

Case Report

PERFORATED JEJUNAL DIVERTICULA IN A PATIENT WITH MULTIPLE GIANT DIVERTICULA OF THE DUODENUM AND JEJUNUM: A CASE REPORT

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ABSTRACT

Multiple diverticulosis of duodenum and jejunum are very uncommon pathology of the small bowel. The disease is usually asymptomatic and in some cases present with unexplained malabsorption, anemia, chronic abdominal pain or discomfort. Complications such as diverticulitis, perforation, bleeding or intestinal obstruction appear in 10-30% of the patients and increasing morbidity and mortality rates. We herein report a case of a 72 year-old man which presented with vomiting, intermittent upper abdominal pain, distension and obstipation since nine days before admission. Preoperative radiologic and an abdominal computed tomography scan examination revealed multiple air fluid in the abdominal cavity and bilateral polycystic kidney. An emergency laparotomy was carried out which revealed multiple duodenum and jejunal diverticula, one of jejunal diverticula had been perforated and causing peritonitis. Segmental resection of jejunum perforation site was performed and patient discharged uneventfully. Multiple Jejunal diverticulosis in the elderly can lead to significant morbidity and mortality and so should be suspected in those presenting with crampy abdominal pain and altered bowel habits.

INTRODUCTION

Jejunal diverticulosis is a rare condition with variable clinical and anatomical presentations, But Multiple diverticulosis of duodenum and jejunum are very uncommon (Singal *et al.*, 1991). The prevalence of small intestinal diverticula on autopsy ranges from 0.06% to 1.3% (Woubet *et al.*, 2007). Most small bowel diverticula are thought to be acquired pulsion lesions (Singal *et al.*, 2012). The majority of jejunal diverticulosis cases are discovered incidentally during radiological investigations (0.02% and 2.3%) (Benya *et al.*, 1991). The clinical presentations of acquired jejunoileal diverticulosis are vague and diverse. Presenting complaints such as intermittent abdominal pain, constipation and diarrhea have been demonstrated in up to 90% of the patients and imaging tests have mostly atypical appearance and may not correlate with the clinical symptoms (Woubet *et al.*, 2007; Benya *et al.*, 1991). Diagnostic tools are plain abdominal X-ray series, Barium follow-through study and enteroclysis, Computed tomography and Multi slice CT (Benya *et al.*, 1991; Bitterling *et al.*, 2003). There is some contraversion on the management of asymptomatic jejunal diverticular disease, if asymptomatic diverticula found incidentally during laparotomy for other reasons, should be left alone (Singal *et al.*, 2012). Some complications are potentially life threatening and require early surgical treatment (Wojciech *et al.*, 2008). Surgical exploration is the treatment of choice for almost all acute complicated cases (Wojciech *et al.*, 2008). We report a symptomatic case of diffuse jejunum diverticulosis simultaneously affecting duodenum and bilateral polycystic kidney.

CASES

A 72-year-old man presented to the emergency department with nine day history of generalized abdominal pain, with multiple episodes of vomiting. The patient had a past medical history of open prostatectomy and umbilical hernia operations. On physical examination: a temperature 38°C, heart rate 105, blood pressure 120/70 and respiratory rate 18 breaths/min. abdominal examination revealed a mild generalized abdominal tenderness and distension. Laboratory investigations revealed an elevated white blood cell

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count (WCC $17 \times 10^9/L$), liver and renal test was normal. Abdominal X-ray (Figure 1) shows multiple dilated loops of small bowel. A subsequent computed tomography (CT) scan of the abdomen and pelvis (Figure 2) revealed a thickening of the duodenum and dilatation of the proximal jejunum with suspension of small intestinal obstruction. The patient underwent a laparotomy which identified multiple duodenum and jejunal diverticula, about 100centimetre of jejunum was involved with diverticula. There was a small perforation with a collection of pus near the base of the one of the jejunal diverticula which causing localised peritonitis. Segmental resection in perforation site with perforated diverticula was done.proximal jejunum was anastomosed to the fourth portion of the duodenum .Others diverticulain of duodenum and jejunal was left place in their position (Figures 3 and 4). Pathology revealed a 10-cm segment of small bowel with an 8 x 6 x 5-cm diverticulum arising from a 2-cm mesenteric defect along the joujenal wall. The diverticula layer contains only mucosa and submucosa. There was no sign of malignancy. The patient did well postoperatively and tolerating a regular diet and was discharged to home on postoperative day8. The patient was doing well at six month follow-up.

DISCUSSION



Figure 1: Abdominal X-ray displayed multiple dilated loops of small bowel

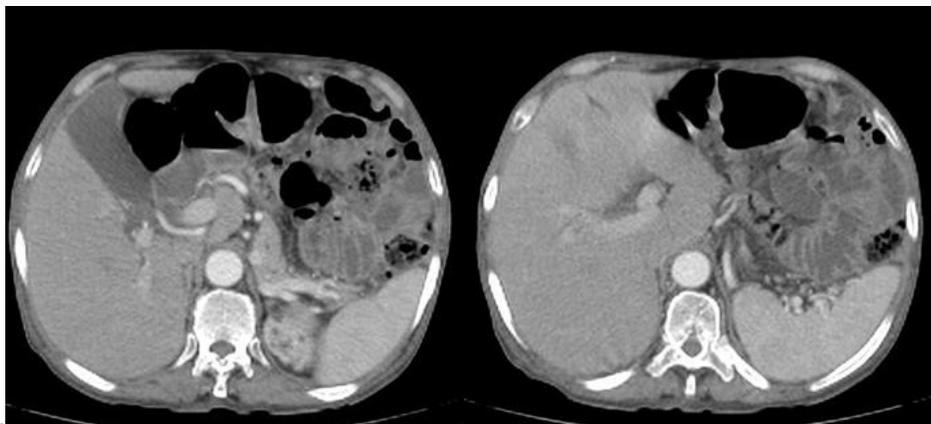


Figure 2: CT scan of abdomen showing thickening and dilatation of the proximal jejunum, air and fluid level, suggestive of a small bowel obstruction

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Acquired Jejunal diverticula may be subdivided into the primary and secondary. The cause of Primary acquired diverticula are herniation of mucosa and submucosa through the muscular layer of the mesenteric border of the bowel wall and secondary formed to some pathology such as tuberculosis and Crohn's or abdominal operations (Englund and Jensen, 1986).



