

## Intestinal Perforation Secondary to Multiple Jejunal Diverticula: Case Report

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### ABSTRACT

Small bowel diverticulosis is a rare condition, with an incidence ranging between 0.3% and 1.3% in the general population. Although it is typically asymptomatic, it can lead to severe complications such as perforation, diverticulitis, bleeding, and intestinal obstruction. These cases require rapid and accurate diagnostic evaluation, with computed tomography and ultrasound being essential due to the lack of established diagnostic protocols. We present the case of a 61-year-old woman with a history of colonic diverticulosis, who developed abdominal pain, fever, melena, and septic shock. Imaging revealed an intestinal perforation, confirmed by exploratory laparotomy, which identified jejunal diverticulosis with perforation. A resection of 90 cm of the small intestine was performed with a primary anastomosis. The patient recovered well in the intensive care unit. This case highlights the importance of early diagnosis and surgical intervention in small bowel diverticulosis complications, a condition that, though uncommon, can be potentially serious.

**KEYWORDS:** Small bowel diverticulitis, Jejunal diverticulitis, Intestinal perforation, Abdominal sepsis.

### ARTICLE DETAILS

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### INTRODUCTION

The presence of diverticula in the small intestine is an extremely rare entity. They can occur in any segment of the small intestine, with an incidence ranging from 0.3% to 1.3% in the general population and 2.3% in autopsy studies. Diverticula are most commonly located as follows: 75% in the proximal jejunum, 20% in the distal jejunum, and 5% in the ileum. They may be accompanied by colonic diverticula in 30–75% of cases, duodenal diverticula in 15–42%, esophageal diverticula in 2%, and bladder diverticula in 12% of cases (1,2).

Most cases are asymptomatic, and when symptoms are present, they are often nonspecific, such as abdominal discomfort, a feeling of fullness, and malabsorption syndrome. Complications occur in up to 10% of patients, including perforation, diverticulitis, abscess formation, bleeding, fistulas, and intestinal obstruction (3,4).

No specific diagnostic protocol exists for small bowel diverticula/diverticulitis. Imaging studies, including

computed tomography (CT) and ultrasound, are useful for diagnosis, although the nonspecific nature of symptoms makes diagnosis challenging. In asymptomatic small bowel diverticula, medical treatment is not indicated. In cases of diverticulitis, conservative management may be appropriate, including resuscitation for bleeding and intravenous antibiotics when inflammation or abscesses are present. If these measures fail, more aggressive interventions, such as percutaneous drainage or exploratory laparoscopy/laparotomy with intestinal resection and primary anastomosis, are required (6).

### CASE PRESENTATION

The patient is a 61-year-old female with a history of systemic arterial hypertension and appendectomy at age 12. She was previously diagnosed with colonic diverticular disease one year prior but did not undergo follow-up or treatment.

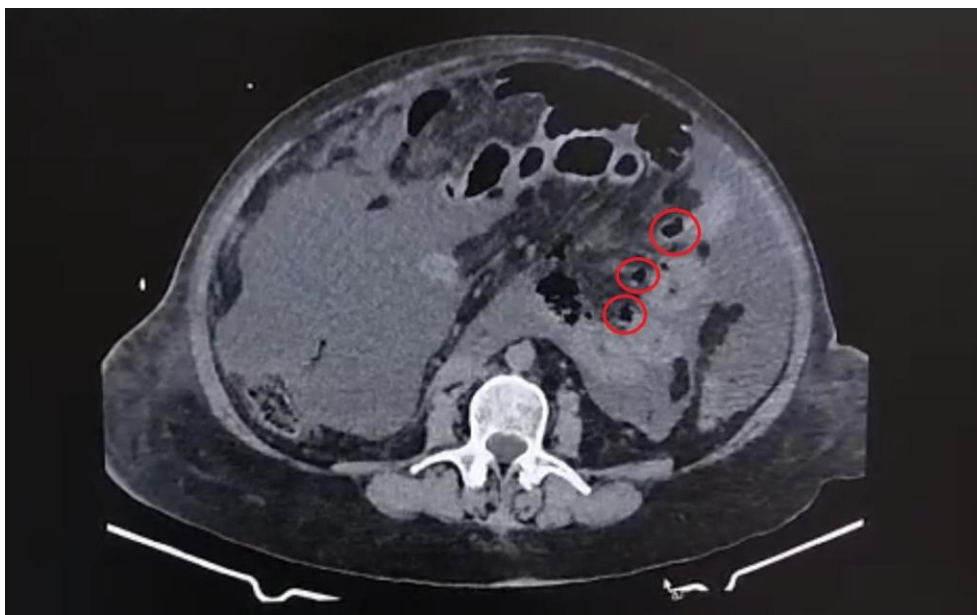
Her symptoms began one month before hospital admission, characterized by progressive abdominal pain, fever,

