

CASE REPORT

Diverticular Disease of the Small Intestine: A Case Report

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ABSTRACT

BACKGROUND

Diverticulosis is a disease of the large intestine. However, diverticulosis of the small intestine is a rare pathological entity. We report a case of diverticular disease of the small intestine.

CASE SUMMARY

A 78-year-old man presented a 2-days history of abdominal pain. The pain was of gradual onset, severe and was associated with constipation and vomiting which was bilious. Abdominal examination revealed a distended abdomen with mild epigastric and periumbilical tenderness and an empty rectum on digital rectal examination. Imaging investigations showed features of bowel obstruction evidenced by dilated bowel loops with multiple air fluid levels. Intra-operatively, there were multiple diverticulosis of the jejunum and ileum with fibrous bands attaching the intestines to the anterior abdominal wall and thickened greater omentum. The operative procedure performed was excision of fibrous bands and restoration of luminal patency.

CONCLUSION

Diverticulosis is a disease of the large intestine and occurrence in the small intestine is quite rare. The jejunum and ileum were involved in the index case report.

KEYWORDS

Diverticulosis; Jejunum; Ileum; Rare; Small intestine

INTRODUCTION

Intestinal diverticula are mucosal herniations in the wall of the bowel through points of entry of blood vessels, which are relatively weak areas, into the muscle layer [1]. The large intestine is the most common site where diverticula are formed; it is quite uncommon in the small intestine. The prevalence of diverticular disease increases with age [2]. Diverticulosis and diverticulitis are the presence of diverticula and inflammation of such diverticula, respectively [3]. It's been postulated that bowel spasms increase the intraluminal pressure creating more diverticula and enlarging existing ones [3]. Diverticula could be classified into true or false: True diverticula are composed of all bowel layers (such as Meckel diverticulum) whereas false diverticula are made up of only the mucosa and submucosa [4]. The pathogenesis of diverticular disease is not fully understood but is thought to be multifactorial (environmental and genetic) [1]. Colonic motility, fibre intake, vitamin D levels, obesity and physical activity are important considerations in the etiology of diverticulosis.

Diverticular disease of the small intestine is very rare and has been reported in 0.3%-1.3% of post-mortem samples and 0.5%-1.9% of contrast media studies with the duodenum as the most common site [5]. The rate of complications from duodenal diverticula is high. 10% to 20% of those with duodenal diverticulum experience complications. Less common is the diverticula of the jejunum and ileum with reported incidence of 0.07%-1.0% on imaging and 0.07%-0.8% on autopsies [6,7]. However, one study from Mexico reported multiple diverticulosis of the entire small intestine from the ligament of Treitz to the ileocecal valve [3]. We report a rare case of diverticular disease affecting the jejunum and ileum. The rarity of this condition makes it worthy of being reported. To the best of our knowledge, this is the first case of small bowel diverticula reported in sub-Saharan Africa.

CASE SUMMARY

A 78-year-old man presented with a 2-days history of abdominal pain. Abdominal pain was biting in nature and of severe intensity. The pain was of gradual onset, colicky and progressively got worse. It was generalized and intermittent. Abdominal pain was associated with vomiting. The vomiting was not projectile, and the patient had several episodes. Vomitus initially contained poorly digested food, but this later became bilious.

Above symptoms were associated with abdominal distension which was progressive, and he also had constipation which was absolute. There was no history of prior passage of blood in stool. The patient also had fever which was low grade following onset of abdominal pain. He had not had any surgery in the past, no significant weight loss and no intake of herbal concoction. He is neither a known hypertensive nor diabetic.

On clinical evaluation, the patient was in no distress with a nasogastric tube in situ draining bilious effluent. The pulse rate was 112 beats per minute, full volume and regular. Blood pressure was 100/70 mmHg (sitting), temperature was 36.8°C, SPO₂ 90%. Abdominal examination revealed a distended abdomen with mild epigastric and periumbilical tenderness. There was no ascites, evidenced by negative fluid thrill. The liver and the spleen were not palpable. Bowel sounds were absent. Digital rectal examination gave an empty rectum with prostate gland of benign characteristics. There was fine crepitation on the left lung base.

