

PERFORATION OF DIVERTICULUM OF JEJUNUM: A RARE GASTROINTESTINAL PRESENTATION

- **ABSTRACT**

Small intestinal diverticula are very rare; their incidence ranges from 0.06 to 1.3%, with a higher prevalence after the 6th decade of life. Among these small intestinal diverticula, duodenal diverticula are more frequent, followed by diverticula of the jejunum and ileum. A jejunal diverticulum is usually asymptomatic; sometimes patients complain of vague chronic symptoms like malabsorption, pain, or nausea that easily led to misdiagnosis. Complications are rarely reported, only in 10% of patients. In this case report, we will discuss a case of 87 years old male with a 2 days history of pain abdomen. Plain radiograph study of abdomen revealed presence of gas under both domes of diaphragm suggestive of hollow viscus perforation. Physical examination suggested of soft abdomen with generalised tenderness of whole abdomen, more marked in right upper and lower quadrants. Emergency laparotomy was carried out, which revealed multiple jejunal diverticula on mesenteric border, one of which had perforated around 15 cm distal to duodena-jejunal junction.

Key Words: Jejunal, Diverticulum, Perforation.

- **INTRODUCTION**

Small intestinal diverticula are very rare; their incidence ranges from 0.06 to 1.3%^[1]. Except for Meckel's diverticulum, which is congenital, all diverticula are usually acquired. Among these, duodenal diverticula are the most frequent (in 79% of patients), followed by diverticula of the jejunum or ileum (18%) and diverticula in all segments together (3%)^[2]. The prevalence of diverticula increases with age and peaks in the 6th–8th decades of life. A jejunal diverticulum is usually asymptomatic; only 29% of the patients present with symptoms like nausea, abdominal pain, and malabsorption. Complications such as perforations, adhesion, fistula, and peritonitis are more common than massive lower gastrointestinal bleeding, and these complications are reported only in 10% of cases^[1]. Herein we report a case of jejunal diverticulosis which presented to us with perforation of one of the diverticula. Surgery is the definitive treatment option in diverticular perforation like in our case.

- **CASE REPORT**

We are reporting a case of 87-year-old male patient who came to emergency of our hospital with complaints of pain abdomen for 2 days. Patient had history of decrease food intake and generalised weakness for the past 1 month. Patient had history of Anaemia for the past 6 months, Diabetes Mellitus Type 2 and Hypertension for the past 20 years, for which he was on continuous treatment. Patient had history of left side knee surgery 8 years back for traumatic injury. Family history was negative for any gastrointestinal complaints.

On General Physical Examination, patient was conscious, oriented to time, place and person. His vital signs showed a heart rate of 79 bpm, blood pressure at 100/60 mm Hg and saturation of 98% on room air. On abdominal examination, generalised

tenderness was present more marked in right upper and lower quadrants of abdomen, guarding present, rebound tenderness present. Laboratory studies showed Haemoglobin-10.2 g/dl, WBC count- 19,300/mm³ and Platelet count-162000/mm³. A plain radiograph of abdomen showed free gas under both domes of diaphragm [Figure 1]. Patient was initially resuscitated with intravenous fluids and antibiotics. Patient was taken in operating room for emergency laparotomy. On opening of abdomen, multiple diverticula were noted at mesenteric border of jejunum for length of about 45 cm, one diverticulum of which had perforation of size around 0.5*0.5 cm at around 15 cm distal to the duodeno-jejunal junction [Figure 2]. Resection of jejunal segment containing diverticula was done and end to end anastomosis was done. Patient was shifted to ICU and was extubated one day after surgery. Patient was shifted to general ward the next day.

- **DISCUSSION**

Jejunal diverticula are the least common type of small bowel diverticula, with an incidence of less than 1%, slightly more common in men [2,3]. The pathologic description of these pseudodiverticula is an acquired outpunching of mucosa commonly found on the mesenteric border of the jejunum [4]. Multiple diverticula are seen in 77% of cases [5].

