INTERNAL HERNIATION THROUGH A DEFECT IN THE BROAD LIGAMENT OF THE UTERUS

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SUMMARY

Objective: Intestinal obstruction caused by internal herniation of the bowel at a tear in the uterine broad ligament is extremely rare. Accurate preoperative diagnosis is very difficult. Here, we present a case with internal herniation through a defect in the broad ligament of the uterus.

Case Report: A 41-year-old female complained of colicky pain over the lower abdomen, nausea, and vomiting for 2 days. No significant history except cesarean section was given. Transvaginal ultrasound revealed a cystic structure with peristalsis located at the broad ligament of the uterus. Highly suspicious of bowel obstruction, we performed an emergency laparoscopy and discovered intestinal herniation at a broad ligament tear. The herniated bowel loop was reduced and the tear was sutured primarily. The reduced bowel loop was viable with no evidence of gangrene or perforation. The patient recovered uneventfully.

Conclusion: Good prognosis relies on early surgical correction before bowel gangrene or perforation of the strangulated bowel, especially in patients with previous gynecologic or obstetric surgery. Transvaginal ultrasound by an experienced operator may be helpful for this diagnosis. [Taiwanese J Obstet Gynecol 2005;44(3):273–275]

Key Words: bowel obstruction, broad ligament of the uterus, internal hernia, laparoscopy

Introduction

Internal herniation through a defect in the broad ligament of the uterus is extremely rare. It was first reported in 1861 as an autopsy finding [1]. There are less than 70 cases reported in the literature. The common clinical manifestations of these cases are acute abdomen, nausea and vomiting. Preoperative diagnosis of the condition is very difficult. Only two cases that were diagnosed by radiologic imaging and computed tomography (CT) before surgery have been reported [2,3].

To our knowledge, preoperative diagnosis by transvaginal ultrasound has never been reported. We present a case of internal herniation through a defect in the broad ligament of the uterus that was diagnosed before surgery by transvaginal ultrasound. This is the first case affording both sonographic and laparoscopic pictures and which had good prognosis due to early intervention. The relationships between internal herniation and broad ligament tear are discussed.

Case Report

A 41-year-old woman, gravida 1, para 1, had lower abdominal colicky pain, nausea and vomiting for 2 days. Except for previous cesarean section, she had no medical problems including pelvic inflammatory disease and pelvic surgery. She consulted a local hospital first, where conservative treatment was given, but the symptoms did not improve by 1 day later. Therefore, she was referred to our hospital for further management.

At arrival in the emergency unit of our hospital, she had severe pain in her left lower abdomen with muscle guarding. Hyperactive bowel sounds with aggravated...
nausea and vomiting were noted. Vital signs were normal: her blood pressure was 100/39 mmHg, pulse rate was 70/minute, respiratory rate was 20/minute, and body temperature was 36°C. Pelvic-vaginal examination showed a cystic mass with tenderness over the left adnexal area. The uterus was normal in size without tenderness. Serial laboratory examinations including urine pregnancy test, complete blood counts, and biochemical study were performed. The pregnancy test was negative. Blood examination showed no remarkable finding except leukocytosis (white blood cell count, 9,120/mm³) with shifting to the left (neutrophils, 84.6%). Transvaginal ultrasound (Aloka SSD-680, Aloka Co, Tokyo, Japan) revealed a cystic mass measuring 7.1 × 3.6 × 3.5 cm over the cul-de-sac extending to the left adnexal area (Figure 1). There was turbid echogenicity in the dependent part of the cystic mass with mild peristalsis, which was compatible with obstructed bowel. The bilateral ovaries and uterus were normal. A diagnosis of obstructed bowel over the cul-de-sac and left adnexal area was made.

As the previous conservative treatment had been ineffective, emergency surgery was suggested due to the possibility of bowel gangrene. Laparoscopic surgery revealed a strangulated bowel loop, 15 cm long, about 200 cm above the ileocecal valve through a defect in the left broad ligament (Figure 2). Bilateral ovaries and tubes were grossly normal. Laparotomy was undertaken to evaluate the ischemic condition of the herniated bowel loop and to repair the tear completely. Reduction of the internal hernia was performed and the bluish color of the herniated bowel loop gradually returned to normal pink. The herniated bowel loop seemed viable after reduction and neither perforation nor gangrene was noted. A defect about 4 cm in diameter in the left broad ligament was found (Figure 3). The defect was closed using continuous 2-0 Dexon sutures. The postoperative course was uneventful, and the patient

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**Figure 1.** Transvaginal ultrasound (longitudinal scan) shows the herniated bowel loop (BL) behind the uterus (UT) in the cul-de-sac.

**Figure 2.** Laparoscopic photograph demonstrates the herniated bowel loop (BL) with ischemic change herniated from the anterior side to the posterior side of the left uterine broad ligament and between the uterus (U) and left ovary (o).

**Figure 3.** At laparotomy, the defect (T) in the left broad ligament is located anterior to the uterus (U) and below the round ligament (RL).
started food intake after flatus passage. No evidence of bowel perforation or ischemia was noted and the patient was discharged 5 days after surgery.

Discussion

Internal hernia through a defect in the broad ligament is a rare cause of bowel obstruction. Common causes are adhesive bands, strangulated inguinal hernias, and neoplasms [4–6]. Internal hernia is a hernia situated retroperitoneally [7]. There are two types of internal herniation: herniation of an abdominal organ through a hernia opening formed by a peritoneal fold; and herniation of a viscus through a defect in the mesentery or omentum, e.g. broad ligament herniation [7]. Only 1% of acute small-bowel obstructions are caused by internal hernia. The most common internal hernias are paraduodenal and through the foramen of Winslow. The least common are sciatic and broad ligament defects [6,8].

Internal herniation through a defect in the broad ligament was first described from autopsy findings in 1861 [1]. Preoperative diagnosis was difficult until radiologic imaging and CT were able to provide clues to diagnosis [2,3]. Bowel gangrene and perforation secondary to prolonged herniation of the small intestine is well documented [9,10].

In this case, the initial manifestations included abdominal pain, nausea and vomiting. Transvaginal ultrasound revealed a cyst over the left adnexal area with turbid echogenicity. The differential diagnosis included torsion of an ovarian cyst or tubal cyst. These conditions are sometimes difficult to differentiate from each other, especially when marked peritonitis is present. The definitive diagnosis always relies on surgical findings. Earlier intervention leads to better prognosis. In addition to radiologic examination and CT scan, transvaginal ultrasound may be used as an aid to diagnosis. Most important is early intervention; conservative diagnostic laparoscopy may be used as first-line therapy.

Several causes can account for a broad ligament tear. These include operative trauma, prior pelvic inflammatory disease, birth trauma in pregnancy, post-repairing of obturator hernia, and congenital abnormality [4,6]. As congenital broad ligament tears usually occur bilaterally [9], and because the patient in this case had no significant medical and surgical history except for previous cesarean section, operative trauma during cesarean section may have been the cause of the broad ligament tear in this case.

In conclusion, preoperative diagnosis of intestinal herniation through a defect in the broad ligament is difficult. Transvaginal ultrasonography may be used to aid diagnosis. Early surgical correction is simple and the prognosis is good if there is no gangrene or perforation.

References