

Ovarian torsion; early diagnosis by MRI to prevent irreversible damage

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Summary

Background: Early diagnosis of ovarian torsion can help prevent irreversible damage to the adnexal structures in women desiring to maintain fertility. **Case:** The patient was transferred by ambulance for a six-hour history of severe lower abdominal pain. Magnetic resonance imaging (MRI) revealed bilateral enlarged ovaries measuring 5 x 6 cm (right) and 4 x 5 cm (left) with a right twisted and thickened peduncle. Ultrasonography failed to detect the peduncle changes. At surgery, the right adnexa was twisted 180° in a clockwise direction with no findings suggestive of gangrenous change, hemorrhagic infarction or ischemic change. Detorsion of the twisted ovary was performed. **Conclusion:** Detection of tube torsion at MRI may be useful in the preoperative evaluation for surgical detorsion of twisted adnexa encountered in enlarged ovaries.

Key words: Ovarian torsion; Polycystic ovary; Detorsion of twisted adnexa; Ovarian drilling; MRI.

Introduction

Adnexal torsion is an uncommon but serious cause of lower abdominal pain; it is the fifth most common gynecologic emergency, with a reported incidence of 3% in one series of acute gynecologic complaints [1-3]. It commonly accompanies an ipsilateral ovarian tumor or cyst but can also occur in normal ovaries, usually in children [1-6]. If the adnexal torsion is complete and goes undiagnosed and untreated, hemorrhagic infarction may occur in the involved ovary and may lead to peritonitis and death [5]. Early diagnosis can help prevent irreversible damage to the adnexal structures and may thus allow conservative, ovary-sparing treatment in women desiring to maintain fertility. However, adnexal torsion occasionally presents a diagnostic dilemma, largely because of the related but nonspecific clinical, laboratory, and imaging findings. This report describes the accuracy of magnetic resonance imaging (MRI) in the preoperative evaluation for surgical detorsion of a twisted adnexa encountered in enlarged polycystic ovaries in comparison with ultrasound (US) findings.

Case Report

Our patient was a 22-year-old Japanese nuligravida known to have polycystic syndrome (PCOS). PCOS was diagnosed a few weeks before when she had been admitted to hospital because of irregular menstrual cycles. The diagnosis was verified by ultrasonographic morphology and endocrine analysis. She was transferred by ambulance due to a six-hour history of lower abdominal pain. She was pale, sweating, and could not lie quietly and moved about, seeking a comfortable position. There was a board-like rigidity with rebound tenderness in the right lower abdomen. MRI revealed bilateral enlarged ovaries meas-

uring 5 x 6 cm (right) and 4 x 5 cm (left) with a right twisted and thickened peduncle (Figure 1). US was consistent with the MRI findings of PCOS, but failed to detect the stalk conditions. A negative pregnancy test ruled out the presence of ectopic pregnancy. All emergency routine laboratory tests were within normal range. A preliminary diagnosis of a torsed right enlarged ovary was made. Consideration of ovarian salvage led us to prompt exploratory laparotomy. At surgery, the ovaries were polycystically enlarged like a bulging mass measuring 5 x 6 x 6 cm (right) and 4 x 4 x 3 (left). The right adnexa was twisted 180° in a clockwise direction with no findings suggestive of gangrenous change, hemorrhagic infarction or ischemic change. The uterus grossly appeared normal. No other findings which caused her severe abdominal pain were detected in the abdominal cavity. Detorsion of the twisted ovary and drilling of the bilateral ovaries were performed. The patient was discharged on the fifth postoperative day after an uneventful recovery.

Discussion

Torsion should be suspected in patients with an enlarged ovary who have abdominal or pelvic pain. The enlarged ovary apparently has a polarity that allows it to twist along the pedicle; polycystic ovary is rare as a source of the twisted ovarian enlargement in most series [1, 2, 4, 5]. If the trend toward increased ovarian salvage rates continues, then early diagnosis of ovarian torsion is warranted. The common MRI findings in adnexal torsion include tube thickening, smooth wall thickening of the twisted ovarian cystic mass, ascites and uterine deviation to the twisted side [6], although it is unclear if these findings are sufficient to determine whether there is a chance of ovarian preservation. Recent studies have proposed an aggressive approach to ovarian salvage. In a retrospective study by Houry and Abbott [3], detorsion was possible in eight of 87 cases (9%) when the patients had surgery within 24 hours. Cohen *et al.* [7] were able to preserve twisted ischemic adnexa encountered at laparoscopy in 58 women with bluish-black adnexa with minimal post-

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Fig. 1a

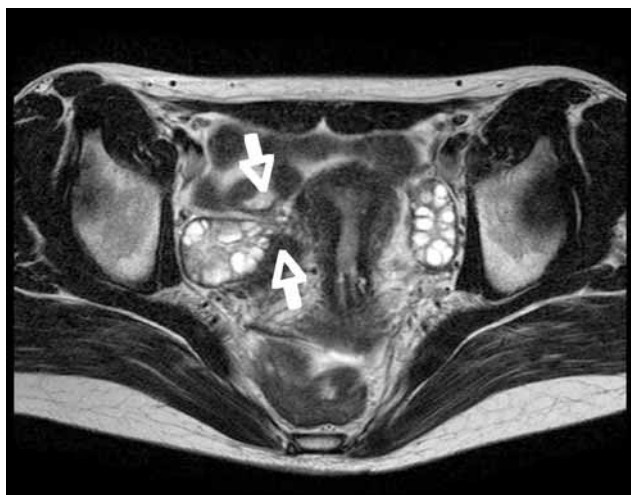


Fig. 1b

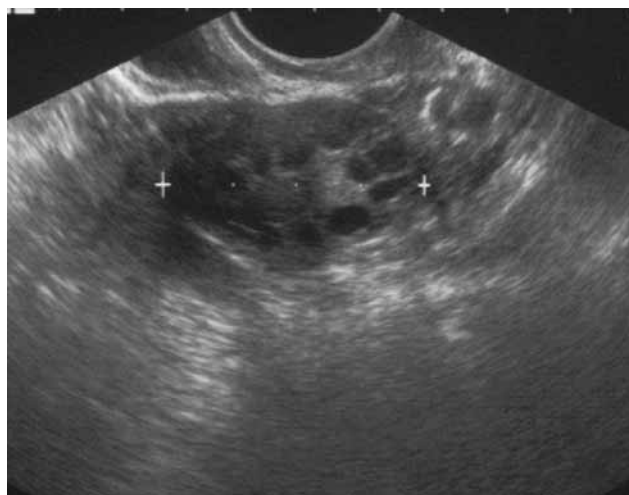


Figure 1. — Torsion of right enlarged polycystic ovary in a 22-year-old woman with a 6-hour history of lower abdominal pain. a) Axial abdominal MRI (T2-weighted) shows bilateral adnexal enlargement with torsed and thickened right peduncle (arrowhead). b) Ultrasonography revealed PCOS findings, but not tube torsion.

operative morbidity. Follicular activity was later shown in the ovaries in 54 of the 58 cases. In our study, detection of tube torsion at MRI was useful in the possible diagnosis of a twisted polycystic ovary. We were inexperienced in laparoscopy, but the detorsion may best be done by laparoscopy. Early diagnosis and prompt detorsion within 24 hours could help prevent irreversible structural damage and allow conservative, ovary-sparing treatment.

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