

Ileosigmoid Knotting: An Unusual Cause of Intestinal Obstruction

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ABSTRACT

Ileosigmoid knot is also known as compound volvulus or double volvulus. It consists of either an intertwining or a knot forming between a loop of ileum and sigmoid colon. This lead to a complex intestinal obstruction and may result in strangulation of one or both the segments of bowel loop. We report a case of pregnant woman who presented with acute abdominal pain. Following resuscitation she was operated and Ileosigmoid knotting was found. Loops of ileum and sigmoid colon were found gangrenous. Resection of ileal loop and stoma was fashioned while resection and anastomosis of sigmoid colon loop was performed. Recovery was uneventful.

Key words Ileosigmoid knotting, Double volvulus, Closed loop obstruction

INTRODUCTION:

Ileosigmoid knot (ISK) is an unusual cause of intestinal obstruction.¹ It is reported more frequently from East Africa. Males are more frequently affected, usually in their fourth decade. It rapidly leads to gangrene thus an early diagnosis and treatment is warranted. It must be differentiated from sigmoid volvulus as endoscopic treatment is contraindicated in this condition.^{2,3} Generalized peritonitis and sepsis may lead to poor outcome. After hemodynamic stabilization, immediate surgical intervention is required. We report a patient with ISK to highlight clinical features and outcome of this rare condition.

CASE REPORT:

A 28 years old patient in 3rd month of pregnancy was brought to emergency department with history of generalized abdominal pain for one day. This was associated with progressive abdominal distension and three episodes of vomiting. Pain was not relieved by taking analgesics. Patient was in severe pain with signs of dehydration. Pulse was 104 beats / minutes and BP 100/60mm Hg. Generalized abdominal distension with tenderness was present.

Laboratory investigations showed a white cell count

of 20000/mm³ and hemoglobin of 9.8gm%. Serum electrolytes and clotting profile were in normal limits. X-rays were not done due to pregnancy. After resuscitation with IV fluids and starting antibiotics, patient underwent emergency exploratory laparotomy. On opening peritoneal cavity hemorrhagic fluid came out. Gangrenous sigmoid volvulus with distal ileal loops twisted around it was found (Fig I). Resection of gangrenous ileum and sigmoid colon was done and end to end anastomosis of colon made. Ileum was brought out as ileostomy. Postoperative course was uneventful and patient was discharged in stable condition. Intrauterine death of fetus occurred later and was evacuated. Stoma reversal was done after three months.

DISCUSSION:

Ileosigmoid knot is rarely reported from countries other than East Africa. The condition is common in particular geographical location may be due to racial



Fig. I: Gangrenous gut is visible.

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in men of Baganda tribe of East Africa.³ Three factors are responsible for ileosigmoid knot; a long small bowel mesentery and a freely mobile small bowel, a long sigmoid colon on a narrow pedicle and finally, the ingestion of a high bulk diet in presence of an empty small bowel. Abdominal wall relaxation during sleep or postpartum period also plays an important role in its etiology. Knotting leads to closed loop intestinal obstruction with early onset of gangrene of both the ileal loops and the sigmoid colon in most of the patients. The diagnosis of this condition is difficult because of its infrequency and atypical radiographic findings. Our patient was a pregnant female thus x rays were not done. CT scan plays a major role in the evaluation of acute abdomen, thus it may be used for making early diagnosis.⁴ Preoperative diagnosis is very difficult.

Plain abdominal x rays may show the characteristic double closed loop obstruction, with the sigmoid colon in the right upper quadrant and the small bowel loops in the left. CT scan may reveal the classical "whirl sign" of volvulus, created by the twisted mesentery and bowel.⁵ The whirl is reported to be visible on a large number of contiguous slices in an ileosigmoid knot, as compared to that in sigmoid volvulus. A radial distribution of the intestine and mesenteric vascular structures on CT scan can also suggest the diagnosis.

Four types of ISK are described based upon the mechanism of formation of the knot. In type I (the commonest), the ileum is the active component, wrapping itself around the sigmoid colon (passive component). In type II, it is the other way round. In type III, only ileocecal segment acts as the active component, while in type IV (undetermined type) it is not possible to differentiate the two components from each other. Types I and II are further sub classified into A and B depending on whether the torsion is clockwise or counterclockwise, respectively.⁶

After aggressive resuscitation and hemodynamic stabilization, prompt laparotomy should be performed, as done in index case. Making a prolonged attempt to untwist the knot is not recommended.⁷ Decision about stoma formation and anastomosis will depend upon how advance the pathological event is and condition of the patient. Ileosigmoid knot is a rare but life threatening cause of closed loop intestinal obstruction. An urgent exploratory laparotomy may improve the chance of survival in these patient.

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Conflict of Interest:

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