

CASE REPORT

Surgical treatment of an incarcerated ventral hernia with massive jejunal diverticulosis

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Received: 05 March; Accepted: 12 July 2025.

ABSTRACT

Jejunal diverticulosis is a rare condition that often presents asymptotically, but can occasionally lead to severe complications, such as obstruction, perforation or bleeding. We report a case of an incarcerated ventral hernia resulting from massive jejunal diverticulosis, an unusual cause of bowel obstruction. An 80-year-old female patient presented with acute abdominal pain, nausea and vomiting. Physical examination revealed a tender, irreducible mass in the epigastric region. Exploratory surgery was performed and confirmed the presence of multiple jejunal diverticula, with one segment incarcerated in the epigastric hernia. The patient underwent successful surgical repair, including liberation of the affected jejunal segment and hernia repair. This case highlights the importance of considering jejunal diverticulosis in the differential diagnosis of bowel obstruction, and emphasizes the need for prompt surgical intervention in cases of complicated diverticulosis. Early diagnosis and appropriate management are critical in preventing the severe morbidity and mortality associated with this condition.

Keywords: surgical treatment, jejunal diverticulosis, ventral hernia, hypertension, diabetes.

Introduction

Jejunal diverticulosis is a rare condition with a prevalence of about 0.2% to 1.3%. It is generally detected during autopsies or imaging studies as cases are asymptomatic^{1,2}. This entity is usually found as an incidental discovery in the elderly population,

and the majority are usually asymptomatic, but diverticulitis, hemorrhage, and small bowel obstruction may develop in about one-tenth of patients^{2,3}. The symptoms of these complications can make the diagnosis difficult because the patient is

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usually only mildly symptomatic, which is sometimes only suggestive of other stomach malfunctions, such as Crohn's disease, appendicitis, and colonic diverticulosis^{3,4}. Although hernias causing bowel obstruction caused by the imprisonment of parts of the small intestines are susceptible, jejunal diverticula leading to hernia incarceration are very rare^{4,5}.

In the present case, we report an 80-year-old female patient with an incarcerated ventral hernia arising from massive jejunal diverticulosis. She underwent surgery, which was successful. This case underlines the significance of obtaining more information on jejunal diverticulosis as a possible cause of bowel obstruction, especially if the patient has only mild and unspecific abdominal symptoms and a history of hernias.

Case Report

An 80-year-old woman was admitted to our hospital for urgent surgical treatment of incarcerated ventral hernia. Previously she had been diagnosed with hypertension and Type 2 Diabetes, which were both poorly managed. Due to the nature of her condition, it was necessary to perform surgery as soon as possible. First, we made an incision in the abdomen directly over the hernia. After cutting through the cutaneous and subcutaneous tissue, we visualized the fascia and the incarnated hernia. After liberating and opening the hernia sac, at the length of c. 30cm we found a jejunal loop with massive jejunal diverticula (Figure 1).

Since the wall of the jejunum was intact and there were no signs of bleeding or inflammation from the diverticula, we decided not to perform jejunal resection due to the patient's poor condition. We then performed ventral hernia repair using polypropylene mesh. After the surgery, the patient was successfully extubated. She was hospitalized for the following three days and discharged from the hospital with

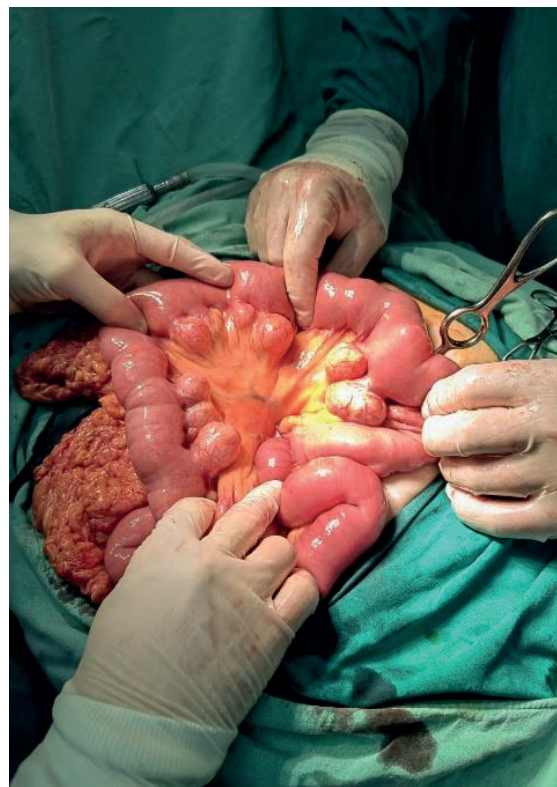


Figure 1. Intraoperative findings of massive jejunal diverticulosis.

full recovery from the abdominal symptoms. During the follow-up visits, she reported no symptoms of abdominal pain or gastrointestinal bleeding. A follow-up barium swallow test was conducted, which corroborated the patient's reported symptoms, and provided further confirmation of the clinical findings (Figure 2 and 3).

