

CASE REPORT

Ileo-ileal knotting as an uncommon cause of acute intestinal obstruction

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Abstract

Small bowel obstruction (SBO) is one of the most common acute surgical conditions that require urgent evaluation and treatment. Several common causes are known in the general surgical practice, and the causes are different in the developing and developed world. In this article, we present a case of an acute SBO secondary to ileo-ileal knotting in a 50 years old Ethiopian female patient. The diagnostic difficulty and the need for urgent treatment of the condition are discussed.

INTRODUCTION

Small bowel obstruction (SBO) is a very common acute surgical emergency [1]. The differential diagnosis of SBO is a lot including primary volvulus, hernias, adhesions, bands, intussusceptions and intestinal knotting [2, 3]. Several types of intestinal knotting are reported in the literature including ileo-sigmoid knotting [3–7], which is the commonest form of intestinal knotting [3].

The other causes of intestinal knotting reported include appendico-ileal, ileocaecal, ceco-sigmoid and ileo-ileal knotting [6–9]. The main reported problem in intestinal knotting is the difficulty in early and preoperative diagnoses. In this article, we present a 50 years old female patient who presented with signs and symptoms of SBO and diagnosed intraoperatively to have ileo-ileal knotting. The presentation, differential diagnosis and complication of ileo-ileal knotting are discussed.

CASE REPORT

A 55 years old female patient presented on 26 January 2011 to the emergency department of the St. Paul's Hospital, Addis Ababa, Ethiopia, with a complaint of crampy abdominal pain of 2 days duration. She had also vomiting of ingested and bilious matter and progressive abdominal distention. She developed absolute

constipation 1 day before the presentation. The patient had no history of previous surgery and symptoms suggestive of hernia. Upon examination, she was in pain. Her pulse rate was 120 bpm and feeble, blood pressure was 80/50 mmHg, respiratory rate 32/min, temperature 36.5°C and saturation of oxygen 90% with atmospheric air. Her tongue and buccal mucosa were dry. Abdomen was grossly distended with generalized tenderness and guarding. The bowel sounds were hypoactive. Digital rectal examination revealed empty rectum, no blood on examining finger.

With the impression of gangrenous SBO 2° to small bowel volvulus, she was resuscitated and investigated; hematocrit was normal and WBC 10.6×10^3 . Plain abdominal film showed dilated loops of small bowel with multiple air–fluid levels and absent rectal gas shadow.

Patient was prepared and urgent exploratory laparotomy done through midline incision. Upon entering the peritoneal cavity, there was ~1000 ml dark hemorrhagic fluid. The proximal loop of ileum was knotting on the distal ileum. The entrapped loop of ileum was gangrenous, extending until 8 cm from ileocecal valve (Fig. 1).

Resection of the whole gangrenous segment of the ileum was performed and continuity of the gut restored by end-to-end jejunio-ileal anastomosis, situated 8 cm from the ileo-cecal valve. The remaining small bowel was ~150 cm.

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Figure 1: Intraoperative pictures showing loop of the small intestine making a knot on the distal ileal segment resulting in gangrene of most of the loops.

Postoperatively the patient was kept NPO, IV fluids, antibiotics and analgesics. Clear fluid diet started on the 4th postoperative day, and solid diet the next day. On the 6th postoperative day, patient developed watery diarrhea but had no fever, abdominal pain or vomiting. The abdomen was soft, no tenderness, no sign of fluid collection and normoactive bowel sound. All investigation including the white cell count and abdominal ultrasound were normal.

With the assessment of short bowel syndrome, the patient was continued with fluid replacement, oral rehydration solution. Patient was advised on diet modification. The diarrhea decreased without the need for anti-diarrheal drugs. She was discharged on her 14th postoperative day, and diarrhea completely stopped. Patient followed for the next 30 months and had uneventful course except difficulty to gain her previous weight.

DISCUSSION

Small bowel obstruction is a common emergency surgical condition. The most common causes of SBO in the developing countries, including Ethiopia, are small bowel volvulus and abdominal wall hernia [1, 2]. Other causes include intussusceptions, adhesions, ileo-sigmoid knotting, neoplastic conditions and ileo-ileal knotting [6, 7]. Reports of ileo-ileal knotting are rare in the literature both in the developed and developing nations. To our knowledge, there is no such report in Ethiopia.

The etiology of intestinal knotting, including ileo-ileal knotting, is unknown. The condition is most common in areas where small intestinal and sigmoid volvulus is common [7]. This may be related to the diet in the area that is bulky and high in fiber [7]. It may also be associated with excessive motility of the ileum. The mortality rate is ~50% [10]. Ileo-ileal knotting presents like most SBO with no particular/classical signs and symptoms to it except a rapid deterioration and progress.

Treatment should be started as early as possible with aggressive IV fluid resuscitation, insertion of nasogastric tube and broad-spectrum IV antibiotic. When the patient is adequately resuscitated, emergency laparotomy should be performed through long midline incision, and the cavity should be carefully explored [7]. In cases of intestinal knotting, the operative procedure of choice is to carefully unravel the knot if both loops are found viable, to perform an en bloc resection of the gangrenous segments if found gangrenous. Decompression of the gangrenous segments or untying a gangrenous knot is not recommended. It is very difficult, and there is a very high risk of peritoneal contamination following rupture of the gangrenous segment [10].

Postoperatively patient should be monitored for hydration status, anemia and signs of anastomotic leak. Depending on the length of the remaining small bowel, follow-up should include for signs of short bowel syndrome. When that happens, diet modification should be the first consideration. In our case, the symptom of short bowel syndrome improved fast most likely because the ileo-cecal valve was intact. So, maintaining the ileo-cecal valve should be considered when possible.

Though ileo-ileal knotting is a rare clinical entity, it should be always considered in the differential diagnosis of patients with signs and symptoms of SBOs. Because the condition is associated with high rate of morbidity and mortality, a high index of suspicion remains the most useful tool. The possibility of short bowel syndrome as the complication of the treatment should be considered and treated accordingly. Whenever possible, avoid by passing or resection of the ileo-cecal valve.

CONFLICT OF INTEREST STATEMENT

None declared.

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