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Case Report

Primary small bowel volvulus in adult: an unusual case report

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ABSTRACT

Small bowel volvulus (SBV) is an uncommon case which the small intestine rotates around its own mesenteric axis. SBV generally occurs in newborns. We report the case of a 69-year-old man who has been coming with complaints of pain all over his abdomen, vomiting, no bowel movement, and flatus since 2 days ago. The patient underwent plain abdominal radiography and was found to have a high-lying obstructive ileus. The patient was treated with exploratory laparotomy surgery and found to have necrotic bowel sections. During the 5 days postoperative, the complaints improved.

Keywords: Intestinal obstruction, Laparotomy, Malrotation interstinal, Small bowel volvulus

INTRODUCTION

Small bowel volvulus (SBV) is a rare case, that the small intestine rotates around its own mesenteric axis.[1] Generally, SBV is diagnosed in the newborns, with 1 of 500 live birth experience malrotation of intestinal with about 80% present during their first month of life.[2] The incidence of SBV is high in Middle East, Asia, Central African countries and Finland compared to western countries. In Western countries, the incidence of SBV is 1, 5 to 5.7/100,000 adults in which 3 to 6% of patients present with intestinal obstruction, and 24 to 60/100,000 adults in Africa and the Asian continent where 20 to 50% of patients present with bowel obstruction.[1] Mortality in SBV cases based on a study conducted in Northcentral Ethiopia is 3.4%.[3] In patients with clinical small bowel obstruction, CT may be recommended to establish rapidly.[4] Management consists of conservative and/or surgery including resection depending on the patient's clinical picture and intraoperative pathology.[5] The article aims to report a case of prime small bowel volvulus and to review the latest literature.

CASE REPORT

A 69-year-old man came to the emergency department of the Bhakti Asih Hospital with the chief complaint of pain throughout the abdominal area since 2 days before admission. Severe pain is felt suddenly, without aggravating or relieving factors. The patient also complained of vomiting, constipation and didn't flatus since 2 days before admission. Complaints of fever and weight loss are denied. The patient had never had surgery before. Examination of vital signs was showing blood pressure 88/70 mmHg, weak pulse at 65 x/minute, respiratory rate at 22 x/minute and temperature 37'C. Distended abdomen and decreased bowel sounds were discovered during abdominal physical examination, along with the pain at percussion with tympanic sound, tenderness, loose tenderness and muscular defans throughout the abdominal region. Rectal toucher examination, the ampulla recti did not collapse and no feces were found. Laboratory tests, hemoglobin 14.7 g/dl (12-18 g/dl); leukocytes 16,470/l (4,000–10,000/ul); platelets 217,000/ul (150,000-450,000/ul; urea 97.4 mg/dl (15-40 mg/dl); 1.66 mg/dl (0.7-1.3 mg/dl). Plain

abdominal radiograph revealed high-grade intentional obstruction (Figure 1). Patient was treated early with intravenous fluid resuscitation, decompression with a nasogastric tube, fasting, urine catheter, analgesics and antibiotics. An exploratory laparotomy was conducted after 20 hours, resulted in presence of necrosis in small intestine from jejunum to ileum which caused by up to five twisted of volvulus. Then, the twisted intestine was derotated and the necrosis part were resected and after that an end-to-end anastomosis was performed. During the operation there were no polyps, and tumors (Figure 2). The patient was discharged from the hospital five days after surgery.

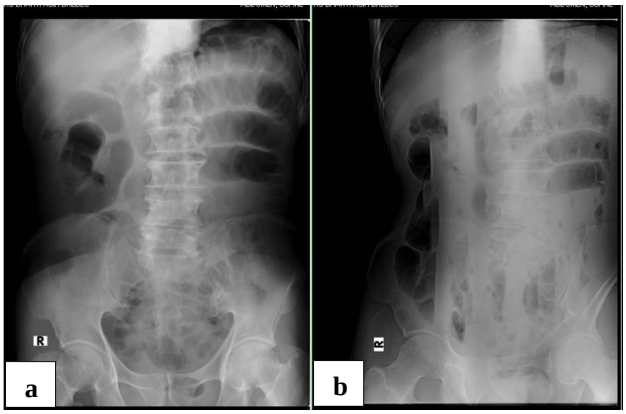

Figure 1: Plain abdominal radiography (a) supine position, and (b) LLD.

