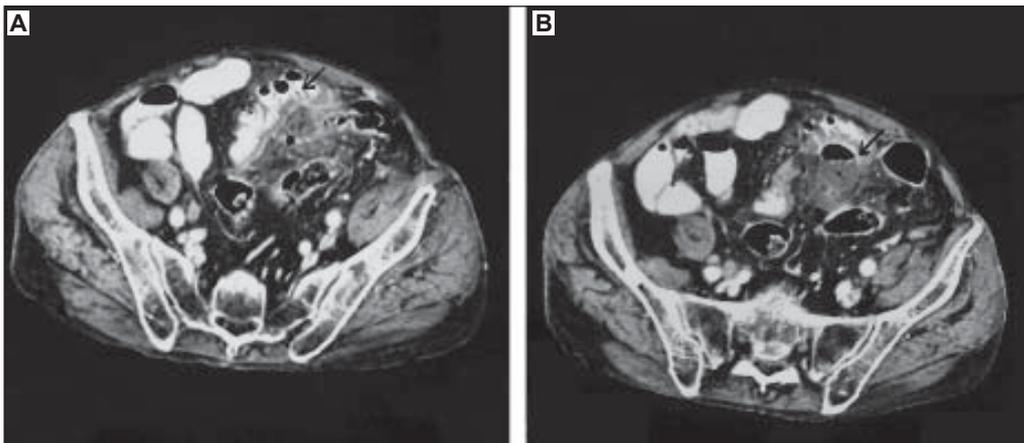


Figure 1. A: Contrast-enhanced computed tomography (CECT) image showing thickening of the distal jejunal segment. B: CECT image of the hypodense collection around the perforated diverticula with specks of air.

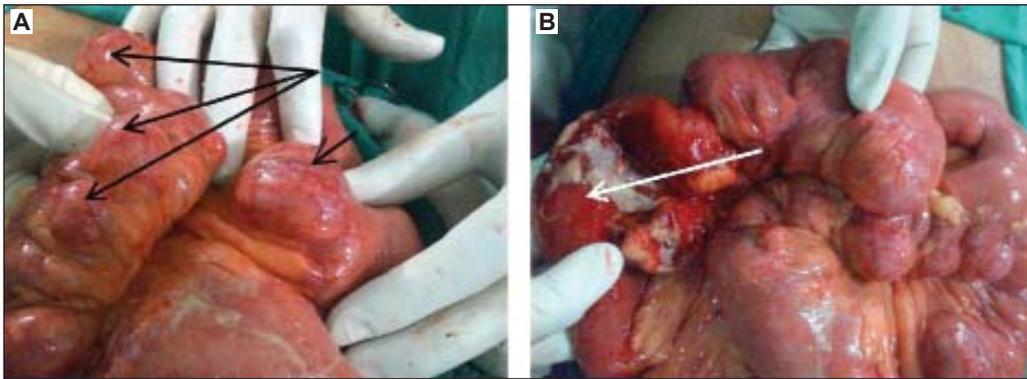


Figure 2. A: Intraoperative image showing multiple jejunal diverticula. B: Intraoperative image showing enteritis of the jejunal segment with diverticular perforation.

nal obstruction, and perforation^[4]. Perforation of jejunal diverticula is an especially rare complication, and the clinical features are largely non-specific. The differential diagnosis for this acute condition includes perforated peptic ulcer, acute appendicitis, cholecystitis, or colonic diverticulitis. Predisposing factors for perforation were shown to be related to a necrotizing inflammatory reaction in 82% of cases, followed by blunt trauma (12%) and foreign body impaction (6%)^[5]. Cocaine sniffing has also been noted as a risk factor^[6]. Perforation often occurs into the mesenteric leaves of the jejunum, leading to a mesenteric abscess. Although the perforation may be contained within the mesentery, preventing leakage into the peritoneal cavity and resultant peritonitis, it also leads to a delay in diagnosis because the classical physical examination findings of an acute abdomen are absent, which may prove disastrous when frail or elderly patients are involved.

Jejunal diverticulosis often presents a diagnostic dilemma. Abdominal radiographs and/or chest radiographs and erect films may demonstrate evidence of perforation, as free air under the diaphragm, or evidence of intestinal obstruction, as multiple air-fluid levels and bowel dilatation. CT scanning is helpful in showing acute inflammatory changes, such as mesenteric stranding and abscess or free air around the diverticular site^[7]. Endoscopic procedures, such as double-balloon endoscopy and capsule endoscopy may be helpful in the diagnosis of small bowel diverticula, but have limited utility in the emergency setting^[8]. Diagnostic laparoscopy can be very useful in investigating patients with a complicated disease. It enables an accurate conclusive diagnosis to be made, avoiding the need for unnecessary laparotomy.

Management of jejunal diverticula depends upon the patient's symptoms. It is generally recommended

that asymptomatic diverticula found incidentally during laparotomy for other reasons should be left alone. Surgical resection is the standard of care for symptomatic patients with complicated diverticula^[2]. Localization of the diverticula may be difficult during laparotomy because they are frequently hidden between the mesenteric leaves. Techniques to facilitate exposure include jejunal insufflation of air using manual compression and intraoperative endoscopy. If the perforation of a jejunal diverticulum causes only localized peritonitis and the patient remains stable, it has been reported that a trial of non-surgical management with intravenous antibiotics and other supportive measures alongside percutaneous CT-guided aspiration of localized intraperitoneal collections may be suitable and avoid the need for surgery^[9]. However, the current treatment of choice for perforated jejunal diverticula causing generalized peritonitis is prompt laparotomy with segmental intestinal resection and primary anastomosis. Extensive resection of multiple diverticula may lead to short bowel syndrome; thus, resection should be limited only to the diseased segment^[10]. Simple diverticulectomy with oversew is not recommended because it has been linked to postoperative leakage, sepsis, and death^[3].

In conclusion, jejunal diverticular disease is a rare clinical entity that is difficult to diagnose. It should be considered in the differential diagnosis of acute abdomen, especially in elderly patients. Once jejunal diverticulosis has been diagnosed, conservative medical management should be instituted to alleviate symptoms and reduce the risk of complications associated with diverticular disease. Rarely, jejunal diverticular disease may present as intestinal perforation, for which surgical repair is the treatment of choice. Clinical awareness of this disease by general surgeons

will facilitate both early diagnosis and prevention of its serious sequelae, and contribute to a successful clinical outcome for the patients.

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