

A Rare Case of Multiple Perforated Jejunal Diverticulae - Case Report

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Case report

Abstract: Jejunal diverticula are very rare with an incidence of less than 0.5%¹ and are usually asymptomatic. The etiology remains unclear. Since they arise from herniation of the mucosa and submucosa through a weak portion of the bowel they are classified as false diverticula of the pulsion type. Complications occur in 10 to 30% of patients (Ref.²²). They are chronic abdominal pain, Blind loop syndrome, malabsorption, steatorrhea, megaloblastic anemia, hemorrhage, diverticulitis, obstruction, abscess formation, intussusception, volvulus²³, small bowel obstruction due to enteroliths^{24,25,26,27} and rarely perforation. Jejunal diverticula have a higher rate of complication than other small bowel diverticula²². Diagnosing complicated acute jejunal diverticulosis based on simple clinical evaluation is extremely difficult^{35, 36}.

Here we present a case of multiple jejunal diverticulae with perforations diagnosed during laparotomy and managed by segmental resection and end to end anastomosis.

Introduction

Jejunal diverticula are very rare with an incidence of less than 0.5%¹ and are usually asymptomatic. They usually lead to chronic non-specific symptoms and only rarely acute complications develop. Here we present a case of acute abdomen with multiple perforated jejunal diverticulae.

Case Report

A 56 years old male came to our hospital with chief complaints of abdominal pain for 3 days. The pain was sudden in onset, moderate, continuous, vague aching type present in the lower abdomen and it was aggravated by food. He had three episodes of vomiting in two days, which contained food particles, and was not blood stained, non bile stained and non projectile. He also had moderate intermittent fever and loose stools for two days. The was not blood stained. There were no other significant symptoms. He did not have any comorbid medical illness and never underwent any surgery before. There was no history of contact with tuberculosis patients or history of chronic drug intake. He used to smoke 5 cigarettes per day for the past 20 yrs and he is a nonalcoholic. The family history was not contributive. On clinical examination, he was poorly built and moderately nourished. He was clinically not anaemic or icteric. Pulse

rate 70/Min and BP was 100/60 mm HG. Systemic examination was normal. The abdomen was soft, distended and tenderness was present in all quadrants. A 3 hours later guarding and rigidity also developed. Clinically free fluid was also present. The bowel sounds were sluggish. There was tenderness on per rectal examination. Lab tests revealed impaired renal profile (urea 130 mg/d L; creatinine 4.5mg/d L). Other blood tests were normal. Abdominal x-ray showed air under right dome of diaphragm, dilated small bowel loops. Ultrasound study showed free fluid in the abdomen and a homogenous lesion measuring about 4.3*3.7cm with doppler flow in the right Iliac fossa. Some ascending colon pathology of inflammatory nature with perforation was suspected. After volume resuscitation we did an emergency laparotomy. Intraoperatively there was minimal bile stained fluid. There were many diverticulae on the mesenteric border of the proximal 25cm of Jejunum and two of them had perforations on the dome. The distal Jejunum, Ileum and colon were normal. Segmental resection and end to end anastomosis of the proximal jejunum and a thorough abdominal lavage was done. The patient had an uneventful postop period.

Discussion

Small bowel diverticula are uncommon, occurring in 0.5–2.3% of small bowel contrast studies¹ and 0.06–1.3% of post-mortem examinations². They manifest most frequently in the sixth and seventh decades of life. Symptomatic cases are rare and generally complicated. Jejunal and jejuno-ileal localization is nearly three times less frequent than duodenal, but about four times likely to develop complications³⁹. The etiology remains unclear. The cause is supposed to be motor dysfunction of the smooth muscle or the myenteric plexus^{3,16,17} causing disordered contractions of the small bowel, increased intra-luminal pressure^{4,16,17} and herniation of the mucosa and submucosa through the weakest portion of the bowel where the mesenteric vessels enter the bowel wall⁶. So they are classified as false diverticula of the pulsion type^{1,2,4}. They maybe multiple and occur in any position

around the circumference of the bowel. However, most are seen along the mesentery. Sometimes they may be within the leaves of the mesentery making the diagnosis difficult. They vary in size from a few millimeters in diameter to large outpouchings. These diverticula occur more frequently in the proximal jejunum and distal ileum where the vasa recti of greatest diameter are found⁶. A connection between intestinal diverticulosis and rare neuromuscular disorders such as Cronkhite-Canadasyndrome⁷, Fabry's disease⁸, mitochondrial neurogastrointestinal encephalomyopathy⁹, Ehlers-Danlos syndrome^{10,11}, Progressive systemic sclerosis, myasthenia gravis, Primary or secondary amyloidosis has been observed in different studies^{12,15}. Two cases of familial predisposition have been reported earlier^{14,15}. Isolated jejunal diverticulosis may coexist with diverticula of the esophagus (2%), of the duodenum (26%) and of the colon (35%)¹⁶. Jejunal diverticula have a higher rate of complication than duodenal diverticula, so surgical removal on discovery may be preferred over conservative management²². Complications of jejunal diverticulosis requiring surgery occur in upto to 30% of patients²². They are chronic abdominal pain, Blind loop syndrome, malabsorption, steatorrhea, megaloblastic anemia, hemorrhage, diverticulitis, obstruction, abscess formation, intussusception, volvulus²³, small bowel obstruction due to enteroliths^{24,25,26,27} and rarely perforation. Diagnosing complicated acute jejunal diverticulosis based on simple clinical evaluation is extremely difficult^{35,36}. The diagnosis becomes evident only during laparotomy²⁸. Erect abdominal X-rays may show air-fluid levels throughout the small bowel. The classic triad associated with jejuno-ileal diverticular disease consists

of vague abdominal pain, anaemia and dilated loops of small bowel²⁹. If small bowel diverticulum is suspected then a barium meal follow-through study or enteroclysis should be performed³⁰. Enteroclysis has a greater sensitivity at detecting diverticulae³⁰ and should be done in patients with persisting symptoms after a negative endoscopic and contrast studies of both upper and lower gastrointestinal tracts⁴⁰. Multi-slice CT is very helpful in diagnosing jejunal diverticulosis and is superior to conventional enteroclysis for small intestine diseases³¹. Small bowel diverticulitis should also be considered in the differential diagnosis of a small bowel inflammatory mass demonstrated by CT Scan³². Diagnostic laparoscopy, laparoscopic exploration and lavage is an effective alternative in an acute attack which can obviate the need for major abdominal explorations and resections³³. In jejunal diverticular disease, obvious perforation, bleeding or mechanical complications require resection with primary anastomosis. Blind loop syndrome not responding to drugs or nonmechanical obstruction from severe jejunal dysmotility in the presence of diverticula can also merit a segmental resection. A dilated, hypertrophied jejunal segment with large diverticula found coincidentally at laparotomy should be resected⁶. The majority of ileal diverticulae do not require surgery, except in cases of perforation, bleeding, or obstruction which occur less frequently than in jejunal disease⁶. Complicated small diverticulitis remains a diagnostic dilemma because of non-specific and ambiguous symptomatology. Surgical exploration is the treatment of choice for almost all acute complicated cases³⁴.



Figure 1: Three false diverticulatae of 3*3cm with atures of inflammation are seen in the mesenteric Side of proximal jejunum.



Figure 2: Perforations seen on the dome of the diverticulatae.



Figure 3: Asymptomatic diverticulatae seen in the proximal jejunum.

Conclusion

A high degree of suspicion is necessary in view of the high mortality and morbidity rates resulting from a delayed diagnosis of the disease. The treatment of choice is segmental resection of the affected jejunal segment.

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