

Torsion of a nongravid uterus with a massive ovarian tumor: a case report

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Summary

This article reports a case of a uterine torsion in an elderly woman who was diagnosed ovarian tumor pre-operation. An 83-year-old woman was admitted to the present hospital with acute lower abdominal pain, presenting with nausea and vomiting. Physical examination revealed that the general status was poor and a large abdominal mass about 20×25 cm was visible and palpable in the pelvic with tenderness. A preoperative diagnosis of torsion of an ovarian cyst was made and laparotomy was performed. Intraoperatively, a right ovarian cystic tumor about 30×30×25 cm was not twisted and the uterine corpus had undergone a 180-degree rotation along the transition between the corpus and the cervix uteri. Subtotal abdominal hysterectomy and bilateral salpingo-oophorectomy were carried out. The tumor was classified as a benign epithelial neoplasm of the ovary accompanied by hemorrhagic necrosis, not only of the cyst but also of the uterine corpus. The diagnosis and treatment of nongravid uterine torsion are deserving of discussion and study.

Key words: Torsion; Nongravid uterus; Hysterectomy; Case report.

Introduction

Torsion of a nongravid uterus is extremely rare. Most cases of uterine torsion occur during pregnancy. As uterine torsion may cause irreversible ischemic damage and rapid deterioration of the uterus, prompt and accurate diagnosis is crucial. The clinical history is typically nonspecific, as are data obtained through physical examination, ultrasonography, and CT. Abdominal pain is the major symptom. Other symptoms include vaginal bleeding, gastrointestinal manifestations, and urinary tract symptoms. The definitive diagnosis is nearly always made intraoperatively. In this paper, the authors described a case of a uterine torsion in an 83-year-old woman who was preoperatively diagnosed with ovarian tumor.

Case Report

An 83-year-old postmenopausal woman was admitted to the present hospital on September 24, 2015. She complained of lower abdominal dull pain, fever, intermittent nausea, vomiting, and dysuria for one day. She had a history of mild abdominal distension in the last two weeks, accompanied by fever, severe cough, and expectoration. She visited the emergency room in this hospital. Physical examination revealed a cystic tumor about 20×25 cm in the pelvic, without tenderness. CT scanning showed uterine atrophy and a cystic lesion 21.8×22×14 cm in the pelvis, possibly a right ovarian cystic adenoma. Chest X-ray examination and blood test were taken. Pelvic large mass, pneumonia, and bronchitis were diagnosed. Antibiotics were used. Operation for the abdominal mass was suggested as soon as possible if respiratory tract infection was cured. The fever disappeared 12 hours later, but cough and mild breath

shortness still lasted.

Medical history revealed that the patient suffered from hypertension and myocardial infarction for three years. Oral antihypertensive drugs were taken daily. Diabetes was diagnosed for a month. Insulin was taken to regulate blood sugar. She had a history of six natural deliveries. Physical examination revealed that her general condition was poor. Blood pressure was 150/90 mmHg, the temperature was 37.5°C, pulse was 90 beats per minute, and respiration rate was 24/minute. A few moist rales were audible over bilateral lung bases. A large cystic mass about 25×25 cm was detected in the pelvis, with mild tenderness. The uterus could not be clearly touched. Antibiotics were used for two days after admission, and nausea and vomiting were relieved; however, the general condition deteriorated. The patient could not lie down with severe abdominal distention and shortness of breath. Physical examination showed that pulse rate quickened up from 90 to 110 beats per minute. The temperature rose to 39°C. The abdominal mass enlarged with tenderness. Blood test showed the haemoglobin level dropped from 138 g/L to 86 g/L. Oxygen saturation and arterial partial pressure of oxygen dropped to 83% and 54.7 mmHg from normal level respectively. The presumptive diagnosis was an attached neoplasm with torsion or intracystic hemorrhage. Under general anesthesia, the exploratory laparotomy was performed. Hemoperitoneum (300 ml) was detected. A large black cyst about 30×30×25 cm in size was found, with smooth surface. Needle puncture resulted in the drainage of about 3,000 ml bloody fluid, and the risk of spillage into the peritoneal cavity was avoided. The cyst actually originated from the right ovary without torsion. The uterus was found to be enlarged (10×10×5 cm) and had undergone a 180-degree rotation along the transition between the corpus and cervix uteri. Most of the uterine body spontaneously separated from the cervix at the level of isthmus uteri. The uterus, right ovary, and bilateral fallopian tubes were gangrenous (Figure 1). Due to the patient's poor general condition, sub-total abdominal hysterectomy with bilateral salpingo-oophorectomy was

