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A Rare Case Report of Perforated Jejunaldiverticulum

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Abstract: *Jejunal diverticula are found to be the rarest of all small bowel diverticula. It is usually asymptomatic and often becomes clinically relevant when complicated. This makes it a very difficult to diagnose. Complications such as diverticulitis, perforation, and bleeding and/or intestinal obstruction appear in about 10-30% of the patients which increase the morbidity and mortality rates in such individuals. Here, we present a case of jejunal diverticulosis with perforation who presented with symptoms of acute abdominal pain, vomiting and fever.*

Key words*: Abdominal pain, Diverticulitis, Intestinal perforation, Perforation*

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I. Introduction

In 1794, Sommerings first described about jejunal diverticulosis[1]. In 1807 Sir Astley Cooper specifically described jejunaldiverticulae with 75% affecting the proximal jejunum followed by 20% and 5% in the distal jejunum and ileum, respectively [2]

Diverticulosis is the condition in which there are outpouchings (diverticulae) of the intestinal mucosa and submucosa through the weakness of the muscle layers in the intestinal wall. The most common site is the colon followed by duodenum and rarely the jejunum. [1,3]Diverticula of the jejunum is less common than duodenum with an incidence of 0.1% to 1.4% . Jejunal diverticula are usually found incidentally on small bowel radiography such as double-contrast enteroclysis or at surgery

The current treatment of choice for perforated jejunal diverticulum with peritonitis is segmental intestinal resection with primary anastomosis including non-inflamed diverticula.[4]If the diverticula are extensive, resection may have to be limited to the segment containing the perforated diverticulum to avoid short bowel syndrome. Simple diverticulectomy may impair blood flow because of its mesenteric location, and therefore may lead to anastomotic breakdown or fistula formation. The overall mortality rate is 24%, with a mortality rate of 14% in cases where resection of the involved segment with primary anastomosis was done.[5] The high mortality appears to be related to the advanced age of the patients as well as to delayed diagnosis and treatment.

II. Case Report

A 26-year-old male presented with dragging upper abdominal pain of one week duration. There was a history of dyspepsia, abdominal discomfort and vomiting after meals for past one week and low grade fever associated with chills and rigors.

On examination, the patient was febrile with a temperature of 99^0 F, pulse rate - 110/min, blood pressure - 130/90 mm Hg. Abdominal examination revealed generalized tenderness with guarding.

Laboratory tests showed Hb-13g/dl, TLC-12,000/cu.mm, urea - 49mg/dl, creatinine – 0.5mg/dl. X-ray of erect abdomen revealed air under the diaphragm. Abdominal CT scan showed perforation of jejunal diverticulum in the jejunal mesenteric border [Fig-1,2].

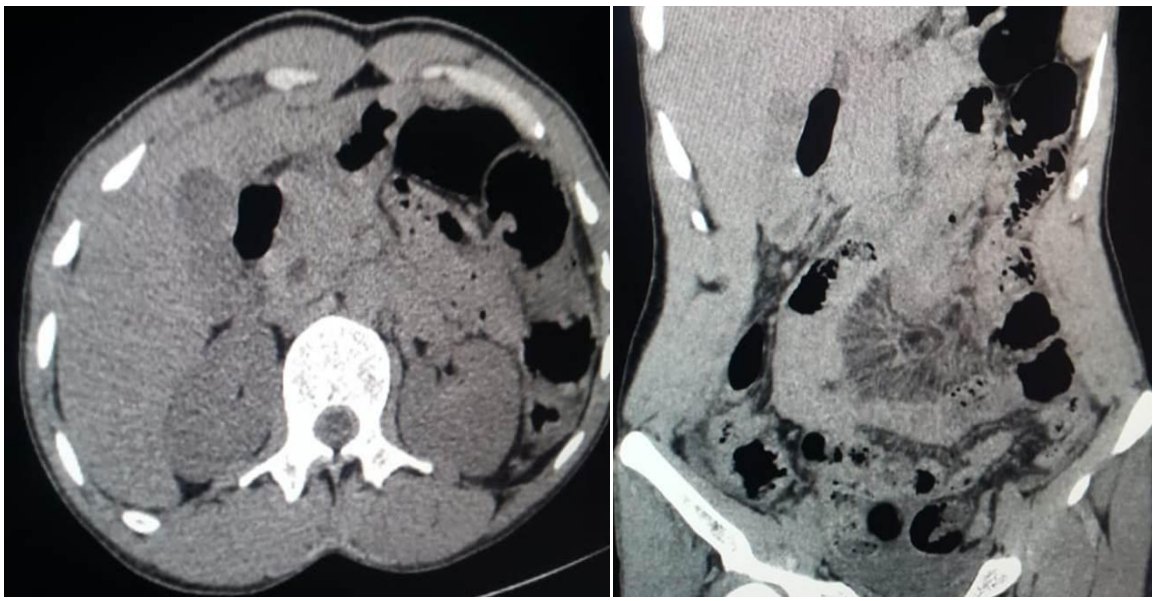

Fig-1Fig-2

Emergency midline laparotomy was performed. Intra-operatively, jejunal diverticulum was found on the mesenteric border[Fig-3]. It was located between 15cm from duodeno-jejunal (DJ) flexure. Serosal purulent exudates and multiple inter-loop adhesions were noted. There was purulent material in the peritoneum as well. Proximal jejunal resection with end to end anastomosis was done. The post operative period was uneventful and the patient was discharged on 10th day after the surgery. One month follow up was uneventful.

