

CASE REPORT**SMALL GUT VOLVULUS, A RARE TWIST, IN THE SETTING OF AN EVEN RARER ENTITY; MULTIPLE GIANT JEJUNO ILEAL DIVERTICULA**

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Small gut volvulus with multiple Jejunio-ileal diverticulosis is an unusual pathology of the small intestine with a scarce number of cases reported so far. It usually goes unnoticed because it is often asymptomatic but complications like diverticulitis, perforation, bleeding or intestinal obstruction can occur in 10–30% of the cases. Mechanical obstruction, if it occurs, can be caused by adhesions or stenosis due to diverticulitis, intussusception at the site of the diverticulum and volvulus of the segment containing the diverticula. Acute volvulus of the small bowel is a serious abdominal emergency that poses a difficulty in diagnosis and delayed operative intervention can lead to dire consequences. We herein report the case of a 42-year-old man presented at the emergency department with acute abdominal pain, absolute constipation and vomiting. Preoperative investigations followed by laparotomy revealed small gut volvulus and multiple giant jejunal and ileal diverticula.

Keywords: Small gut volvulus; small intestinal volvulus; diverticula; volvulus, jejunioileal diverticulosis, intestinal obstruction, exploratory laparotomy, acute abdomen

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INTRODUCTION

Multiple diverticulosis is a rare pathology if it occurs in the small bowel. Its incidence is about 0.1–1.5%.¹ It is usually silent but may present with complications such as bleeding, perforation or obstruction. Mechanical obstruction occurs in 2.3–4.6% of cases², caused by adhesions or stenosis due to diverticulitis, intussusception at the site of the diverticulum and volvulus of the segment containing the diverticula. Acute small bowel volvulus is a serious abdominal emergency. Diagnosis is troublesome and the consequent late operative intervention results in high morbidity and mortality. When the whole or a large segment is involved the patient's condition worsens with disturbing rapidity.

CASE

A 42-year-old male presented in the emergency department with a 48 hours history of pain in abdomen, vomiting and absolute constipation. His medical history was unremarkable except for mild constipation on and off, and intolerance for pulses and rice. He was not taking any drugs and had no significant past surgical history. On physical examination, he had a grossly distended tense and tender abdomen, his bowel sounds were audible. He was vitally stable with a temperature of 99F, his laboratory investigations revealed a raised total leukocyte count of 11000, with baseline investigations, electrolyte and renal profile being normal.

His erect abdominal X-Ray showed multiple gas shadows on the left side. His abdominal ultrasonological reporting was unremarkable.

The patient was kept nil per mouth, had a nasogastric tube inserted and started on intravenous fluids, antibiotics (ciprofloxacin and metronidazole) and pain medication

with strict intake output record and laboratory investigations repeated daily.

The patient's condition was not improving and he underwent laparotomy on the second day of admission. Upon exploration, we found dilated whole small gut volvulus and multiple diffuse giant diverticula starting from 2 feet distal to duodeno-jejunal junction, involving whole of the jejunum and the proximal portion of ileum, with about 700 ml of reactionary fluid in the abdomen. The malrotated gut was viable. The diverticula ranged in size from that of a golf ball and larger. They were multiple and uncomplicated. Derotation of volvulus was done, with no resection. The patient went into ileus for 4 days post op with normal electrolytes and laboratory investigations and was managed conservatively. Later on the post-operative course was uneventful.



