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Case Report

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Perforated Duodenal- Jejunal Flexure Diverticulitis: A Case Report

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ABSTRACT

Background: Duodenojejunal flexure diverticulitis is an exceptionally rare condition, characterized by inflammation and potential perforation of diverticula located at the junction between the duodenum and jejunum. While diverticulitis is typically associated with the colon, upper gastrointestinal diverticula—particularly at the duodenojejunal flexure—are infrequently diagnosed and underreported.

Case Presentation: We report the case of a 76-year-old male who presented with symptoms indicative of gastrointestinal pathology. Initial conservative management was initiated; however, disease progression led to perforation and intra-abdominal abscess formation, necessitating further intervention.

Conclusion: This case highlights the diagnostic challenges posed by duodenojejunal diverticulitis and underscores the critical role of advanced imaging and timely clinical decision-making. Given its potential to mimic more common gastrointestinal disorders, increased awareness is essential for early diagnosis and optimal management of this rare but serious condition.

Keywords: Duodenojejunal flexure diverticulitis, Perforated Duodenal, Case Presentation

Introduction

Duodenal-jejunal flexure diverticulitis is an uncommon condition characterized by inflammation and potential perforation of diverticula located at the junction of the duodenum and jejunum. While diverticulitis is more commonly associated with the colon, diverticula in the upper gastrointestinal tract, particularly at the duodenojejunal flexure, are rare and often under-recognized [1]. With only a limited number of cases documented in medical literature, a systematic review published in 2021 identified 47 cases of perforated duodenal diverticula, the majority of which were located in the second part of the duodenum [2].

This case report presents a 76-year-old male who developed symptoms suggestive of gastrointestinal pathology. Initial conservative management was undertaken; however, subsequent complications, including perforation and abscess formation, led to a more severe clinical course [3]. This case underscores the importance of early recognition, advanced imaging techniques, and timely intervention in managing such rare conditions, which can often mimic more common gastrointestinal disorders [4].

Case

A 76-year-old male with a medical history of obesity and tobacco use presented 30 days prior to admission with a history of abdominal pain and distention. A CT scan with intravenous contrast was performed, revealing two sac-like images dependent on their wall, contiguous, containing hypodense material and gas, measuring 18 mm and 22 mm in their major axes, respectively. Additionally, sac-like images dependent on the wall of the proximal jejunum were identified, one measuring 16 mm in its major axis. These findings were associated with inflammatory changes, loss of wall continuity, and small mural collections showing enhancement after contrast administration. Stranding of the adjacent mesenteric fat was noted, suggestive of perforated jejunal diverticulitis and duodenal diverticula.

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Laboratory results showed leukocytes 17.08, hemoglobin 13.8, and C-reactive protein (CRP) 9.27. The patient was treated with cefixime and metronidazole, leading to symptomatic improvement and a reduction in acute phase reactants (leukocytes 12.32, CRP 4.94).

One month later, the patient returned with diffuse colicky abdominal pain, a distended abdomen, tenderness to palpation, and positive rebound tenderness. Laboratory results showed CRP 18.05 and procalcitonin 2.38. A repeat CT scan with intravenous contrast revealed inflammatory changes at the proximal jejunal segment, with a complicated diverticulum and abscess formation in the wall measuring 2.6 x 2.3 cm. There were multiple inflammatory changes, peripheral fat stranding, and free fluid. The presence of air bubbles in the right hypochondrium was observed, suggesting possible perforation. A consultation was requested with the General Surgery Department, who initiated management with meropenem and recommended urgent surgical resolution.

An exploratory laparotomy through a midline incision was performed. Upon accessing the abdominal cavity, purulent fluid and congested intestine were observed. The intestine was mobilized, and loose adhesions were released using blunt dissection until the Treitz angle was reached. At the duodenojejunal flexure, a diverticulum was identified on the mesenteric side with an 8 mm perforation, without intestinal content leakage. The intestine appeared friable, congested, and edematous. Proximal jejunum was carefully freed while preserving the intestinal serosa to achieve the required margins for intestinal resection. Once a margin of over 2 cm proximal to the intestinal perforation toward the duodenum was obtained, intestinal transection was performed, A segment of proximal jejunum was resected due to the congestive appearance of the wall, deemed unsuitable for a primary anastomosis. The hepatic flexure of the colon was then mobilized. Following a Kocher maneuver, the first, second, and part of the third portions of the duodenum were mobilized. Once adequate duodenal visualization was achieved the proximal jejunum was approximated retrocolically, reaching the proximal duodenum. A manual side-to-side two layered anastomosis was performed between the second portion of the duodenum and the proximal jejunum. Hemostasis and patency were confirmed.

The abdominal cavity was irrigated Two 19 Fr Blake drains were placed and the abdominal wall was closed. During the postoperative period, antibiotic therapy was escalated to meropenem, linezolid, and anidulafungin. Thromboprophylaxis with enoxaparin was initiated on postoperative day 2. On postoperative day 6, following an oral contrast-enhanced CT that ruled out anastomotic leakage, a liquid diet was initiated and well tolerated, progressing to a soft diet on postoperative day 9. The patient was discharged on postoperative day 13, without drains and asymptomatic.

Discussion

Jejunal diverticulitis (JD) is a rare clinical entity, often challenging to diagnose due to its nonspecific presentation and low prevalence estimated at 1–4.6%, predominantly occurring after the age of 50 [5]. This condition, although often asymptomatic, may progress to complications such as perforation occur in 2.1–7% of cases and may present as localized or generalized peritonitis, often complicated by abscess formation [5,8]. Similarly, intestinal obstruction (2.3–4.6%) may result from inflammatory pseudotumors, volvulus, or post-inflammatory fibrotic stenosis [5,7].