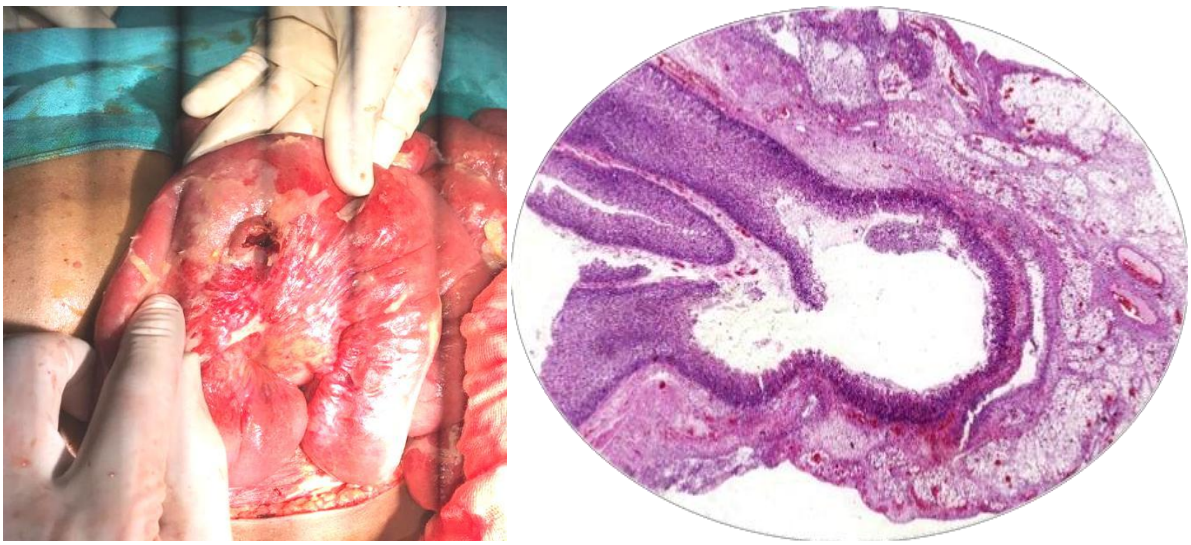

Fig-3Fig-4 H&E staining of jejunal diverticulum perforation

III. Discussion

Jejunaldiverticulae are rare and usually occur in the elderly. The condition is difficult to diagnose because patients generally present with symptoms that mimic other diseases. The most common site is the colon followed by duodenum and rarely the jejunum [1,6]The aetiology of jejunal diverticulosis is unclear. They are acquired false diverticulae (pseudo-diverticuli) which arise due to outpouching of mucosa and muscularis mucosa through the muscle coat at the point where the mesenteric vessels penetrate intestinal wall.The prevalence increases with the age and the disease presents a peak incidence at the sixth and seventh decades with a male predominance [12]

Although the aetiology is unclear, several studies done earlier have mentioned the possible aetiologies of this pseudodiverticulae. Krishnamurthy et al., suggested that intestinal dyskinesia due to abnormality of smooth muscle or myenteric plexus results in diverticulae formation [7].Kongara et al., thought that irregular

intestinal contractions increased the intraluminal pressure resulting in diverticulae formation through the weakest point [8].Falidas et al., [3], quoted that it is also found to be associated with systemic diseases like progressive systemic sclerosis and amyloidosis in which it is primarily due to intestinal dysmotility. Though it is defined as acquired false diverticula, familial predisposition has also been reported [3].

The pathophysiology of jejunal diverticulosis is largely unknown; however, it is thought to arise from motor dysfunction of the gastrointestinal smooth muscle or myenteric plexus that subsequently result in increased intraluminal pressure thereby leading to herniation of the mucosal and submucosal layers through weakened areas of the muscularis mucosa of the bowel.As jejunal diverticulitis is often asymptomatic, they commonly present with diagnostic dilemma. As there is no reliable diagnostic test, it presents as a challenging disorder from a diagnostic perspective.[10] Moreover, their rare incidence with varied clinical presentation makes thediagnosis both delayed and difficult [1]. Investigation modalities like CT scan, single or double balloon enteroscopy are useful in diagnosing small bowel disorders [11]. These false or pseudo-diverticulae are thin walled and most commonly found on the mesenteric aspect of the bowel in regions where the *vasa recta* penetrate the bowel wall [9].

IV. Conclusion

Jejunaldiverticulosis is a rare entity associated with a high morbidity and mortality. These diverticulae are usually asymptomatic in the majority of cases and usually diagnosed incidentally. When symptomatic, they can present with vague non-specific symptoms or with acute complicationslike perforation of the diverticulumas in this case which require surgical intervention. The treatment of choice is surgical excision of the affected jejunal segment. However, conservative management has been reported in selected patients to alleviate symptoms and inflammation before proceeding to a resection and primary anastomosis. If affected diverticula are not resected complications will reoccur.

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