CASE REPORT

Strangulation Resulting from an Encasement of the Small Intestinal Loop by the Omentum without an Adhesive Band

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The most common cause of small-bowel obstructions in adults is postoperative adhesions. However, strangulation of the small intestine in a patient without history of laparotomy is a rare condition. We experienced an unusual case of a small-bowel obstruction secondary to omental encasement in a patient without previous history of abdominal surgery or acute inflammatory process in the abdomen. (*Gut and Liver* 2007;1:175-177)

Key Words: Omentum; Intestinal obstruction; Ischemia

INTRODUCTION

Small bowel obstruction (SBO) is a common occurrence in adult surgical procedures. About 60% of SBO are currently accounted for adhesion mainly due to previous laparotomy.¹ Acute, non-postoperative SBO is less common and has various etiologies. Hernia is the next most common cause followed by neoplasia.² We present an unusual case of SBO secondary to the omental encasement without previous history of abdominal surgery or acute inflammatory process in the abdomen.

CASE REPORT

A 52-year-old man was admitted to the emergency room because of acute epigastric pain. The pain had developed about 4 hours before admission. It was continuous and progressively worsening with time. There was no past history of laparotomy. His vital signs revealed body temperature of 36.1°C, pulse rate of 62 beats

per min, respiratory rate of 20 per min, and blood pressure of 154/87 mmHg. A physical examination revealed tenderness in the epigastrium without muscle guarding. Bowel sounds were audible. The leukocyte count was 16,100/mm³, hemoglobin was 17.4g/dL, and platelet count was 420,000/mm³. A plain abdominal X-ray film showed several dilated small bowel loops with multiple air-fluid levels (Fig. 1). Because mechanical obstruction was strongly suspected, abdominal CT was performed. CT showed distended small bowel loops with abundant amount of gas and fluid. The transitional zone was found

Fig. 1. Radiologic findings of the abdomen. The upright abdominal film demonstrates multiple air-fluid levels.

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Fig. 2. Findings of contrast-enhanced CT scan. On (A, B) axial and (C) coronal images, several loops are dilated and filled with fluid. Two transitional points reveals a beaklike appearance (arrows). No obvious cause is identified.

Fig. 3. Macroscopic findings of the resected specimen. Several thinned bowel walls are observed near the resection margin (arrows) without abnormal mucosal lesion such as mass or ulceration.

on two areas with a beaklike appearance (Fig. 2). A closed loop obstruction of the small bowel was suggested. Emergency laparotomy was performed through a midline incision, revealing small amount of ascites in the pelvic cavity. A loop of the small intestine was encased in a fatty omentum about twice the size of a man's fist and the weight of 360 g. However, strangulated bowel was easily separated from surrounding omentum. It showed an ischemic change with 30 cm in length. Gangrenous loops and the involved omentum were resected and followed by primary anastomosis. Pathological examination of the omentum in strangulated area showed no inflammatory changes (Fig. 3). The postoperative course was uneventful.

DISCUSSION

A variety of abdominal conditions can cause intestinal obstructions. The reported prevalence of these ob-

structions varies in different series depending on the type of practice and the population of patients. About 60% of intestinal obstructions are caused by adhesions, 25% by hernias, and 5-10% by neoplasms.² Other less common causes include intussusception, inflammatory bowel disease, and midgut volvulus.²

While there are many possible causes of SBO, the clinical presentation rarely indicates the exact etiology. Computed tomography (CT) has been shown to be useful in determining the site, level, and cause of obstructions.³ In our case, CT findings showed extraluminal compression of a loop of the small bowel at two separate points suggesting an extraluminal band preoperatively. Identification of adhesion as a cause of SBO remains a diagnosis of exclusion that must be based on the finding of an abrupt change in bowel caliber without evidence of another cause of obstruction.⁴ False positive diagnosis of adhesive SBO on CT is considerable and reported to be as high as 30%, mainly related to malignancy.⁵ Several differential diagnoses were considered in this case. First was internal hernia, which is a prolapse of an abdominal organ through an aperture in the peritoneum and is contained within the confines of the peritoneal cavity. The characteristic CT features of internal hernia include abnormally located cluster of bowel loops and mesenteric vascular abnormalities such as whirling and twisting.⁶ However, in the present case, CT findings showed normal location of a dilated bowel loops only with mesenteric whirling, and no omental defect was found in laparotomy. Another was intestinal malrotation, which is defined as an anomaly of rotation and fixation of the midgut. Among infants and children, it is a well-recognized disease, often complicated with intestinal obstruction. However, in adults, it is rarely encountered and usually an incidental finding at CT.^{7,8} Some authors have reported several cases of intestinal malrotation without obvious predisposing factors in adults.^{9,10} Our patient had lived

for more than 50 years with no symptoms of ileus, and CT showed no typical indications of intestinal malrotation such as right-sided small bowel, left sided colon, or abnormal relationships between superior mesenteric vessels. Instead, laparotomy revealed that a loop of the small intestine was encased in a fatty omentum about twice the size of a man's fist, with no obvious adhesive bands. However, because an omentum is not a hard tissue, the SBO in this case was unique. This bulky omental pedicle of 360 g might have encased the small bowel spontaneously. It is similar to a recent case of strangulation of the gallbladder by a lesser omentum although the organ is different.¹¹

To our knowledge, this is the first case of small bowel strangulation due to an encasement of the omentum without adhesion or torsion in a patient who did not undergo laparotomy. Preoperatively, it is often difficult to identify the cause of the ileus when laparotomy has not been carried out. Even though there is no history of previous laparotomy, intensive diagnostic investigations and early surgical intervention should be considered in any adult patients with signs and symptoms of acute SBO to avoid possible complications of bowel strangulation and gangrene.

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