

Diagnosis and Treatment of Jejunal Diverticular Bleeding by Enterotomy and Intraoperative Endoscopy: A Case Report

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ABSTRACT

Jejunal diverticular bleeding is a rare but potentially life-threatening condition, particularly in elderly patients with underlying comorbidities such as cardiovascular disease. It can be challenging to diagnose and treat, which can delay diagnosis and lead to unsatisfactory clinical outcomes. Even with the advancements in endoscopic technology, conventional surgical intervention remains the standard for the treatment of jejunal diverticular bleeding. We report a case of a 70-year-old woman with underlying coronary artery disease on anticoagulant and antiplatelet therapy and underlying hypertension, presenting with recurrent melena and painless hematochezia, accompanied by hypovolemic shock. Despite conservative management and extensive diagnostic workup, the bleeding source remained unidentified until surgical intervention. This case highlights the challenges in diagnosing jejunal diverticular bleeding and the effectiveness of laparotomy with enterotomy and retrograde intraoperative endoscopy in its management.

KEYWORDS: Jejunal diverticular bleeding, melena, hematochezia, laparotomy, enterotomy, intraoperative endoscopy, segmental resection.

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INTRODUCTION

Jejunal diverticulosis is a rare condition, with complications such as bleeding being even less common (1). Jejunal diverticular bleeding affects up to 2.3% of people in radiographic series and 7% in autopsy studies (2). The majority of patients with jejunal diverticulosis are asymptomatic. Diagnosis can be challenging due to the rarity of the condition and the nonspecific nature of symptoms. Diagnosis may be delayed due to the difficulties of accessing the small intestine by endoscopy (2). Currently, endoscopic therapy, transcatheter arterial embolization, or surgery are used to treat jejunal diverticular bleeding (3). This case report discusses the diagnostic difficulties and the successful management of jejunal diverticular bleeding using a combination of enterotomy and intraoperative endoscopy during exploratory laparotomy.

CASE PRESENTATION

A 70-year-old woman with a history of hypertension and coronary artery disease, on long-term antihypertensive, anticoagulant, and antiplatelet therapy, presented with a 2-day history of frequent episodes of melena, occasional painless hematochezia, and abdominal discomfort without hematemesis. On presentation, she was hypotensive, and clinical signs indicated hypovolemic shock despite initial conservative management.

On physical examination, the abdomen was soft, non-tender, without distension, and with normal bowel sounds. A digital rectal examination revealed dark blood and no tumors. Initial investigations, including esophagogastroduodenoscopy and colonoscopy, revealed multiple diverticula in the caecum, ascending colon, and sigmoid colon but no active bleeding source. A contrast-enhanced CT (CECT) scan of the abdomen and pelvis showed diverticulosis in the caecum, ascending colon, and sigmoid colon without significant signs of bleeding.

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During the first two days of hospitalization, the patient's condition did not respond to conservative management, which included blood transfusions and inotropic support. Despite the transfusion of 3 units of blood, her hemoglobin level remained at 7.1 g/dL, with a prothrombin time of 19.1 seconds and an INR of 1.4. She continued to experience hematochezia, hypotension, and hemodynamic instability.



Figure 1. Retrograde intraoperative endoscopy via enterotomy after exploratory laparotomy.

hemodynamically stable and tolerated a gradual return to a normal diet. A total of 6 units of blood were transfused during her hospitalization. Histopathological examination of the resected jejunal segment revealed chronic non-specific jejunitis and diverticulitis without evidence of dysplasia or malignancy. She was discharged on post-operative day 12 without any complication.