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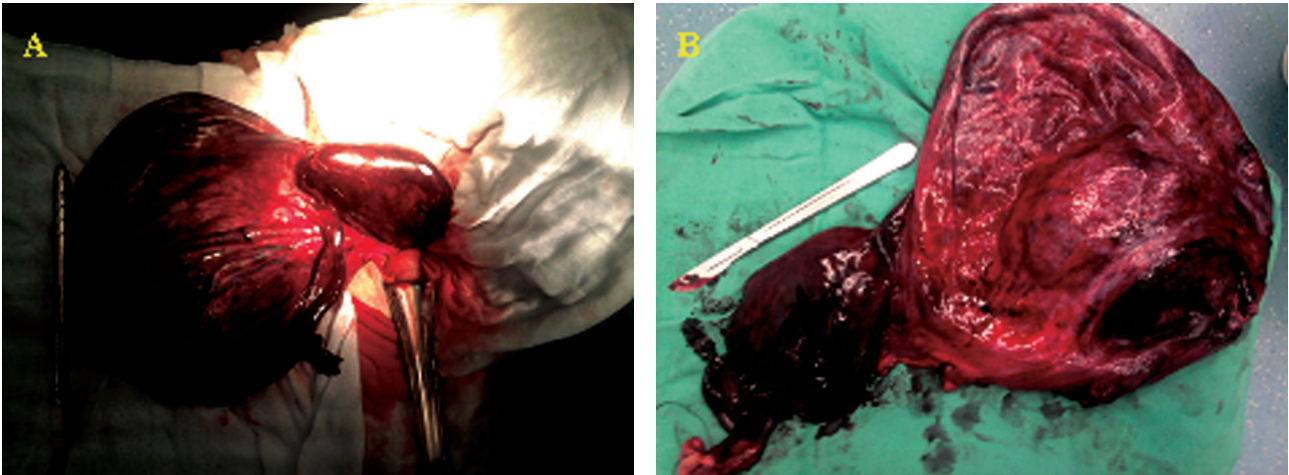


Figure 1. — Torsion of a nongravid uterus in a patient with a massive ovarian tumor (A: intraoperative image ; B: postoperative image). The uterus was found to be enlarged (10×10×5 cm) and has undergone a 180-degree rotation along the corpus and the cervix uteri transition line. Most of the uterine body spontaneously separated from the cervix at the level of isthmus uteri. The uterus, both fallopian tubes, and both ovaries are gangrenous.

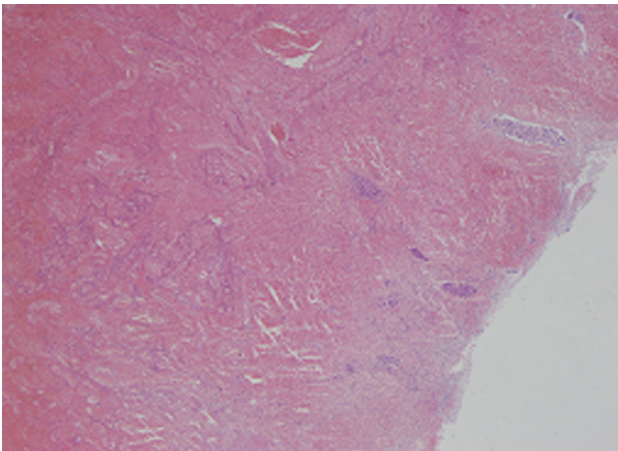


Figure 2. — Endometrium and myometrium show extensive hemorrhage and only a few endometrial glands are visible (HE, original magnification ×40).

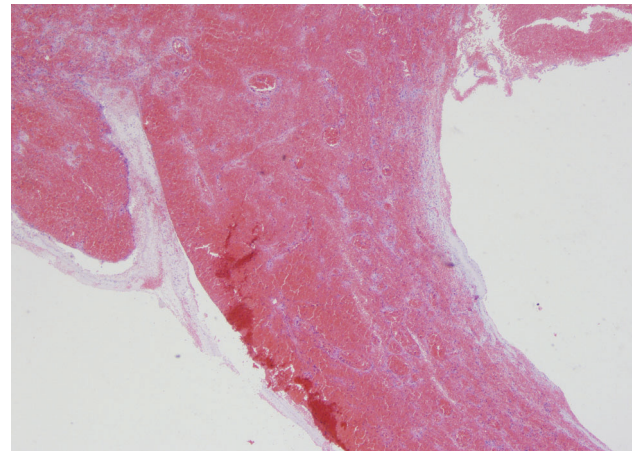


Figure 3. — Right ovary is transformed as a cystic wall with wide areas of hemorrhage and necrosis and lack of epithelial covering (HE, original magnification ×40).

performed. The operation lasted 30 minutes and blood loss was minimal. Histological examination confirmed that the hemorrhagic infarction was consistent with torsion in the uterine and bilateral adnexa (Figure 2). Right ovarian cystic wall was found with extensive hemorrhage and necrosis (Figure 3). No obvious covering of the cystic epithelium was found. The postoperative period was eventful. The patient suffered from acute respiratory failure and accepted effective treatment in ICU. On the 16th day post-operation, the patient was discharged from the hospital. This study was formally approved by the Institutional Review Board of Beijing Chao-yang Hospital and an informed consent was signed by the patient.

