MOBILE ABDOMINAL MASS : HINT IN THE DIAGNOSIS OF BOWEL VOLVULUS

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ABSTRACT

A report of patient, developing caecal volvulus after caesarean section and tubal ligation was made. Plain abdomen might be helpful though not done in this case. In retrospective study, findings of mobile hyperechoic mass during ultrasound study is useful in the differentiation of twisted bowel mass from other intraabdominal diseases developing after surgery. Discussion of incidence, etiology, imaging findings, treatment and differential diagnosis of caecal volvulus have been reported.

INTRODUCTION

Caecal volvulus is a rare caecal of distention and bowel obstruction. It can be diagnosed from plain film if a dilated caecum is noted in the left side of abdomen. Sometimes when the clinical symptoms and plain film findings are not clear, CT scan and barium enema are other imaging modality mostly obtained for further investigation. Ultrasound was not often done, but if an inhomogenous hyperechoic mass was noted in left side of abdomen which was movable, caecal volvulus should be considered.

CASE REPORT

A 27-year-old woman underwent caesarean section and tubal ligation. Surgery was uneventful. By post-operative day4, the patient developed fever, abdominal distention and developed a tender abdominal mass about 10 cm in the left side of abdomen separated from uterus. Plain abdominal film was not obtained. Ultrasound was done as the obstetrician suspected of the patient having a postoperative hematoma or abscess. Ultrasound findings revealed a well defined inhomogenous hyperechoic mass about 10 cm in left side or abdomen (Fig. 1.). The mass was slightly mobile and was not fixed to underlying tissue. The mass location changed after turning the patient's position. The first impression according to sonographic echo of the mass was intraabdominal hematoma. However, it was not able to explain the causes of changing of the mass's location. Surgical intervention was done and revealed that the mass was a cecal volvulus. The caecum is markedly distended about 10 cm with ischemic wall and lied in the left side of abdomen. No demonstrable abscess, hematoma, Ladd's band or evidenced of malrotation was found. Only the redundant of caecum was seen. Right half colectomy with end to end anastomosis was done. The pathological findings were acute gangrenous inflammation with focal perforation of caecum. Multiple enlarged necrotic mesenteric nodes were seen. Patient was discharged a few days later with a normal bowel function.

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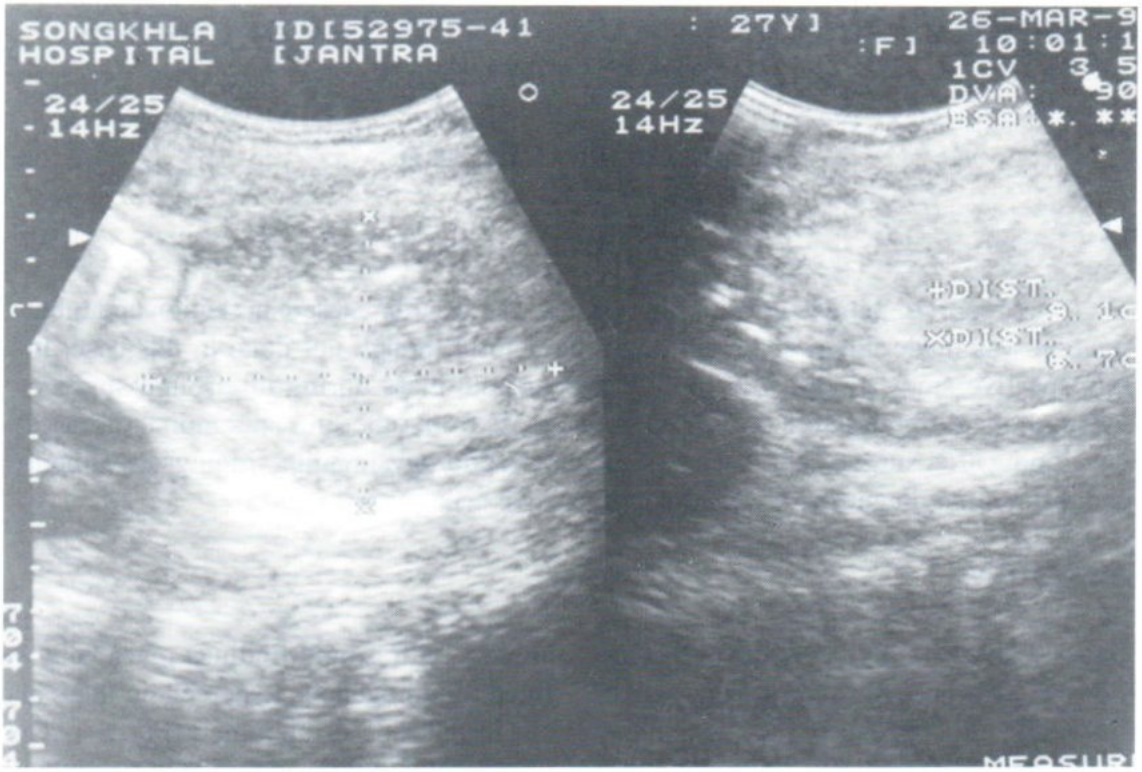

Fig. 1. A inhomogenous well defined hyperechoic mass at left sided abdomen.

