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Jejunal diverticula with perforation in non steroidal anti inflammatory drug user: A case report

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ABSTRACT

INTRODUCTION: Multiple diverticulosis of the jejunum constitutes an uncommon pathology of the small bowel. The disease is often asymptomatic and must be taken into consideration in cases of unexplained malabsorption, anemia, chronic abdominal pain and discomfort.
CASE PRESENTAION: We are thereby reporting a 50 yr patient on chronic NSAID ingestion presenting to us with acute abdomen. On exploration, there were multiple (14) jejunal diverticuli on both mesenteric and antimesentric border from 10 cm to 90 cm distal to duedenojejunal junction with a perforation in one of the diverticulum, 80 cm distal to the ligament of Treitz. We performed a resection of a 80-cm jejunal segment involving the multiple diverticula and an end to end jejunojejunostomy.
DISCUSSION: Drug-induced jejunal perforation is known, but jejunal diverticular perforation related to steroid/treatment has been reported only once previously. Long-term NSAID therapy usually induces clinically silent enteropathy characterized by increased intestinal permeability and inflammation. Jejunal diverticulosis is a challenging disorder from a diagnostic perspective, with no truly reliable diagnostic tests. The current treatment of choice for perforated jejunal diverticula causing generalized peritonitis is prompt laparotomy with segmental intestinal resection and primary anastomosis.
CONCLUSION: Jejunal diverticula are rare lesions, and their perforation never features in the list of diagnoses for acute abdomen, especially in this part of the world. Further this unique case report opens the doors for further research to prove an assosiation between NSAID use and diverticular perforation which itself is a very rare entity.

1. Introduction

Multiple diverticulosis of the jejunum constitutes an uncommon pathology of the small bowel [9]. The disease is often asymptomatic and must be taken into consideration in cases of unexplained malabsorption, anemia, chronic abdominal pain and discomfort [9]. Related complications such as diverticulitis, hemorrhage, obstruction and perforation present high mortality and morbidity rates. Drug-induced jejunal perforation is known, but jejunal diverticular perforation related to steroid/treatment has been reported only once previously [16]. Long-term NSAID therapy usually induces clinically silent enteropathy characterized by increased intestinal permeability and inflammation [17]. In patients with diverticular disease, NSAID use increases the risk of severe diverticular infection and perforation. Jejunal diverticulosis is a challenging disorder from a diagnostic perspective, with no truly reliable diagnostic tests. We are thereby reporting a 50 yr patient on chronic NSAID ingestion presenting to us with acute abdomen, on exploration of which there was jejunal diverticular perforation.

2. Case report

A 50-year old male patient was admitted to our emergency department with an acute onset of abdominal pain and nausea over 24 h. He had a history of intermittent abdominal pain mostly localized to epigastrium for 5 years. He was suffering from a chronic pain on back of his neck (? Cervical spondylosis) for which he was on chronic treatment with diclofenac plus paracetamol combination for 15 years prescribed by some local doctor. On physical examination he was having average built with temperature of 39.8 °C and pulse was 106, BP 110/72. Examination of the abdomen revealed muscular gaurding and rebound tenderness in all quadrants of the abdomen. There Bowel sounds were hypoactive. His white blood cell count was 16.500/mm3 and hemoglobin level was 13.2 gm/dL. Radiographic images showed no free gas under diaphragm and

Abbreviation: NSAID, non steroidal anti inflammatory drugs.

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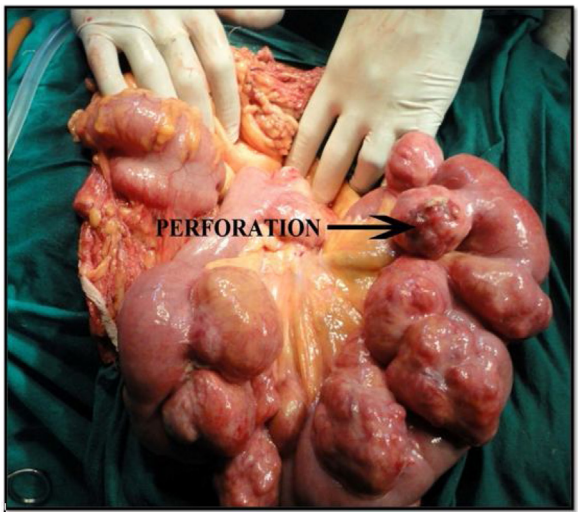

Fig. 1. Jejunal diverticula with perforation.

