Isolated Torsion of the Distal Part of the Salpinx in a 12-year-old Adolescent

Jeong Sig Kim
Department of Obstetrics and Gynecology, College of Medicine, Soonchunhyang University, Bucheon, Korea

Abstracts

Although in the case of acute low abdominal pain, the possibility of a torsion of the uterine adnexa should be verified, it is very rare to find torsion of the salpinx in an adolescent. Moreover, accurate diagnosis is delayed as it is often confused as torsion of the ovarian cyst or appendicitis. More often than not, diagnosis is made through emergency operations, and the salpinx is often resected. A 12-year-old girl was admitted to our hospital with pain in the lower abdomen, and transrectal ultrasound showed the mass having a longitudinal shape with a septum. After the patient was admitted, a diagnostic laparoscopy was performed following gradually increasing tenderness and rebound tenderness as well as a nonspecific mass observed near the left ovary. During the laparoscopy, torsion was diagnosed in the left salpinx and a salpingectomy was subsequently performed. Therefore, the possibility of torsion of the salpinx must be considered when an adolescent is admitted to the hospital with acute low abdominal pain.

Key words : Salpinx, Torsion, Adolescent.

Introduction

It is very rare to find an isolated torsion of the salpinx in adolescent females who are not sexually active. Early diagnosis is crucial as the salpinx can be preserved when the isolated salpinx torsion is treated immediately. One of the symptoms of salpinx torsion is acute abdominal pain, same as that caused by a torsion of the uterine adnexa, but it is difficult to diagnose as the symptoms are nonspecific. Even if ultrasonography or color Doppler is used for a differential diagnosis of torsion in the salpinx, less than 20% of reported cases were diagnosed before surgery. The authors have prepared this report together with a review of literature after experiencing one case of isolated salpinx torsion that occurred to a 12-year-old girl.
Methods and Results

An otherwise healthy 12-year-old girl, who had been having regular periods since her menarche at age 11, was admitted to the emergency room with a chief complaint of pain in the left lower abdomen. There were no specific findings in her medical and family history, and her last date of menstruation was July 7, 2007. Treated in the emergency room for pain in the lower left abdomen on July 26, 2007, the patient showed no other specific findings apart from tenderness in the abdomen and was referred to the department of obstetrics and gynecology. With a height of 160 cm and weight of 50 kg, the patient had an acute ill looking appearance. She had a slightly pale complexion at time of admission and her physique and nutrition level were moderate. When she was admitted, her vital signs were normal with a blood pressure of 110/70 mmHg, pulse of 82/min, body temperature of 36.7℃ and breathing at 20 breaths/min. There was no abdominal distension but a moderate level of tenderness in the lower left abdomen, and no muscle guarding. There was no vaginal examination as the patient had no sexual experience, and there was no vaginal bleeding. Apart from a slightly elevated segmented leukocyte level of 82.4%, laboratory test results were normal with a leukocyte count of 9900/mm$^3$, hemoglobin level 10.6 g/dL, Hct 34%, normal bleeding time and CRP. There were no abnormal findings in the urine test, coagulation test and biochemical blood test. Test results for chest x-ray and electrocardiogram were normal. As a result of the transrectal ultrasonography test, a septated longitudinal cystic mass of approximately 4.5x2.7cm in size was observed between the uterus and left ovary (Fig. 1). A CT scan showed no definite evidence of torsion, and cystic lesions observed between the ovary and uterus during the ultrasound that might be ovarian exophytic cysts (Fig. 2). After being admitted, the patient’s lower abdominal pain gradually worsened and showed abdominal rigidity together with rebound tenderness, then it was decided that a diagnostic laparoscopy was to be performed. Surgery showed that there was no ascites in the abdominal cavity, the uterus was of normal size and the right ovary and salpinx were also normal appearance. Although the left ovary was observed to be normal, the external surface of the distal part of the salpinx was purplish, blue colored and edematous (Fig. 3). The distal part of salpinx with the torsion had expanded to 5 x 3 cm in diameter, had a purplish color and rotated counter-clockwise 3 times. The patient underwent laparoscopic salpingectomy in the left distal part. Postoperative course was uneventful. The patient was discharged without particular complications and has since been under regular observation as an outpatient. Pathologically, there was no mass or solid portion apart from swelling from the torsion and chronic salpingitis isthmica nodosa.