DISCUSSION

Caecal volvulus is a twisting of a portion of the colon around its mesentery. The sigmoid colon and caecum are the most common portions of the colon involved. Caecal volvulus is a rare cause of caecal distention and bowel obstruciton and is less found than the sigmoid colon. The incidence of colonic volvulus varies in different parts of the world. In the United States and Great Britain volvulus accounts for approximately 1% to 7% of all cases of large bowel obstruction.[9] In some west African States, volvulus is responsible for 20% to 50% of of intestinal obstruction.[10] In the United States, the mean age of patients with caecal volvulus is about 10 years younger than the mean age of patients with sigmoid colon. Congenital factors play a bigger role in caecal volvulus while acquired changes are a large factor in sigmoid volvulus. Caecal volvulus occurs in people whose right colon has failure to fuse or fix to the posterior parietal peritoneum, creating an intraperitoneum ascending colon that can twist around the axis of ileocolic artery. Caecal volvulus may be a complication in celiac sprue[2] and Cornelia de Lange syndrome.[5] A case of caecal volvulus in 91-year-old patient caused by a large communicating caecal cystic duplication has been reported.[4]

Predisposing causes of caecal volvulus include pregnancy, recent surgery, colono scopy, laparoscopy,[6] hirschsprung disease,[2] distention of the colon from mechanical obstruction or ileus.[1] Patient usually presents with abdominal pain, constipation, vomiting, a palpable tender mass, abdominal distention and fever when bowel obstruction becomes complicated. Abdominal distention is often very marked, greater than usually seen in an obstruction due to malignancy. Two types of caecal volvulus have been described. Axial volvulus, the bowel markes a clockwise

rotation about its long axis with the caecum remaining in the right lower quadrant. The other type is loop type, a protion of the terminal ileum is included in the twist and caecum is in an ectopic location, typically in the left upper quadrant.

Diagnosis of volvulus is often not made by plain abdominal x-rays (25%).[3] Typical plain abdominal film shows a massively dilated loop of caecum, "comma-shaped" or "bean-shaped" appearance, located any where in the abdomen usually left upper quadrant that dose not appear to be stomach. Caecal diameter greater than 10-12 cm should be considered as an ominous sign indicating impending perforation. If the diagnosis is not clear, barium enema can be helpful and shows a tapered obstruction at the point of volvulus in the ascending colon. Occasionally patients with abdominal distention and pains have nonspecific dilated loops of bowel on plain film and are referred for CT scan. The CT scan shows a dilated loop of bowel usually in the upper quadrant clearly different from the stomach. Left colon and proximal ascending colon are on the right side as the scan progresses in a caudal direction. In addition, the presence of rounded soft tissue mass with a whirled configuration at the site of torsion may also be detected. This whirled configuration can be seen in midgut, caecal, sigmoid volvulus and is called the "whirl's sign". Ultrasound is not often performed in caecal volvulus. In our case ultrasound was done because intraperitoneal hematoma or abscess was suspected after caesaren section. The findings are a well defined inhomogenous hyperechoic mass in the left side of abdomen. The mass appeared not to fix with underlying tissue as it changed in location after turning the patient's position. Though gastrointestinal mass such as bowel malignancy, omental cyst or pelvic organ mass such as ovarian cyst or tumor can sometimes be movable. These conditions are not considered to be the cause of the mass developing after recent operation. Intraabdominal hematoma and abscess can occur following surgery and appear as an evenly echogenic mass or a clump of echogenic mass although mostly are sonolucent. However both hematoma and abscess are usually fixed to the underlying tissue.

In retrospective study if only concerning of this rare condition, caecal volvulus, in which predisposing factor was after surgery, laparoscopy and pregnancy, this condition might be diagnosed.

In contrast to sigmoid volvulus, patients with caecal volvulus who are stable and without signs of bowel ischemia or perforation, endoscopic decompression of volvulus often results in high failure rate and it is not generally recommended. One reason for not doing endoscopic decompression is the presence of gangrenous bowel in 20% -25% of cases. Five surgical procedures have been used in the treatment of caecal volvulus : detorsion alone, cecopexy, cecostomy, both cecopexy and cecostomy, and bowel resection. It appears that right hemicolectomy is the treatment of choice for volvulus of right colon as it avoids all risks of recurrence and mortality is lower than conservative treatment. Mortality rates in the range of 10% to 20% are reported due to the delay in the diagnosis and treatment and comorbidity in the patient group.

In conclusion, caecal volvulus is a rare cause of caecal distension and bowel obstruction. Although plain abdominal film has a typical findings, caecal volvulus is not often mode by plain film alone. Barium enema and CT scan are usually the further investigation and provide the diagnosis. When ultrasound is performed, a heteroganous hyperechoic mass which changes in location when turning the patient especially to the left side of abdomen. It is also occasionally founded in pregnancy, after surgery, laparoscopy, which one should alert for the diagnosis of caecal volvulus.

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