Discussion

This case report of an 80-year-old woman with an incarcerated ventral hernia, complicated by massive jejunal diverticulosis, provides excellent information to help surgeons deal with complex hernias in the presence of comorbidities. Jejunal diverticulosis is an uncommon condition, mostly seen in the older age group, and it is usually asymptomatic. Nonetheless, there are situations where it may lead to very serious

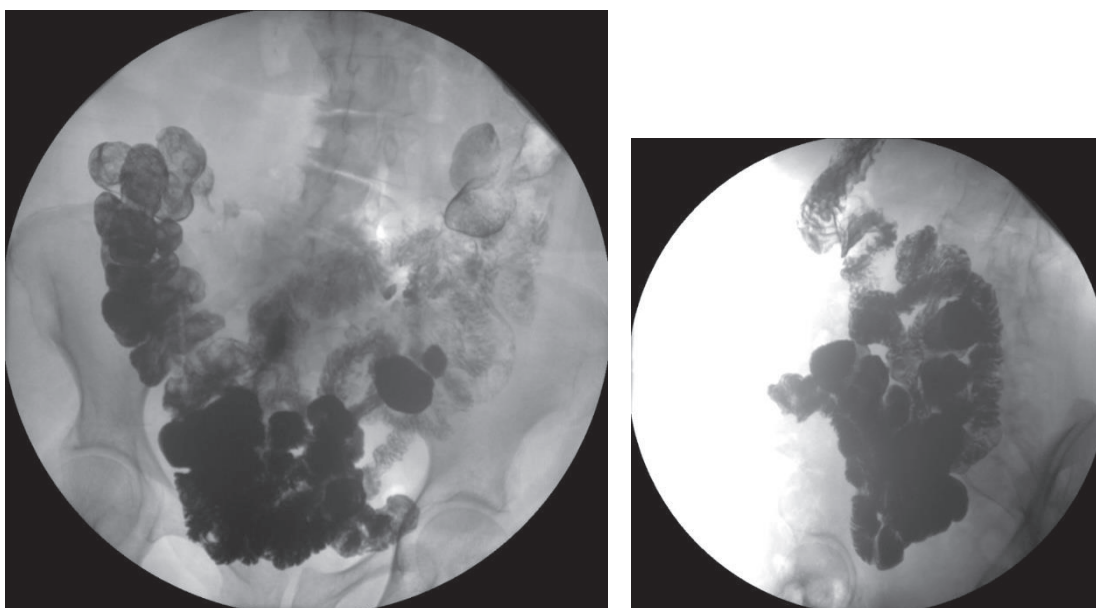


Figure 2 and 3. Follow up, barium swallow roentgen scan.

complications, for example, perforation, volvulus, or intestinal blockage, which can make the patient's condition worse^{1,2}. Prompt identification of the incarcerated hernia and jejunal diverticulosis in this case led to the appropriate surgical procedure. As a result, severe outcomes were prevented, such as bowel ischemia or perforation³.

The decision not to perform jejunal resection was justified by the absence of perforation, ischemia, and active inflammation in the diverticula, despite the fact that they were so large. The literature suggests that resection is usually performed in cases where there are complications such as bleeding or perforation⁶. This is particularly relevant in elderly patients with comorbidities such as poorly managed hypertension and diabetes, as they increase perioperative risks^{6,7}.

The use of a polypropylene mesh for hernia repair is in line with current surgical practice, which favors mesh repair for reducing the recurrence of hernias, especially in non-infected settings^{8,9}. This method is associated with lower rates of recurrence compared to primary suture repair. In this patient, the absence

of infection and contamination supported the use of mesh, contributing to a favorable outcome.

Jejunal diverticulosis is often underdiagnosed due to its asymptomatic nature, and is typically discovered incidentally during imaging or surgery, as in this case. The literature supports the hypothesis that diverticula form due to increased intraluminal pressure and motility disturbances, which can lead to complications such as bowel obstruction or volvulus, particularly in elderly individuals^{6,8}. However, the management of uncomplicated jejunal diverticulosis, as seen here, often does not necessitate resection, especially in high-risk patients.

Postoperatively, the patient recovered well, with no recurrence of symptoms. Follow-up imaging, such as a CT scan and barium swallow, was performed in this case, and is essential to confirm the resolution of hernia-related symptoms and ensure no recurrence of complications from the diverticula^{5,8}. This approach of vigilant postoperative monitoring is consistent with the best practices for managing patients with complex abdominal conditions.

In conclusion, this case highlights the importance of individualized management, especially in elderly patients with multiple comorbidities. Conservative management of jejunal diverticulosis, combined with mesh repair for hernia, can yield favorable outcomes when appropriately indicated. Future studies should focus on refining treatment protocols for patients with both a hernia and jejunal diverticulosis, to optimize outcomes in this high-risk group.

The perineal steps of the operation were as follows: the patient's position on the table was changed. The patient was placed in the Jackknife position. This was followed by a wide extralevator excision of the anorectum, completing the excision of the rectum. An elliptical incision was made around the anus in the skin and subcutaneous tissue (Figure 6). In the region of the tip of the coccygeal bone, a transverse incision was made along Waldayer's fascia and the anococcygeal ligament. After that, entry was made into the retrorectal space. The posterior wall of the rectum was dissected from the presacral fascia. The middle sacral artery and vein were ligated and severed. Bilateral incisions were made in the rectococcygeal muscles. Access was made to the ischiorectal space. The inferior hemorrhoidal artery and vein were ligated and severed. The lateral walls of the rectum were sharply dissected from the edges of the levator muscles on the left and right. The rectal stump was pulled out, and the rectum freed. The puborectal muscle was cut along the anterior wall of the rectum, and the rectum removed with the anus.

Conflict of Interest

The authors declare that they have no conflicts of interest.

Funding details

There is no funding from pharmaceutical companies.

Author's Contribution

Ali Gavrankapatnovic; Data curation, Visualization, Investigation, Writing-Reviewing, Edin Beciragic: Data curation, Visualization, Investigation, Admir Bektesevic; Conceptualization, Methodology, Sanela Brzika; Data curation, Investigation, Nedim Hasić1; Conceptualization, Methodology, Emina Letic; Data curation, Investigation Writing-Original draft, Samir Custovic; Data curation, Visualization, Investigation, Ismar Rasic; Methodology, Writing-Reviewing.

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