

Ileocecal knotting in a young man with mobile cecum and ascending colon: a very rare and unique cause of intestinal obstruction

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Abstract

We report a case of successful management of short bowel syndrome in a young patient with gangrene of most of intestine following ileocecal knotting. Aggressive resuscitations, timely surgical intervention and use of parenteral nutrition have a good outcome. Key words: knotting, intestinal obstruction, shock, short bowel syndrome

1 Introduction

The causes of bowel obstruction may be external to the bowel (extrinsic), within the wall of the bowel (intrinsic), or due to a luminal defect that prevents the passage of gastrointestinal contents. Most common causes of small bowel obstruction are adhesions, hernias, small intestinal volvulus while large bowel obstruction is often caused by tumors and volvulus(1).

Advanced bowel obstruction leads to bowel dilation and retention of fluid within the lumen proximal to the obstruction, while distal to the obstruction, as luminal contents pass, the bowel decompresses. If bowel dilation is excessive, or strangulation occurs, perfusion to the intestine can be compromised, leading to necrosis or perforation, complications that increase the mortality associated with small bowel obstruction(1).

Various types of intestinal knot syndromes such as ileoileal knots, ileosigmoid knots and appendico-ileal knots do cause intestinal obstruction though very rarely(2). Even rarer causes are knotting of the ileum by meckel's diverticulum, ileocecal knotting and midgut volvulus(3-5). These could be due to failure in the last phase of rotation that is fixation of proximal and distal portions to the retro peritoneum. These can primarily cause volvulus because of narrow mesenteric base(6).

In these paper we present a 21 year old male Ethiopian patient who presented in a critical condition with sign and symptoms of small bowel obstruction but found to have ileocecal knotting with mobile cecum and ascending colon.

2 Case report

A 21 year old young Ethiopian man presented with abdominal cramps, bilious vomiting, and abdominal distention of 48 hours duration to Zewditu Memorial Hospital, Addis Ababa, Ethiopia. He had no history of similar illness before and there were no history of prior surgery.

At presentation he was acutely sick looking with feeble pulses and a blood pressure of 60/40 mm of mercury. Abdomen was moderately distended with direct and rebound tenderness all over and absent bowel sounds. Rectum was empty on per rectal examination.

Investigations revealed white cell count of 18,000, hemoglobin of 15.49gm/dl and his blood group is AB positive. Erect abdominal x-ray showed multiple air fluid level and distended bowel loops suggestive of small bowel obstruction (figure 1).

Aggressive resuscitation with crystalloids started and his blood pressure recovered to 100/60mm of mercury and his pulse become well palpable and he produced adequate urine. He was then explored through a long midline incision.

Laparotomy showed a very mobile cecum and ascending colon(not attached to posterior abdominal wall) and the proximal ileum and jejunum was wrapped around the base cecum as well as ascending colon. Most of jejunum, whole of ileum and most of ascending colon were gangrenous. The knot were unwrapped and the gangrenous intestine packed with warm saline for 10 to 15 minutes (figure 2). We were able to salvage only 40 cm of jejunum and the rest were resected. The remaining jejunum was anastomosed with transverse colon and abdomen closed.

He was kept in an intensive care for three days. Later he developed frequent diarrhea of ten to fifteen times a day. This was managed with fluid replacement, anti-motility drugs, and proton pump inhibitors and after the 10th day parenteral nutrition. The diarrhea decreased gradually and he was discharged home after 20 days of hospital stay.

3 Discussion

Intestinal knot syndromes occur when part of an intestine wraps around the base of a loop of another bowel. The most common variety is ileosigmoid knotting which occurs when an ileum wraps around the base of the sigmoid and passes beneath itself forming a knot. The earliest reported case was that of Parker in 1845, entitled, "Case of Intestinal Obstruction: Sigmoid Flexure Strangulated by the Ileum(2).

Since then there are a lot of reports of iliosigmoid knotting in world literature especially from Africa including Ethiopia(7).

The other rarer varieties are ileoileal knots and appendiculoileal knotting. We are here reporting another type of knotting that were reported only twice in world literature(8). The first report was in 2007 by Tulsi Menon and colleagues(9) and the other was by Arkaprov Roy et al from Kolkata, India in 2011(10).

Intestinal obstruction by knotting is a very dangerous acute abdominal condition resulting in the development of gangrene in both loops of bowel involved in a short time. Our patient presented with a two days duration of symptoms in a state of shock and had majority of small bowel, cecum and ascending colon gangrenous(3).

In this patient in addition to ileum most of jejunum was involved in wrapping around the mobile cecum and ascending colon and all these structures were found to be gangrenous. There were only 40 cm of viable jejunum remaining and anastomosis between jejunum and transverse colon has to be done.

The presence of a mobile cecum and ascending colon is known to predispose to mid gut volvulus as well as knotting by ileum and appendix(11,12).

The patient developed symptoms of short bowel syndrome which was aggressively treated with fluid and electrolyte replacement as well as parenteral hyper alimentation.

Short bowel syndrome in adult is often the consequence of repeated resections for inflammatory bowel disease and occasionally for a gangrenous small bowel volvulus or mesenteric ischemia and has not been reported for intestinal knot syndromes(13).

4 Conclusion

Ileocecal knotting should be considered as possible cause of intestinal obstruction and short bowel syndrome. Aggressive resuscitations, timely surgical intervention and use of parenteral nutrition have a good outcome.

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Author's contribution

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Availability of data and materials

All the necessary information is mentioned in text of case report.

Ethical approval and consent to participate

Ethical approval were gained from the hospital for the report.

Consent to publication

Consent to publish were gained from the patient.

Competing interests

No competing interest to disclose

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