Figure 3: Intraoperative findings: Multiple giant diverticula arising at the mesenteric border of the jejunum and duodenum



Figure 4: Intraoperative findings: Multiple giant diverticula arising at the mesenteric border of the jejunum, and one of them was perforated

Jejunal diverticula are more common in elderly males (58%). They commonly affected proximal part of jejunum (75%), followed by the distal jejunum (20%) and the ileum (5%). The diverticula of jejunum can be present with diverticula of colon (30-75%), duodenum (15-42%), esophagus (2%), stomach (2%) and urinary bladder (12%) of the patients (Englund and Jensen, 1986). But multiple diverticulosis of jejunum is an uncommon pathology of the small bowel (Singal *et al.*, 2012; Evangelos *et al.*, 2011). Jejunal diverticulosis should be suspected in patients those presenting with crampy abdominal pain and altered bowel habits (Singal *et al.*, 2012; Evangelos *et al.*, 2011). The disease is usually asymptomatic and must be one of our diagnoses in cases of unexplained malabsorption, anemia, chronic abdominal pain or obstruction and peritonitis (Singal *et al.*, 2012; Evangelos *et al.*, 2011) as our case which present with perforation and peritonitis. In a reviewed of the literature and they noted symptomatic diverticula present in 29% of the cases (Evangelos *et al.*, 2011). Diagnostic perspective of Jejunal diverticulosis is a challenging because there are no truly reliable diagnostic tests (Singal *et al.*, 2012). Diagnosis is usually

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made when the disease becomes symptomatic or complicated. Simple radiographs can not to make the diagnosis. Abdominal or chest radiographs may demonstrate evidence of perforation, such as free air under the diaphragm or free peritoneal air, evidence of intestinal obstruction, or evidence of ileus, including multiple air-fluid levels and bowel dilatation, as our case. In cases of complicated jejunal diverticulosis, plain abdominal X-ray series can show distension of small bowel, air-fluid levels and air under diaphragm but Barium follow-through study and enteroclysis are more specific although their utility is limited in emergency conditions (Benya *et al.*, 1991). Computed tomography may show localized areas of out-pouching of the mesenteric side of the bowel, focal thickening wall of intestinal due to inflammation or abscesses, free abdominal fluids and air, as our finding in present case (Bitterling *et al.*, 2003). Multi slice CT scan can diagnosing jejunoileal diverticula and more specific than enteroclysis for diagnosis of small bowel diseases (Bitterling *et al.*, 2003). Multi-slice CT is very useful to make the diagnosis of jejunal diverticulosis (Bitterling *et al.*, 2003). CT may identify thickening or inflammation of the jejunum or localized abscess formation (Bitterling *et al.*, 2003). In our case this finding was observed. The complications of jejunoileal diverticulosis are chronic abdominal pain, malabsorption, hemorrhage, diverticulitis, obstruction, and perforation, and occur in 10%-30% of the patients (Singal *et al.*, 2012). Our case present with obstruction but following laparotomy we found loculazid peritonitis due to perforation of diverticula. Asymptomatic jejunoileal diverticulosis does not require intestinal resection as seen in our case (Singal *et al.*, 2012; Evangelos *et al.*, 2011). Complications requiring surgical intervention in 8%-30% of the cases. In the elderly patients Jejunal diverticulosis can lead to significant morbidity and mortality (Novac *et al.*, 1997). Once jejunal diverticulosis has been diagnosed incidentally, conservative medical management should be done to alleviate symptoms and reduce the risk of complications associated with diverticular disease (Singal *et al.*, 2012). In complicated cases, Exploratory laparotomy and resection of affected intestinal segment with primary anastomosis is mandatory in case of perforation, abscesses and obstruction (Singal *et al.*, 2012; Woubet *et al.*, 2007; Evangelos *et al.*, 2011). Novac *et al.*, (1997) treated perforated diverticulitis with conservatively (antibiotic administration and CT-guided drainage of abdominal abscesses) (Novac *et al.*, 1997). If diverticula involve a long intestinal segment, the resection should be limited to the perforated or inflamed intestinal segment in order to avoid a short bowel syndrome, because in most case jejunal diverticula are multiple, as our case (Woubet *et al.*, 2007; Evangelos *et al.*, 2011). Other surgical approaches such as primary closure of the perforation and omental patch and the diverticulectomy should be avoided because have high mortality rates (Woubet *et al.*, 2007).

Conclusion

Jejunal diverticulosis should be suspected in patients which presenting with crampy abdominal pain and altered bowel habits. It should kept high in the differentials in older patients presenting with unexplained abdominal. If complications presente, surgical resection with primary anastomosis is the preferred treatment option. If asymptomatic diverticula found incidentally during laparotomy for other reasons, should be left alone.

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