A Rare Cause of Intestinal Obstruction: Ileosigmoid Knot

Nazım Ağaoğlu

Department of General Surgery, School of Medicine, Karadeniz Technical University, Trabzon, Turkey

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Ileosigmoid knotting is a rare surgical emergency producing strangulated intestinal obstruction in which a loop of the ileum encircles the loop of the sigmoid colon and then knots on itself. It is relatively common in many parts of Africa (1). Ileosigmoid knot is common in males in their fourth decade but also reported in children (1,2).

In this condition the onset of intestinal obstruction is acute and there is rapidly increasing abdominal distension. Vomiting is an early feature and patient's general condition deteriorates rapidly (3). Unfamiliarity with the condition could have disastrous consequence at surgery (4). A case of ileosigmoid knot which is very rare in Turkey is presented and discussed.

Case report

87 years old male patient admitted to our Surgical Department complaining of acute abdominal pain and absolute constipation for one day duration. The pain was severe, constant, localized to the periumbilical region, and accompanied with nausea and vomiting. He had past history of peptic ulcer surgery 20 years ago and history of intestinal obstruction due to adhesions 7 years ago which had been treated conservatively. He had previously two attacks of myocardial infarction and recently been on treatment for congestive heart disease.

On admission the patient was afebrile, pulse rate 50/minute, blood pressure 70/50 mmHg. Abdominal physical examination revealed marked distension with rigidity, tenderness all over the abdomen and rebound tenderness was positive. No abdominal mass was palpable. The patient had stenosis of three coronary arteries, and severe ventricular systolic dysfunction diagnosed with coronary angiography and ventriculography 4 years ago.

Biochemical laboratory data were unremarkable. Plain abdominal radiography in the erect position showed dilatation of the bowel and multiple air-fluid levels in the center and left side of the abdomen (Figure 1). Abdominal ultrasonography demonstrated moderate amount of free peritoneal fluid in the perihepatic and perisplenic spaces, and between the distended intestinal loops. An explorative laparatomy was carried out with provisional diagnosis of intestinal obstruction. Throughout a median incision the presence of ileosigmoid knot in which a loop of the ileum encircled the loop of the sigmoid colon was confirmed and both loops were gangrenous. Resection of the gangrenous ileal loop with subtotal colectomy and ileorectal anastomosis was performed. Postoperatively the patient was transferred to intensive care unit where he required mechanic ventilation and inotropic therapy to support his compromised respiratory and cardiovascular reserve but unfortunately he was lost on the second postoperative day following an extensive myocardial infarction.

Figure 1. Plain abdominal radiography in the erect position showed gaseous dilatation of the bowel and multiple fluid levels in the center and left side of the abdomen.

Discussion

Ileosigmoid knot is common in tropical countries where it forms 15-25% of pelvic colon obstruction. In this condition a loop of the ileum encircles the loop of the sigmoid colon and then knots on itself producing double

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closed loop obstruction. In nearly all cases there is extensive necrosis of the small intestine and pelvic colon. The clinical features of ileosigmoid knot presents with acute severe abdominal pain due to early ischaemia of the bowel associated with vomiting, abdominal distension and in case of any delay in diagnosis the general condition of the patient will deteriorate rapidly (3). Therefore early diagnosis of the condition is essential. Sigmoidoscopy might be useful as it will show intense congestion and deformity of the mucosa of the rectum and pelvic colon. Plain abdominal radiography will reveal omega-shaped distended loop of large bowel above the pelvic inlet and fluid level of distended small bowel loops. In this particular patient; persistent acute abdominal pain, vomiting, generalized rigidity and tenderness, marked abdominal distension and dilatation of the bowel with multiple fluid levels on plain abdominal radiography had led to consider the provisional diagnosis of intestinal obstruction.

Early and prompt treatment of the condition by resection of gangrenous ileosigmoid knot is essential. In the literature en bloc removal of gangrenous ileosigmoid knot is stressed because this technique will limit spillage of blood from the long non-viable segments into the portal circulation and the circulation of the lungs and kidneys which will bring bacterial endotoxins and other chemical products from the ischaemic bowel (3). En bloc removal of gangrenous knot and reestablishment of intestinal continuity by enteroenteric and primary colorectal anastomosis combined with protective proximal transverse colostomy or caecostomy, and Hartmann procedure in which iliac end colostomy is fashioned and the upper rectal stump is closed constituted the most frequently preferred operations (2,4,5). In this reported case the gangrenous ileal loop was resected with subtotal collctomy and continuity of the intestine was reestablished by ileorectal anastomosis. The aim of this relatively extensive resection with ileorectal anastomosis was to restore the continuity of the intestine in one session without necessity for any kind of colostomy that might increase the morbidity and duration of hospitalization in such a high risk patient. On the other hand we felt that resection of the gangrenous colon with primary colorectal anastomosis in unprepared dilated colon that is loaded with faeces might be an unsafe alternative surgical procedure.

Cardiovascular complication in this particular patient was imminent as clinical and previous radiological evaluation of the patient revealed compromised cardiovascular reserve and he was considered highly risky for the operation. Consequently he developed cardiac arrest after an extensive myocardial infarction in the early postoperative course.

In conclusion early diagnosis of the ileosigmoid knot and en bloc resection of the gangrenous segments of the bowel is essential and intestinal continuity can be restored by ileorectal anastomosis without any colostomy procedure.

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Correspondence:

Dr. Nazım Ağaoğlu

K.T.Ü. Lojmanları 36/4

Trabzon 61080–TURKEY

Tel. No.: 0090 462 3775634

Fax No.: 0090 462 3250518

E- mail: nagaoglu@meds.ktu.edu.tr