On investigation, hemogram and serum chemistry were all within normal range. Chest X-ray showed bibasal lung consolidation. Plain abdominal X-ray indicated dilated small bowel with multiple air/fluid levels. Abdominal

computed tomography (CT) scan reported features of small bowel obstruction with cut-off in the ileal region without any identifiable masses.

He was optimized and taken to theatre for laparotomy. At surgery, the findings were multiple diverticulosis on the mesenteric border of the jejunum and ileum (Figure 1).



Figure 1: Diverticulosis of the jejunum and ileum (blue arrow).

There were also fibrous bands on the small bowel with attachments to the anterior abdominal wall and thickened greater omentum. The operative procedure performed was excision of fibrous bands and restoration of luminal patency. Post-operatively, the patient did well, and the entire post-operative period was uneventful.

DISCUSSION

Historically, Alexis Littre, in 1700, was the first to describe the diverticular disease which he termed “diverticular hernia” without explaining it. However, in 1849, Jean Cruveilhier, a French anatomist, was the first to describe in detail the diverticular herniations through the muscular wall of the bowel. William James Mayo, an American surgeon, first reported surgical management of diverticulosis [8]. No race or gender predilection of small intestinal diverticulosis has been reported [9].

A diverticulum is a bulging sac in any portion of the gastrointestinal tract. The most common site for the formation of diverticula is the large intestine. Small intestine diverticular disease is much less common than colonic diverticular disease. The most common symptom is non-specific epigastric pain and bloating sensation. Major complications include diverticulitis, gastrointestinal bleeding, acute perforation, pancreatic and biliary disease, intestinal obstruction, intestinal perforation, localized abscess, malabsorption and anemia.

Diverticula are rare before the age of 40 years and are common after that age. The patient in the index report is a 78-years old man. Theoretically, everyone at the age of 90 years has many diverticula [3]. Most persons with diverticula do not have symptoms. However, when symptoms occur, it could be in the form of diarrhea, abdominal cramping with or without features of intestinal obstruction and bleeding [10]. Our patient presented with abdominal pain and other features of intestinal obstruction but there was no bleeding. Other complications that may arise from diverticulosis include diverticulitis, gastrointestinal haemorrhage, gastrointestinal obstruction,

acute perforation, pancreatitis, biliary disease, localized abscess, malabsorption, anemia and bacterial overgrowth [11].

Like in colonic diverticulosis, small intestinal diverticulosis results from abnormalities of intestinal peristalsis, intestinal dyskinesia and high intraluminal pressure. Small bowel diverticula occur at the mesenteric border where mesenteric vessels penetrate muscular wall [11,12]. The expected laboratory findings in diverticulosis are leucocytosis and anemia [3]. However, these were not found in the index patient and the reason for this is not known.

The treatment of asymptomatic diverticulosis is the reduction of intestinal spasm, and this could be achieved through consumption of diet rich in fibre [3]. Initial care of symptomatic diverticulosis includes bed rest, nil by mouth, placement of nasogastric tube and administration of intravenous fluid and antibiotics [13]. Conservative management includes encouraging intake of fluids, and use of bulk forming agents such as fiber and cellulose supplements. A fiber diet is recommended to improve motility of the gastrointestinal tract. However, surgical treatment of diverticulosis is indicated in complicated diverticulosis and in giant diverticula with a high risk of infection and perforation [3]. Our patient had bowel obstruction hence needed surgery. Other options of treatment include ileostomy and antibiotics.

CONCLUSION

Diverticulosis is a disease of the large intestine and occurrence in the small intestine is quite rare. The incidence of small intestinal diverticulosis increases with age and the duodenum is mostly affected. The jejunum and ileum were involved in the index case report. Majority of the diverticulosis are asymptomatic, and diagnosis is usually made incidentally or when complications of the diverticular disease arise.

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