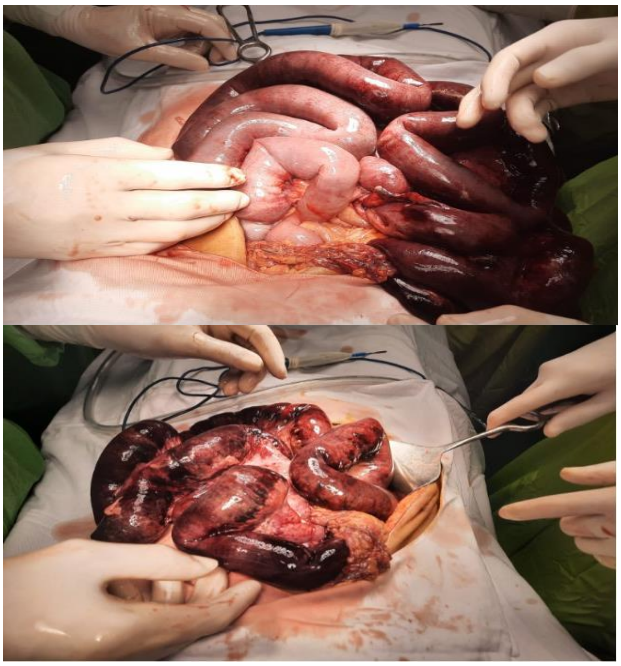

Figure 2. Small intestine specimen.

DISCUSSION

Small bowel volvulus is an uncommon case among adults. Two causes of small bowel volvulus include the primary type, defined as torsion of the small bowel mesentery segment without evidence of any predisposing anatomic abnormality, and the secondary type is due to the presence of underlying anatomic abnormalities such as malrotation, intussusception, colostomy, fistula, tumor and Meckel's diverticulum.[6] In this case, the patient had no secondary findings. The cause of primary small bowel volvulus in adults is still unknown, but it may be related to dietary factors. Fiber consumption after prolonged fasting (example: month of ramadhan) results in a sudden overload of the empty intestine, which can lead to increased intestinal peristalsis leading to SBV.[6]

The diagnosis of primary small bowel volvulus is more difficult to establish than secondary small bowel volvulus.[6] Symptoms such as acute vascular insufficiency or peritonitis, or with nausea, vomiting, abdominal distension, and decreased flatus production are common in acute SBV (89%).[1] Small bowel volvulus produces partial or complete luminal obstruction and impaired blood flow from the affected segment. Intestinal strangulation causes bowel ischemia, necrosis, perforation, and peritonitis, as was the case in this case.[7] Abdominal plain radiographs are nonspecific radiological investigations for small bowel volvulus but are very sensitive to diagnosis of intestinal obstruction. The most frequent findings are loop dilatation and hydro-aerial level. Abdominal CT scan is the diagnostic tool of choice because it has sensitivity (60-100%) and specificity (90-95%).[1,8] In this case, the examination was only performed with plain abdominal radiographs and found obstruction of the small intestine.

The management of primary SBV is surgery, following the guidelines of the world society of emergency surgery. Surgery must be performed quickly to avoid bowel necrosis and thereby, reduce morbidity and mortality. [9,10] Surgery performed include devolvulation and nonviable bowel resected. Controversial about the procedures that can be performed to prevent recurrence of primary SBV. However, performing detortion alone can have a 30% risk of recurrence. Enteropexy is a therapeutic option but carries a risk of fistula formation.[7] In this patient, the management was exploratory laparotomy followed by simple devolvulation without fixation, then resection perfomed on the necrotic bowel and anastomoses.

CONCLUSION

Small bowel volvulus is a very rare condition. Clinical symptoms are generally non-specific. Early diagnosis can reduce complications of intestinal necrosis as in this case and surgical intervention should be performed in a timely manner. Surgical intervention aims to restore blood flow in the intestine, if necrosis occurs, resection and anastomosis can be done.

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