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Jejunal Diverticula: A Rare Cause of Life-Threatening Gastrointestinal Perforation And Peritonitis

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Abstract: *Jejunal diverticula are rare and the condition remains mostly asymptomatic. However, they can present with vague chronic abdominal symptoms and, in some cases, acute life-threatening complications, such as gastrointestinal (GI) bleeding, bowel obstruction and perforation. We describe the clinical case of a 65-year-old female patient with a diagnosis on hospital admittance of acute abdomen and a intraoperative finding of diverticular disease of the small intestine, accompanied by complication such as intestinal perforation, and abdominal sepsis. This was surgically treated with vast intestinal resection and primary anastomosis. The patient remained hospitalized for approximately 9 days with antibiotics and other medical supports*
Keywords: *Diverticular disease, Intestinal perforation, Intestinal resection,*

I. Introduction

Jejunal diverticular disease is a rare clinical entity with an incidence of between 0.06 and 1.5% [1]. The true incidence however may be higher as the majority of jejunal diverticula are asymptomatic, and thereby remain undiagnosed. In symptomatic cases, non-specific epigastric pain and bloating are the most common complaints [2, 3]. However, life-threatening complications such as gastrointestinal (GI) bleeding, bowel perforation and obstruction have been reported in up to 18% of cases [4]. The pathology behind development is unknown. It is believed to develop as the result of abnormalities in peristalsis, intestinal dyskinesia, and high segmental intraluminal pressures.The resulting diverticula emerge on the mesenteric border (i.e., sites where mesenteric vessels penetrate the small bowel). Diverticula can be classified as intraluminal or extraluminal. Intraluminal diverticula and Meckel diverticulum are congenital. Extra luminal diverticula may be found in various anatomic locations and are referred to as duodenal, jejunal, ileal, or jejuno-ileal diverticula [5].

II. Case Report

A 67-year-old woman, presented to our emergency department with an acute exacerbation of longer existing abdominal pain. A sudden worsening of pre-existing pain was observed initially at the central abdomen and radiation to back. She had a history of acute severe pain with sudden onset 15 hours ago before admission. It was associated with high fever, difficulty in respiration and scanty urine. On physical examination, pulse 108-beats/min, temperature-102^0 F,respiration-23/min (thoracic only), features of dehydration. The abdomen was cardboard like rigidity and paralytic ileus. Laboratory investigations showed a CRP-66 mg/l, raised WBC and normal serum Amylase, Lipase. Straight X-ray of the abdomen (erect posture) showed an ileus with dilation of the small and large bowel, with signs of perforation.

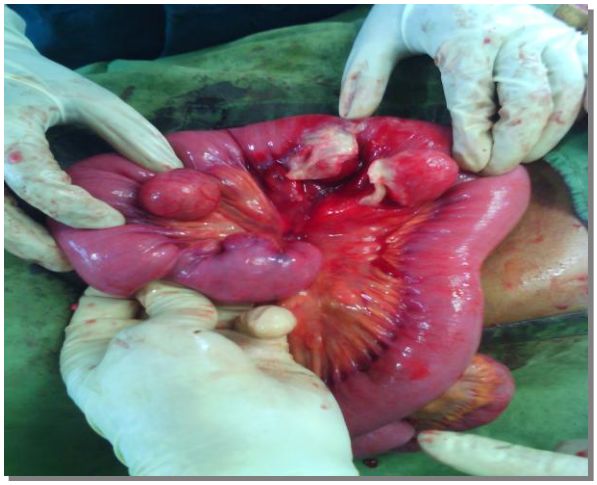

Fig. 1 Diverticulum was found in the mesenteric edge of the jejunum.

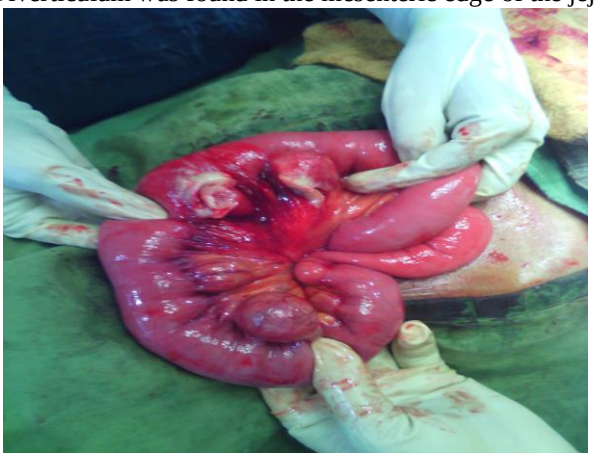

Fig. 2 Multiple diverticula in the mesenteric edge of the jejunum. Three of them are severely inflamed.