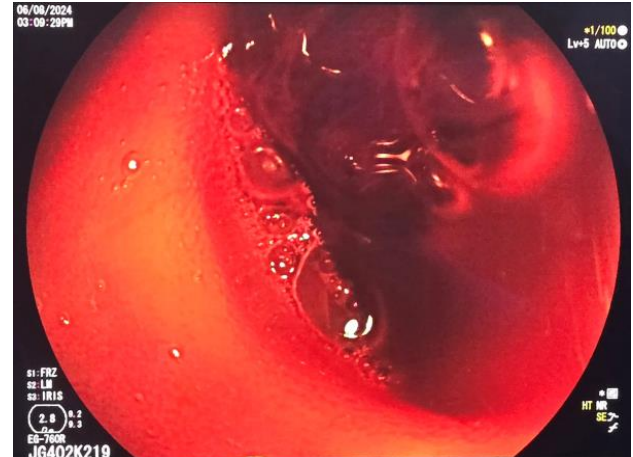


Figure 2. Intraoperative endoscopic finding of jejunal diverticulum with active bleeding and blood clots.



Figure 3. Intraoperative finding of jejunal diverticula at ~12 inches from the duodenojejunal junction.

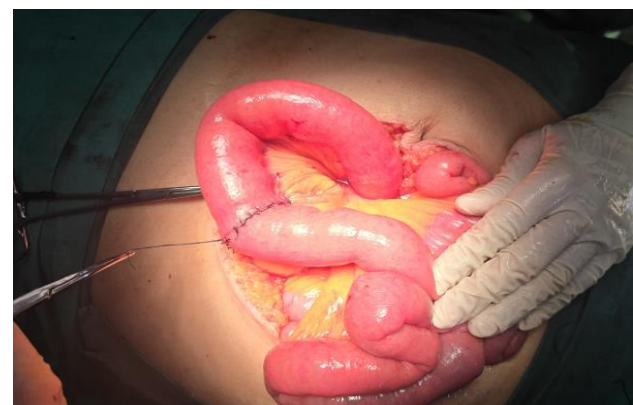


Figure 4. Resection of the segment of jejunal diverticula and end-to-end anastomosis with two-layer suture.

Given the failure of conservative management and ongoing hemodynamic instability, a decision was made to proceed with exploratory laparotomy, supported by intraoperative endoscopy.

After obtaining written informed consent, laparotomy was performed, and retrograde intraoperative endoscopy via ileostomy was conducted (Figure 1), revealing three jejunal diverticula at the mesenteric border with active bleeding and the presence of blood clots located approximately 12 inches from the duodenojejunal (DJ) junction (Figure 2 & 3). A segmental resection of the jejunal diverticula was performed, followed by end-to-end anastomosis using a two-layer suture technique (Figure 4). The ileostomy site was then closed.

The postoperative period was uneventful. The patient's condition and vital signs were markedly improved, and her hemoglobin level increased to 11.7 g/dL. She remained

Without any complications. Two weeks later, she was examined in the outpatient clinic, and there was no more bleeding.

DISCUSSION

Jejunal diverticular bleeding poses a diagnostic challenge due to its rarity and the limitations of conventional imaging and endoscopic techniques in identifying the bleeding source. Proceeding to laparotomy without identifying the source of the bleeding can be highly challenging. As thus, localizing the bleeding lesion prior to surgical resection is crucial for avoiding recurrent bleeding after surgery that results from a missing or incorrectly located lesion.

In this case, despite thorough preoperative investigations, the bleeding source could only be identified during surgery. Intraoperative endoscopy proved invaluable in locating the

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bleeding diverticula, allowing for targeted resection and a successful outcome.

The management of jejunal diverticular bleeding often requires a multidisciplinary approach, especially in patients with significant comorbidities. This case underscores the importance of considering surgical intervention when conservative measures fail and highlights the role of intraoperative endoscopy in the precise localization and treatment of bleeding sources in the small intestine.

CONCLUSION

This case illustrates the complexities of diagnosing and treating jejunal diverticular bleeding, particularly in elderly patients with comorbid conditions. The successful management of this case through enterotomy and intraoperative endoscopy demonstrates the importance of surgical intervention in cases unresponsive to conservative treatment. Early surgical consideration and the use of intraoperative endoscopy may improve outcomes in similar cases.

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CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

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