Discussion

Although torsion of the uterine adnexa is not a rare disease, salpinges very rarely show isolated torsion due to their anatomical characteristics. The incidence rate is said to be approximately 1 in every 1,500,000 people, and it is even more rare to find the disease in children or girls in early puberty. The disease is most commonly found in women aged between 20 to 39 years old, although there are also reported cases of torsion of the salpinx in an adolescent in Korea. The most significant symptoms of torsion of the salpinx are lower abdominal pain, nausea, vomiting and bleeding in the uterus. Tenderness in the abdomen is observed in most patients, and body temperature, leukocyte count and ESR are normal or slightly elevated. When a patient is admitted with a chief complaint of acute lower abdominal pain, since there are no specific findings regarding torsion of the salpinx during physical examination or imaging study, this acute abdominal pain is very difficult to diagnose before surgery and requires...
Fig. 1. Transrectal ultrasonography shows a left adnexal multiseptated cystic mass measuring about 5.0 x 2.0 cm in size.

Fig. 2. Axial CT scan of the pelvis showing a well delineated, low density cystic mass in the cul-de-sac of Douglas (arrow).

Fig. 3. The left salpinx was twisted completely, and showing purplish colored edematous mass (A). After left salpingectomy was performed, the left ovary was grossly normal appearance (B).

Emergent management. Differential diagnosis must be performed for torsion of the ovarian cyst, acute appendicitis, ectopic pregnancy, pyosalpinx, pelvic inflammatory disease, renal stone, rupture of the ovarian cyst, secondary degeneration of leiomyoma and inflammatory bowel disease.

Ultrasonic findings on the torsion of the salpinx show cystic and complex pelvic mass and ascites in the pouch of Douglas, but the torsion is difficult to differentiate from other diseases. Gross et al. (2005) reported that beak sign that can be seen in the volvulus of the bowel or bowel obstruction help make the correct diagnosis. Doppler ultrasound also helps diagnosis before the surgery. Diagnostic findings show high impedance or absence of flow in the tubular structure, but a positive blood flow finding does not exclude the possibility of torsion.

Although torsion of the salpinx usually occurs in an abnormal salpinx, it could also happen in a normal salpinx. A salpinx would be abnormal in the following cases: hematosalpinx, hydrosalpinx, Hydatid of Morgagni, tubal ligation, prior surgery such as tubal ligation and tumor in the salpinx or ovary. Other known causes are hormone treatments that affect the peristalsis of the salpinx, trauma to the salpinx as well as aneurism in the mesosalpinx.

In the case of the aforementioned patient, excessive tube length seems to be the cause of the torsion as there are no specific pathological findings. Torsion of the salpinx occurs on the right at a ratio of approximately 3:2 or 2:1, often occurring during ovulation. In this case, however, the torsion was on
the left and occurred during the luteal phase on the 19th day of her menstrual cycle. According to Provost (1972), the mesosalpinx becomes congested with blood during the ovulation period which accelerates the motility of the salpinx. Furthermore, he said that while the left side had a sigmoid colon with a narrow pelvic cavity and the left salpinx was next to the mesentery of the sigmoid colon, the right side had a high possibility of torsion due to higher motility from bowel movements of the cecum and small intestine.\(^{11}\)

Because most of the patients are women of childbearing age, if the ischemic damage is reversible and not suspected of being malignant, we must try to perform laparoscopic adnexal detorsion rather than to remove the uterine adnexa, which will preserve the uterine adnexa to enable future pregnancies. Laparoscopy enables a swift diagnosis, and fertility could be retained by way of detwisting even if there is a torsion of the salpinx if there are no necrosis findings. The uterine adnexa may be removed if the tissues have necrotized, if there is a tumor in the salpinx or ovary or if the patient does not have plans to have children any more.\(^{13}\)

The authors experienced a case of an isolated torsion of the salpinx in an adolescent. Although such incidences are rare, if an adolescent experiences pain in an isolated part of her pelvis, she requires rapid examination and laparoscopic treatment under the possibility that it may be a torsion of the salpinx.

**References**