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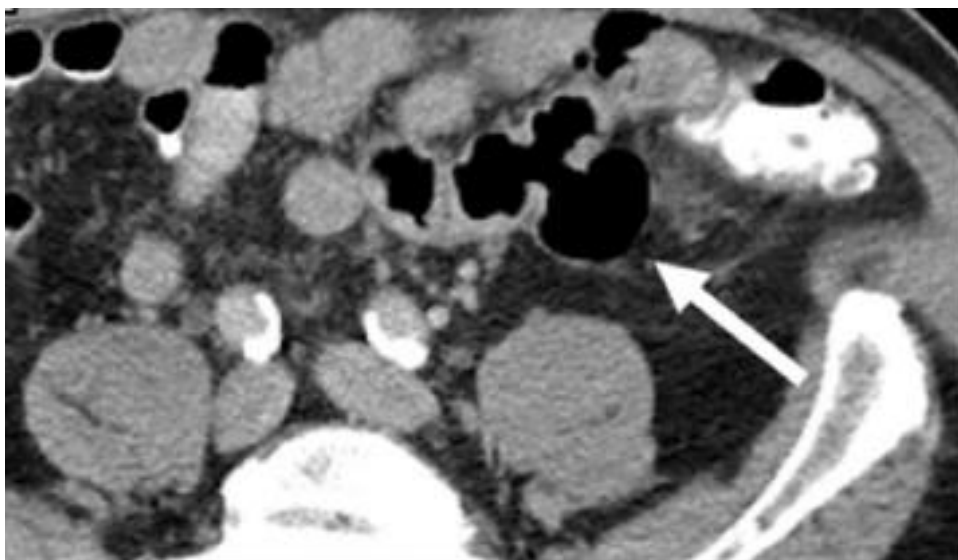
headache, and multiple episodes of melena. She received symptomatic management from an external physician with slight improvement, but three days before admission, she experienced severe abdominal pain, oral intolerance, fatigue, and decreased alertness. She was brought to the emergency department with signs of septic shock of abdominal origin, disorientation, pallor, and clear signs of peritoneal irritation.

Laboratory tests showed: Hb 8.2 g/dl, leukocytes 10.1 u/L, neutrophils 89.2%, creatinine 1.9 mg/dl, total bilirubin 5.06 mg/dl, and arterial blood gas with a pH of 6.9 and lactate level of 18.7.

An abdominal CT scan revealed findings compatible with intestinal perforation, as well as sac-like images in unspecified intestinal segments.