In stable patients, conservative management with IV antibiotics, bowel rest, and imaging-guided drainage of localized abscesses can be effective, with a 20–30% failure rate leading to surgical intervention [6,8-12]. Surgical intervention becomes imperative in cases of failed conservative management, perforation, peritonitis, or obstruction. Standard approaches include resection of the affected segment with primary anastomosis or, in cases involving high-risk patients, stoma creation [5]. At the duodenojejunal flexure, the surgical approach may be more challenging due to the fixed nature of this segment and its proximity to vital structures [13]. Duodenojejuno anastomosis (lateral-to-lateral) is a preferred reconstruction method, offering favorable outcomes and reducing the risk of anastomotic tension [14]. In cases where diverticula are located close to the distal duodenum, direct resection may be impractical. Alternative strategies, such as diverticular inversion reinforced with an omental patch [11].

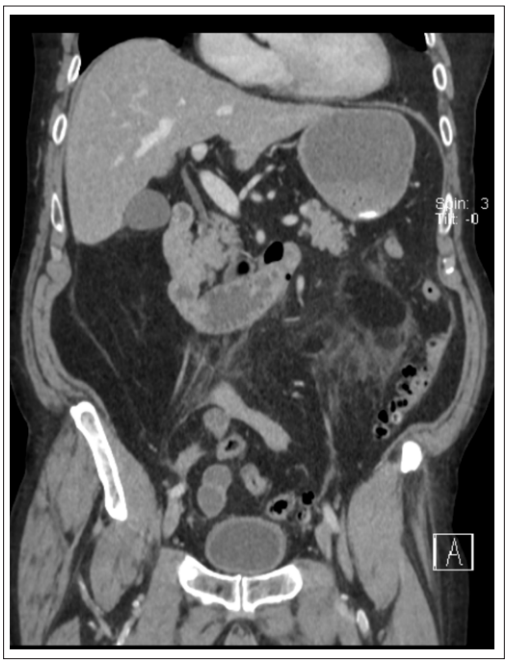

Figure 1

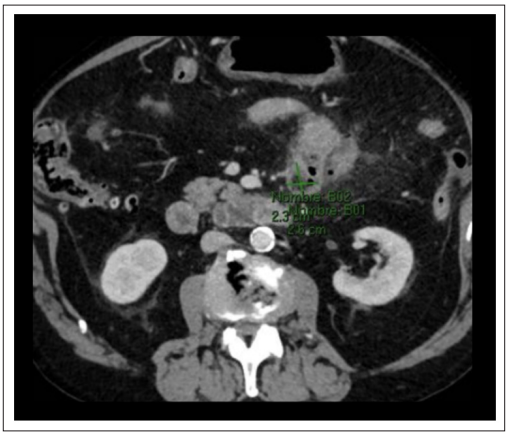

Figure 2

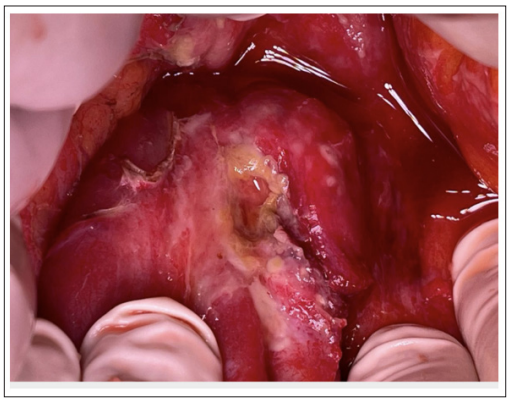

Figure 3

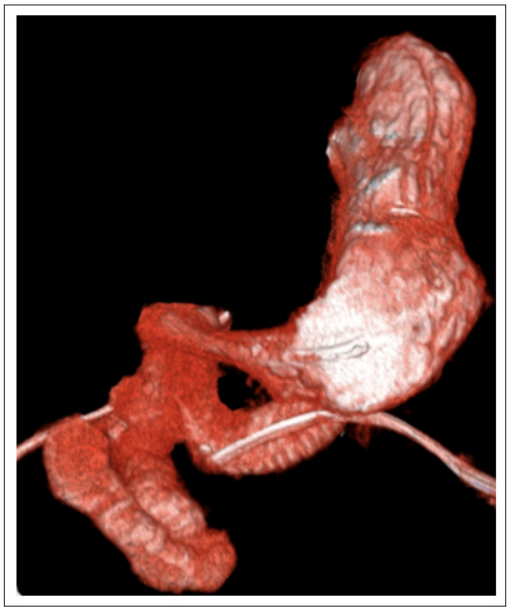

Figure 4

Conclusion

JD requires a tailored approach based on the patient's clinical presentation and the anatomical location of the diverticula. This case illustrates the successful surgical management of jejunal diverticulitis with a duodenojejunal anastomosis, emphasizing the importance of individualized treatment strategies. Despite the rarity of JD, its inclusion in the differential diagnosis for acute abdominal conditions, particularly in elderly patients, is crucial to improving outcomes. The report also highlights the need for a high index of suspicion in patients presenting with atypical abdominal pain and distention, as well as the potential for complications like perforation, which may necessitate surgical intervention. Further studies are needed to refine algorithms for managing this uncommon yet significant condition.

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