Ileosigmoid Knot: A Rare Cause of Intestinal Obstruction

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Ileosigmoid knotting also known as compound volvulus or double volvulus is a rare cause of intestinal obstruction. Here, we present a case of acute intestinal obstruction in shock. The patient was resuscitated taken up for an emergency exploratory laparotomy, which revealed a large volume of hemorrhagic fluid and dilated gangrenous loops of ileum and sigmoid. A loop of ileum had encircled the base of sigmoid to form a knot resulting in gangrene of both the ileum and the sigmoid colon. Resection of gangrenous ileum and sigmoid colon with ileo-ileal and colorectal anastomosis with a temporary diversion colostomy was done.

Keywords: Anastomosis, Compound volvulus, Double volvulus, Ileosigmoid knot, Resection

INTRODUCTION

Ileosigmoid knot (ISK) also called double volvulus, or compound volvulus is a rare surgical emergency seen commonly in certain African, Asian and Middle Eastern nations in adult males in the fourth decade.¹-⁴ It forms when a loop of ileum wraps around the narrow base of an elongated colon.³ The diagnosis of this condition is difficult, and a high index of clinical suspicion is required as the radiographic findings are sporadically described.² Resuscitation, followed by surgery is of prime importance to reduce mortality.

CASE REPORT

A 34-year-old male patient came to the casualty with history of acute colicky pain, abdominal distention and absolute constipation of 24 h duration. On examination, patient was in shock, had tachypnea and dehydration with signs of peritonitis. Erect X-ray abdomen (Figure 1) revealed dilated small and large bowel with multiple air-fluid levels involving small and large bowel. Ultrasound abdomen showed dilated loops of intestine with moderate ascites. His routine blood examination was within normal limits. The patient was resuscitated and taken up for an emergency laparotomy that revealed a large volume of hemorrhagic fluid and dilated gangrenous loops of sigmoid and ileum. A loop of ileum had encircled the base of sigmoid tightly in the form of a knot resulting in gangrene of both the ileum and the sigmoid colon (Figure 2). The gangrenous segments were resected and bowel continuity was achieved by an ileo-ileal and a descending colorectal anastomoses. A temporary diversion colostomy was also done.

DISCUSSION

Parker first reported ISK in 1845⁶ and Dunkerley reported the first case from India in 1953.⁷ It occurs when a loop of hyper motile ileum descends into the left paracolic gutter and encircles the redundant sigmoid colon with an elongated mesocolon and a short attachment at the base of the mesentery.⁵-¹⁰ Other contributory factors may include a high bulk diet consumption, internal herniation, ileocecal intussusception, Meckel diverticulitis with a band, late pregnancy and floating caecum.¹³ Four types of ISK are described where Type I, which is the most common type, occurs when ileum revolves around sigmoid. Type II occurs when sigmoid revolves around the ileum, Type III when the ileocecal portion revolves around the sigmoid and undetermined is when it is difficult to differentiate between the active and the passive component. The authors’ case was a Type I ISK. ISK can be suspected when there is a triad of small bowel obstruction, radiographic features of predominantly large bowel obstruction and inability to insert a sigmoidoscope.¹ Whirl sign, described on

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spillage of the toxins.\textsuperscript{10} In early stages, when the bowel is not gangrenous the knot can be untied to look for vascularity and then decision regarding resection can be made, but is seldom practiced.\textsuperscript{1,4} En masse resection of the gangrenous bowel with bowel continuity achievement is the usual procedure done.\textsuperscript{7,9} In our case, a temporary transverse colostomy was performed to facilitate healing of the distal anastomosis, which was closed after 3 months.

**CONCLUSION**

Acute intestinal obstruction secondary to ISK is rare. Suspicion, early diagnosis, pre-operative rapid fluid resuscitation and adequate antibiotic cover, advancements in anesthesia, early laparotomy, intraoperative accurate assessment of bowel viability and post-operative intensive care are essential to improve the survival of ISK.

**REFERENCES**


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