Discussion

Uterine torsion is defined as rotation of the uterus on its long axis by more than 45 degrees [1]. However, the exact

etiology remains unknown. Most of the cases reported involved gravid uteri, and torsion of the nongravid uterus is extremely rare. Some researchers have reviewed the reports of torsion of the gravid uterus. Piot *et al.* showed that 31.8% had uterine myoma, 14.9% had uterine anomalies, especially bicornuate uterus, 8.4% had pelvic adhesions, 7% had ovarian cysts, 4.6% had abnormal presentation and fetal anomalies, and 2.8% abnormalities of spine and pelvis, with no discoverable causes in the remaining cases [2]. While, according to Wilson *et al.* [3], most cases had normal anatomy that is unexplained torsion. However, myomatous uterus, congenital uterine abnormalities (especially bicornuate uterus), and adnexal masses mostly contribute to the torsion of the nongravid uterus [4, 5]. The point of torsion of the uterus usually occurs

at the level of the uterine isthmus. It has also been suggested that peristaltic movements of the sigmoid may cause uterine torsion [6]. In menopausal women, especially with a history of multiple deliveries, hormone levels are decreased and pelvic support tissue and ligaments contractions are relaxed. An elongated cervix with structural weakness and angulation in the isthmus region may predispose to torsion of the uterus. The patient with an increased size of the massive ovarian cyst may be predisposed to uterine torsion.

Uterine torsion is difficult to diagnose preoperatively. The diagnosis should be differentiated from the fibroid degeneration, torsion of a pelvic tumor, appendicitis, abdominal pregnancy, and placental abruption. Its clinical presentations are lack of specific symptoms. Abdominal pain is a most common symptom. It varies from non-specific mild abdominal discomfort to acute abdomen with shock [7, 8]. Associated clinical signs include abdominal distension, nausea, vomiting, vaginal bleeding, uterine tenderness, and so on. In the present case, the elderly women was not sensitive to pain. She presented with mild abdominal pain, abdominal distension, and dysuria, which were difficult for the preoperative diagnosis. Ultrasound, CT scanning and MRI are helpful to diagnose uterine torsion. On ultrasound, if fibroids noted on previous ultrasound scans are seen to have changed position [9], torsion of a myomatous uterus may be suspected. On CT scanning, the whorled appearance of the uterine cervix represents twisting of the cervix. On MRI, the wall of the upper vagina changes from the normal H-configuration to an X-shaped configuration in uterine torsion [4]. Especially in younger women who have requirements of fertility, imaging examinations may be more important in the diagnosis of uterine torsion, while the different experience and skills of radiologists and sonologists may affect the results of interpretation. Surgical exploration usually plays an important role in diagnosis. Laparoscopic exploration may be recommended. In the present case, CT scan images were not indicative of both ovarian tumor and uterine torsion when the patient came to the hospital the first time. Laparoscopic exploration was recommended for the massive tumor, but postponed due to the patient's poor general condition.

Torsion of the uterus may due to congestion and gangrenous changes in the uterus or adnexa. Thus, it is vital for prompt and accurate preoperative diagnosis. Surgery should be performed as soon as possible. For the pregnant women, cesarean section should be usually operated [3, 7, 8]. Hysterectomy should be considered in women with uterine necrosis resulting from prolonged torsion [10]. In younger women who desire to maintain fertility, the uterus should be preserved as possible and detorsion of the uterus may be considered. At the same time, removing the reasons causing uterus torsion, such as myomectomy, ovarian tumor resection, and adhesiolysis, should be conducted. In order to prevent recurrence of uterine torsion, bilateral plication of the round or uterosacral ligaments may be selected [11].

For the present patient, due to severe pneumonia and the

weak general condition, surgery was not performed promptly when abdominal distention and mild pain occurred. Secondary anemia revealed torsion or intracystic hemorrhage of an attached neoplasm. With risk of acute respiratory failure, surgery was performed. The uterine body underwent a 180-degree rotation and spontaneously separated from the cervix. It was the traction from the large tumor that led to the torsion of the uterus. Sub-total abdominal hysterectomy with bilateral salpingo-oophorectomy was performed as soon as possible. In short, for the patients who suffer from uterine or attachment neoplasm, it is necessary to timely perform surgical exploration when the reason of the abdominal pain is not definite.

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