CASE REPORT

Laparoscopic Detorsion of Twisted Ovary

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An 18-year-old female presented with a 6-day history of lower abdominal pain. Transabdominal ultrasonography revealed a right adnexal cyst measuring 9 cm. Laparoscopic examination demonstrated a 10-cm right paratubal cyst and a 5-cm right ovarian torsion with gangrenous discoloration. After removal of the right paratubal cyst, untwisting of the right ovary was performed. The postoperative period was uneventful. During follow-up, ultrasonography revealed restoration of right ovarian size with follicular growth. Arterial and venous blood flows were seen on Doppler examination. The right ovary appeared to be completely viable through a second-look laparoscopic examination. A twisted ovary may be completely restored with conservative management. [J Chin Med Assoc 2005;68(12):595–598]

Key Words: adnexal torsion, detorsion, laparoscopy

Introduction

Ovarian torsion is a relatively infrequent gynecologic disease. The traditional recommended treatment for ovarian torsion is removal of the ovary without detorsion. However, conservative therapy for preservation of ovarian function should be undertaken, because most women with adnexal torsion are of reproductive age.1–5 Here, we present a young female with ovarian torsion and paratubal cyst who was successfully managed with conservative treatment using laparoscopy.

Case Report

An 18-year-old female presented to our institution with nausea, vomiting and a 6-day history of worsening abdominal pain. Her menstrual periods had been regular after menarche. On examination, she had involuntary guarding in the right lower quadrant. She was afebrile, with a pulse rate of 80 beats per minute and blood pressure of 110/70 mmHg. Transabdominal ultrasound revealed a right adnexal cyst measuring 9 × 7 × 6 cm (Figure 1). Laboratory findings were all within normal limits, including a CA125 of 18 U/mL.

Figure 1. Transabdominal ultrasound showing a right adnexal cyst (C). BL = urinary bladder; UT = uterus.

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CA199 of 25 U/mL, carcinoembryonic antigen of 0.8 ng/mL, and white blood cell count of 8,000/mm$^3$. The provisional diagnosis was a right adnexal mass.

Under general anesthesia, pneumoperitoneum was established with carbon dioxide insufflated through a Veress needle inserted into the lower margin of the umbilicus. After reaching a pressure of 15 mmHg, a 10-mm trocar and sleeve were inserted through an incision made at the lower margin of the umbilicus. An operative laparoscope was introduced through the sleeve. The uterus and left adnexa appeared normal. A right paratubal cyst with a smooth surface measuring $10 \times 9 \times 7$ cm was identified. However, the right ovary was found to be twisted 3-fold around the base and appeared black-bluish (Figures 2 and 3). The twisted ovary measured $5 \times 4 \times 4$ cm.

At this time, detailed explanation of the risks of detorsion of the twisted ovary, including pulmonary embolism, fever, and abdominal pain, was given to the patient’s parents, and they agreed to the procedure. After aspiration of clear watery fluid from within the paratubal cyst, the cyst was removed smoothly. Then, untwisting of the right ovary was performed with the aid of a probe introduced via a second suprapubic puncture. In an effort to prevent recurrence, ovariopexy was performed by fixing the right ovarian ligament to the round ligament with interrupted '0' Prolene sutures. The postoperative period was uneventful. Four days after the operation, ultrasonography revealed a shrinkage of the right ovary to 4 cm in diameter. She was dismissed on the fifth postoperative day. The surgical specimen was interpreted as a benign paratubal cyst.

The patient was followed-up every 4 weeks after discharge from hospital. Ultrasonography revealed resolution of right ovarian size with follicular growth (Figure 4). Arterial and venous blood flows were seen on Doppler examination. Four months after discharge,
a second-look laparoscopy showed that the volume of the right ovary was similar to that of the left ovary, with a smooth, uniform, white surface without any adhesions. The right ovary appeared to be completely viable (Figure 5). Clinical follow-up at 9 months using ultrasonographic examination revealed no recurrence of the torsion.

Discussion

At present, the standard option to treat twisted ischemic adnexa is adnexectomy without untwisting. The risks of thromboembolism were thought to be so high that oophorectomy was recommended for all patients regardless of age. The fear of unwinding the pedicles of ovarian torsion is based on the assumption that thrombus in the ovarian vein would be released into the systemic circulation by this procedure. However, Wagaman and Williams, in a literature review, found no cases of pulmonary embolism occurring from a thrombosed vein. Furthermore, Oelsner et al reported that 102 adnexal torsion patients routinely underwent detorsion without oophorectomy or salpingo-oophorectomy, regardless of the ischemic appearance of the adnexa. They used either laparoscopy or laparotomy to complete the operations. No patient in their study had clinical signs of thromboembolism postoperatively. Recovery of normal ovarian size and function, as shown by follicular development, was 93.3% and 90.6% in the laparoscopy and laparotomy groups, respectively. Moreover, McGovern et al performed a literature review of 309 patients with adnexal torsion who were treated by detorsion and 672 patients who were treated by adnexectomy without detorsion. The incidence of pulmonary embolism after adnexal torsion was 0.2%, and they found that this incidence was not increased with detorsion ($p = 0.47$). Pulmonary embolism actually did not occur in patients in the detorsion group.

We believe that laparoscopic detorsion should be the first choice treatment in the management of ovarian torsion, regardless of the color or number of twists of the ovary. In this patient, as the detorsion procedure was decided during operation, preoperative Doppler dynamic flow study was not performed. However, even if Doppler dynamic flow study had shown vascular occlusion, we would still have recommended the untwisting procedure. In our opinion, even gangrenous-appearing adnexa should not be removed because it is impossible to predict the chances of the ovary reviving after detorsion. The presumptive diagnosis in the present case was a simple ovarian cyst, and ovarian torsion was finally diagnosed after identifying 3-fold rotation of the ovary. Even though the twisted ovary was dark bluish and edematous after a symptom duration of 6 days, we treated it by detorsion without extirpative surgery. There was no postoperative fever, and the patient’s injured ovary was preserved.

In the study reported by Oelsner et al, 5 of the 102 (4.9%) patients had retorsion in the same adnexitis. In order to prevent retorsion, several methods of oophoropexy have been described, including fixing the utero-ovarian ligament to the round ligament, the ovary to the pelvic wall, the ovary to the uterus and shortening the utero-ovarian ligament. In our present case, the ovary was plicated by fixing the utero-ovarian ligament to the round ligament with permanent sutures. The patient was still well at the time of writing.

Torsion of otherwise normal tubes and ovaries seems to appear most frequently in children and young adults. In such patients, the ideal management is conservative treatment. Conservative treatment may restore the blood supply to the ischemic adnexa and, thus, preserve a viable tube or ovary. Sometimes, sequential torsion of the adnexa occurs in a young girl many years after treatment. Such patients would lose their endocrine function if adnexectomy was repeatedly used as the treatment option.

Our successful treatment of this patient has indicated that, although twisted adnexa may appear to be ischemic or hemorrhagic, it can safely be revived by detorsion with preservation of function. The ability to retain viability even after prolonged ischemia was proved by the excellent results in a severely damaged ovary, and demonstrated that complete arterial obstruction is not commonly encountered, and blood perfusion can still be gained from either the ovarian or uterine arteries. Every gynecologist should be aware of this novel option to preserve childbearing function as an alternative to using routine extirpation of ovaries in young female patients.

References