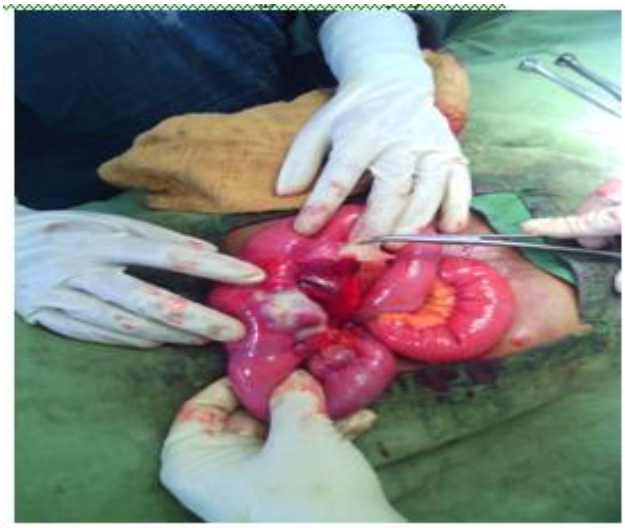

Fig. 3 One diverticulum in the mesenteric edge of the ileum (pointing shows) perforation.

The patient was admitted and treated with initial resuscitation on suspicion of a case of hollow viscus perforation. On the day of admission, emergency exploratory laparotomy was performed. During surgery there was features of perforative peritonitis and a vast diverticulosis along the mesenteric border of the small bowel. Halfway in the small bowel, few diverticulum was severely inflamed and one ruptured. A limited resection jejunum was performed with primary anastomosis including major diverticular perforation.Resection of the innumerable remaining diverticula was considered impossible. Through peritoneal toileting with NS. Closed tube drain placed at pelvic cavity Postoperatively, a 9-day course of antibiotics was administered.
Final pathology revealed several inflamed diverticula located at the mesenteric border of small intestine with peritonitis. After 12 days the patient was discharged in good health. The wound was mildly infected. The decision was made to treat similar future episodes with antibiotics alone, if dramatically elevated infection parameters or signs of perforation are absent.

III. Discussion

Diverticula of the small intestine are uncommon, with a reported prevalence ranging from 0.3 up to 23% [6]. They are congenital or acquired [4]. Small bowel diverticulitis (SBD) is rare, and before the advent of CT it was seldom diagnosed before surgery or autopsy [7]. Diverticulitis may occur in the duodenum, jejunum and ileum [5-6]. The major hypothesis focuses on dietary fibre deficiency, precipitating dysmotility, which causes pseudo-obstruction and high intraluminal pressures, after which diverticula form [6,7]. The main culprit in developing diverticulitis seems to be inspissated food, which leads to mucus secretion, bacterial overgrowth and eventual erosion of the luminal wall. This causes inflammation and focal necrosis of diverticula leading to microscopic or macroscopic perforation [9,10]. No pathognomonic signs or symptoms of SBD are present. Earlier episodes may have been present. Abdominal pain varies from intermittent to an acute abdomen. On presentation, the pain may exist for several hours, or days. It may be located in the entire abdomen and radiate to the back.

Physical examination can revealtachycardia,fever, dehydration, abdominal palpitory tenderness, to evident rebound tenderness. Owing to the nonspecific symptoms, SBD should be considered in cases presenting as appendicitis, cholecystitis, pancreatitis, peptic ulcer, twisted ovarian cyst and ectopic pregnancy . The laboratory investigations may be normal, but usually there is leucocytosis or CRP elevation.Chest and abdominal radiographs may identify signs of perforation. However, CT is the test of choice to confirm suspected SBD Diagnosing SBD is difficult and the diagnosis is rarely made preoperatively [6]. Even during surgery small bowel diverticula are difficult to recognize. No general guidelines exist for the treatment of SBD. Nevertheless, surgical management is recommended for complications, such as obstruction, perforation, sepsis, undrainable abscess and uncontrolled fistulas. Continued medical advances have reduced the mortality from SBD complications, except perforation, which has a reported mortality of 21–40%. It is therefore vital that the diagnosis of the condition can be made promptly to ensure optimal and timely management for the patient.

IV. Conclusions

Diverticular disease is usually asymptomatic, detected with the presence of one or more of the several complications described previously, and many cases are diagnosed incidentally during the treatment of these. The clinical case presented is a good example of this situation because, as previously mentioned, the patient had peritoneal irritation data and admittance to the Emergency Service with a pre-operative diagnosis of appendicitis in the elderly. Indicative of diverticular disease, macroscopic lesions were detected during surgery and were subsequently noted by histopathology findings. During surgery and post-operative management, the procedures were the correct ones and those indicated for intestinal perforation with abdominal sepsis. Small intestine diverticular disease is rare; in this case, it encompassed the entire small intestine. Therefore, there are few options to offer the patient, with ileostomy in perpetuity the most likely procedure to be performed. Diverticular disease is an entity that, as previously mentioned, is diagnosed once the several previously noted complications appear. The key that aided in this case in the survival of the patient and in the improvement of the outcome was effective and timely intervention as well as correct decision-making.

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