Clinical diagnosis of diverticula perforation may be difficult as the symptoms may mimic any other episode of acute abdomen and the diagnosis may easily be confused with other causes of an acute abdomen such as sigmoid diverticulitis, appendicitis, perforated peptic ulcer or ischemic bowel disease [6]. The typical presentation of jejunal diverticula is intermittent abdominal pain, accompanied by flatulence, diarrhoea or constipation in 10% to 30% cases. In a series of 112 cases of jejuno-ileal diverticulosis is analysed by Tsiotos et al., 42% were asymptomatic [2].

Among the symptomatic patients, diarrhoea (58%) was the most common clinical manifestation followed by chronic abdominal pain (51%) or bloating (44%). Common acute complications include diverticulitis, bleeding, intestinal obstruction and perforation [4].

Upright abdominal X-ray is useful for assessment of acute abdomen, but its contribution to the diagnosis of perforated jejunal diverticulosis is limited to providing information on intra-peritoneal free air and air-fluid bowel levels. Abdominal computerized tomography (ACT) has been established as the most valuable imaging technique for identifying the presence, site and cause of gastrointestinal perforation [6]. ACT with double oral and intravenous contrast may allow the diagnosis of perforated jejunal diverticula, based on the following findings; free intra-peritoneal air; concentrated bubbles of extra luminal air in close proximity to the bowel wall, focal asymmetric wall thickening, oedema or thickening of the surrounding fat or fascial planes.

Yet there are many reasons for causing small bowel perforation that should be considered in differential diagnosis. Meckel's diverticulitis is one of such examples among another diverticular disease of the small bowel. But, unlike the Jejunal diverticulum, Meckel's diverticulum is true, congenital diverticula, and involves the antimesenteric side of the bowel. Meckel's diverticulitis usually presents in adults with intestinal obstruction due to intussusceptions rather than perforation or bleeding. Non-steroidal anti-inflammatory drugs are another cause of ulcerations and

perforation. Although they primarily affect the stomach or ileum but their effect is not limited to these regions and can affect any point throughout the small bowel.

Perforated neoplasms are difficult to distinguish and the most likely neoplasm in the jejunum is lymphoma.

Treatment is only indicated if complications appear. In our case resection of a small bowel segment was performed in order to avoid any future complications in the remaining diverticula. Invagination, excision and simple closure are associated with greater mortality than resection^[5]. Emergency surgical intervention is required in 8-30% of these complicated patients^[6].

- **CONCLUSION**

Even though colonic diverticulitis is almost always suspected in an elderly patient presenting with abdominal pain and fever, jejunal diverticulitis should be considered as a differential diagnosis. It requires a high degree of clinical suspicion, given the low incidence of the condition. Early diagnosis and prompt treatment are essential to prevent complications and to improve the patient's outcome. And in case of perforation of perforation like in our case patient require urgent lifesaving surgeries.

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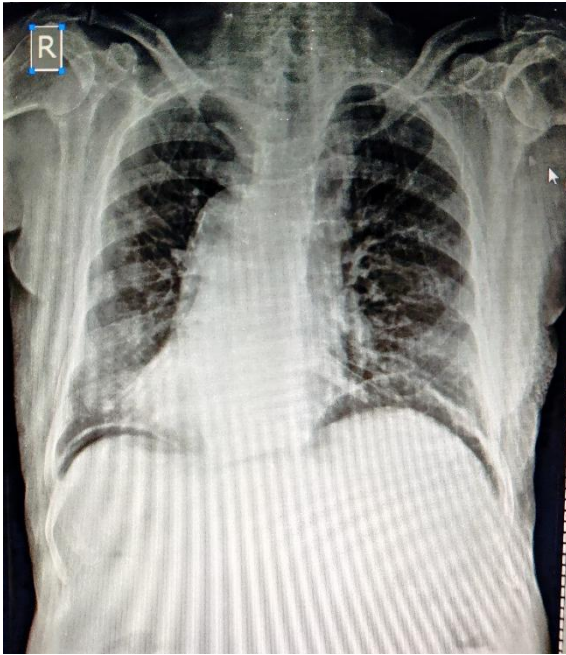


Figure 1 XRAY Erect Abdomen showing gas under both domes of diaphragm.



Figure 2 Intra Operative image showing multiple jejunal diverticuli on mesenteric border with perforation of one diverticulum.