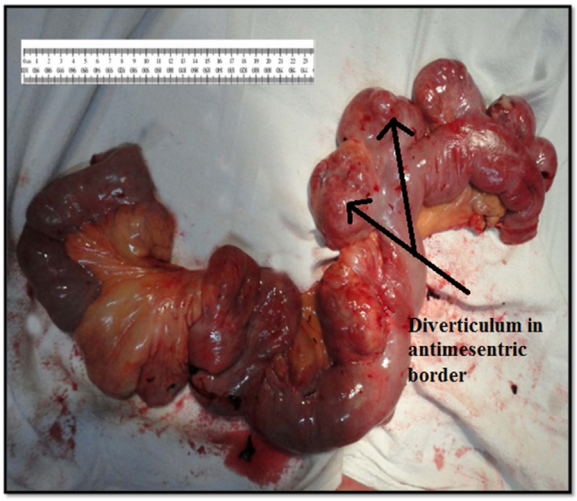

Fig. 2. Ressected 80-cm Jejunal segment involving the multiple diverticula.

multiple air fluid levels suggestive of ileus were noted. The patient was initially resuscitated with intravenous fluids and intravenous third generation cephalosporins were administered. Patient kept nil per orally with nasogastric tube for aspiration. An emergent abdominal exploration was performed (Fig. 1).

At the time of surgery, there were flakes in the abdominal cavity, with multiple (14) jejunal diverticuli on both mesenteric and antimesentric border from 10 cm to 90 cm distal to duedenojejunal junction, there were charactestically multiple secondary divericular outpouchings in 10 diverticulas with unhealthy wall with a perforation in one of the diverticulum, 80 cm distal to the ligament of Treitz. The perforated diverticulum was wrapped by the Omentum and sealed with flakes. Although the perforated diverticulum was sealed off but as described earlier there were multiple secondary diverticulas with unhealthy walls with peritonitis, patient could not be managed with conservative treatment. Hence, we performed a resection of a 80-cm jejunal segment involving the multiple

diverticula and an end to end jejunojejunostomy. The patient's postoperative period was uneventful. He began oral intake on postoperative day 3. The abdominal drains were removed on day 4. Patient developed wound infection at suture site which was managed with dressings and antibiotics. Patient was discharged on postoperative day 8. Histological examination of the perforated diverticulum revealed nonspecific inflammatory changes.

3. Discussion

Jejunal diverticulosis was first described by Somerling in 1794 and by Sir Astley Cooper in 1807 [1]. Autopsy studies reveal an incidence between 1.3% and 4.6%, whereas radiologic studies show an incidence between 0.02% and 2.3% [1]. Over 80% of jejunal diverticula occur in patients 70 years and older [2]. But in our case patient age is 50 yrs. Jejunal diverticulosis may present acutely with complications in 10–30% of all patients [8].

The incidence has been found to be higher in men (58%) than women (42%) [3]. These false diverticula are acquired outpouchings of mucosa commonly found on the mesenteric border of the jejunum [1]. These pulsion-type false diverticula occur along the mesenteric border of the intestine, where blood vessels pierce the muscularis layer of the bowel wall, causing weak areas to develop. These weak areas lead to herniation of mucosa, submucosa, and serosa while excluding the muscularis layer. [2] The most common part of the small bowel to be affected by diverticula is the proximal jejunum (75%), followed by the distal (20%) and then the ileum (5%), in our case also it was present from 10 cm to 90 cm distal to DJ flexure (Fig. 2).

Seventy seven percent of cases demonstrated multiple as opposed to solitary diverticula [4]

Jejunal and jejuno-ileal localizations are less frequent involved than duodenal, but more prone to develop complications [5].

Of these diverticula, 35% are associated with colonic diverticula, 26% with duodenal diverticula and 2% with oesophageal diverticula, respectively [6,7].

The commonest GI diverticulum is sigmoid colon diverticulum. NSAIDs have been implicated as a risk factor for perforation in diverticulitis [19]. NSAIDs inhibit the cyclo-oxygenase enzyme and cause topical mucosal damage, increasing colonic permeability. Besides, they reduce prostaglandin synthesis, which is important in maintaining an effective mucosal barrier [19].

The disease is often asymptomatic and must be taken into consideration in cases of unexplained malabsorption, anemia, chronic abdominal pain and discomfort [9]. In our case also, patient was complaining of recurrent epigastric pain for last 5 yrs.

Tsiotos et al. analysed 112 cases of jejunoileal diverticulosis and of these, 42% of cases were asymptomatic. The remaining patients had symptoms of diarrhoea (58%), chronic abdominal pain (51%) or bloating (44%).Interestingly Tsiotos et al. also found an association with Raynaud's phenomenon and systemic sclerosis [3].

Complication rates as high as 46% for jejunal diverticulosis have been reported and are known to be fatal at times [10]. More acute complications are perforation, peritonitis, bleeding, and fistula formation [2].

Largest study till date was review by Chendrasekhar et al[11] in 1995, they provided individual patient data for all case reports previously published, of 13 patients between 1971 and 1994 [11].

There seems to be a shift towards conservative treatment when properly diagnosed, a much higher percentage of accurate diagnosis, and small bowel resection is usually performed with lower mortality rates [12].

Perforation mostly occurs into the mesenteric leaves of the jejunum, leading to a mesenteric abscess. Although the perforation may be contained within the mesentery, preventing leakage into the peritoneal cavity and resultant peritonitis, it also leads to a delay in diagnosis because the classical physical examination findings of an acute abdomen are absent, which may prove disastrous when frail or elderly patients are involved [15].