Figure-1: X-Ray erect abdomen showing multiple gas shadows



Figure-2: Size of diverticulum

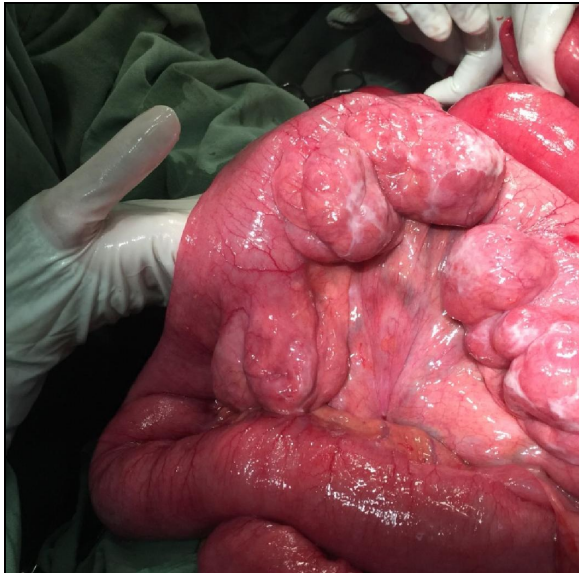


Figure-3: Multiple diverticula at the mesenteric border of small gut

DISCUSSION

Small bowel volvulus is the torsion of the small intestine and its mesentery.³ It is extremely unusual and one is not likely to see many cases so as to be familiar with its varying clinical presentation, this contributes to significant morbidity and mortality. The chief symptom is abdominal pain which may be in onset and accompanied by one of the following; nausea, vomiting, distention and peritoneal irritation in any combination. Clinically there is no conclusive sign on examination, laboratory or radiological finding³. Definitive diagnosis can only be made on an exploratory laparotomy.

Operatic intervention offers the best treatment option in patients specially those having associated gangrene of bowel.⁴ The treatment depends on the per op condition of the bowel. In cases with viable bowel, a simple derotation is sufficient. Fixation is not indicated and patients who have had only derotation done have not been known to have recurring disease on follow up.⁵

In cases with gangrenous bowel segments a resection and primary anastomosis can be attempted or a stoma can be made. If a small intestinal volvulus is a finding in an adult, diverticulosis must be taken into consideration, as the two entities can be interlinked.⁶ Jejunio-ileal diverticula (excluding Meckel's diverticulum) are pseudo diverticula caused by mucosal and submucosal herniation through the muscular layer in places of minor resistance to the intraluminal pressure such as the anatomic points where blood vessels penetrate the intestinal wall.⁷ A large liquid filled diverticulum may act as a fulcrum causing volvulus.⁸

Since jejunal diverticulosis is usually silent⁹, it is usually diagnosed when symptoms or complications develop. In such cases, abdominal x ray series show distended small intestinal loops, air fluid levels and air under diaphragm. Barium follow-through and enteroclysis have more specificity but they cannot be done in emergency conditions. Computed tomography may demonstrate mesenteric border out-pouching, focal intestinal wall thickening, free fluid in abdomen and pneumoperitoneum.² Endoscopic studies do not distinguish diverticula but help in exclusion of other differential diagnosis.

Surgery is not a requirement for silent jejunio-ileal diverticulosis.¹⁰ Some authors argue that uncomplicated cases with mild symptoms be treated with a conservative approach but if symptoms persist and are unresponsive to treatment, patient requires surgery.⁷ Others are partial to an aggressive operative approach due to

high rate of complications in the small intestine compared to other sites and a lower post-operative risk of an elective laparotomy.¹¹

In cases that present with complications, resection of affected segment with anastomosis is imperative, the extent of which will depend on the length of intestine involved. If a long intestinal segment is involved, as usually occurs, resection should be limited to the affected segment as there is a risk of short bowel syndrome. Alternative techniques such as diverticular invagination, primary repair and omentoplasty of a perforated point and diverticulectomy should be refrained from since they have high mortality rates¹⁰ and recurrence may occur as the forming mechanism of diverticula (myopathy, neuropathy etc) is left behind.

In the case reported in this paper, the patient experienced chronic constipation on and off but he never sought medical help. Intestinal obstruction was his chief complaint at presentation caused by small intestinal volvulus due to jejunal diverticula.¹¹ The initial conservative treatment did not alter the course, so an exploratory laparotomy was performed four days after the initial admission.

CONCLUSION

Jejunal diverticulosis is more frequent than reported, affecting usually old age group and should be contemplated in diagnosing cases with acute or chronic abdominal symptoms. The treatment of choice is resection, although cases with asymptomatic diverticula can be left as such. Although rare, it is an important cause of acute abdomen. It's variable clinical picture makes it very difficult to diagnose. A

delay in intervention results in a high mortality and morbidity rate which necessitates a high degree of suspicion for early diagnosis. The treatment of choice for small intestinal volvulus is de-rotation of the gut and resection of gangrenous/ischemic segment if any.

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