CASE REPORT

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

Engida Abebe*, Biruhtesfa Asmare, and Abebe Addise

Department of Surgery, St. Paul’s Hospital Millennium Medical College, Addis Ababa, Ethiopia

*Correspondence address: Department of Surgery, St. Paul’s Hospital Millennium Medical College, PO Box 1271, Addis Ababa, Ethiopia. Tel: +251911704107; Fax: +251112774787; E-mail: engidaabebe@yahoo.com

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, ileocecal, 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 febrile, 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 20 to small bowel volvulus, she was resuscitated and investigated; hematocrit was normal and WBC 10.6×10³. 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 ileo-cecal valve (Fig. 1).

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

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, the 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.

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, the 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.

CONFLICT OF INTEREST STATEMENT

None declared.

REFERENCES

1. Tsegaye S, Osman M, Bekele A. Surgically treated acute abdomen at Gonder University Hospital, Ethiopia. East Cent Afr J Surg 2006;12:53–7.
2. Tegegne A. Small intestinal volvulus in adults of Gonder Region, northwestern Ethiopia. Ethiop Med J 1992;30:111–7.
3. Kotisso B, Bekele A. Ilio-sigmoid knotting in Addis Ababa: a three-year comprehensive retrospective analysis. Ethiop Med J 2006;44:377–83.
4. Dunkerley GE. Intestinal obstruction due to knotting of two loops of small intestine. Br J Surg 1953;41:66–70.
5. Shepherd JJ. Ninety-two cases of ileosigmoid knotting in Uganda. Br J Surg 1967;54:561–6.
6. Pendse AK, Prajapat G, Sharma A, Sharma M. Ileo-ileo knotting causing intestinal obstruction. Indian J Pediatr 1988;55:639–40.
7. Cowley DJ, Iweze F. Knotting of the small intestine. Proc Roy Soc Med 1971;64:54–5.
8. Jones B. Ceco-sigmoid volvulus—a new entity? Br J Radiol 1978;51:466–9.
9. Yang AD, Lee C-H. Appendico-ileo knotting resulting in closed-loop obstruction in a child. Pediatr Radiol 2002;32:879–81.
10. Uday SK, Venkata PKCh, Bhargay PRK, Kumar S. Ileoleal knot causing small bowel gangrene: an unusual presentation. I J CRI 2012;3:28–30.