**Image 1: Simple abdominal CT: sac-like images suggestive of small bowel diverticula with abundant free fluid and intra-abdominal gas.**

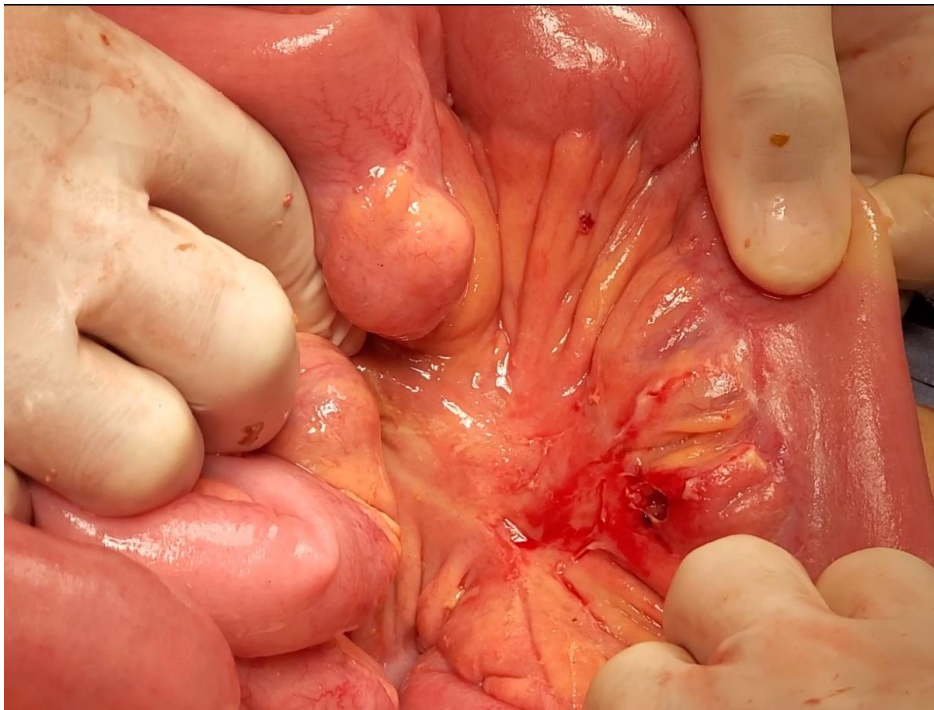


**Image 2: Abdominal CT: jejunal diverticulum with gas inside and bowel wall bulging observed.**

An exploratory laparotomy was performed on March 25, 2023, revealing approximately 4 liters of free intestinal fluid. Multiple jejunal diverticula were found 20 cm from the Treitz ligament along the mesenteric border, with perforation of the first diverticulum. Sigmoid diverticula were present but without involvement. A 90 cm segment of the jejunum was resected, followed by a two-layer manual end-to-end

anastomosis. The patient was transferred to intensive care for postoperative care.

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**Image 3: Perforated diverticulum during exploratory laparotomy.**



(a)



(b)

**Image 4: a) Eight jejunal diverticula along the mesenteric border; b) White line indicates the perforation site in the first diverticulum.**

### DISCUSSION

Diverticula are small, sac-like protrusions that can form anywhere in the gastrointestinal tract. While they most commonly form in the large intestine, they can also develop in the small intestine, with most located in the duodenum and less frequently in the jejunum and ileum.

Diverticula are characterized by the herniation of the mucosa and submucosa through the muscular layer of the intestinal wall. The mesenteric border is the most common site of

occurrence, due to areas of weakness where blood vessels penetrate the small intestine (3,5,7,8).

Jejunal diverticulosis is rare and often asymptomatic. However, complications such as diverticulitis, bleeding, intussusception, obstruction due to enteroliths, perforation, and anemia may occur (1,4).

CT imaging appears to be the preferred diagnostic modality, especially in emergency situations, to avoid overlooking complicated cases of small bowel diverticulosis (10,12).



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### CONCLUSION

Jejunal diverticulosis, though rare, presents a diagnostic challenge for general surgeons. Its clinical presentation is often vague, with symptoms such as abdominal pain, intestinal obstruction, perforation, or abdominal sepsis potentially leading to diagnostic confusion.

Based on the literature, limited data guide suspicion of this pathology, but age and a history of diverticular disease may suggest its presence. Surgical intervention is frequently required when complications arise, though conservative management is appropriate in less severe cases.

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