

Ovarian torsion associated with cessation of hormonal treatment for polycystic ovarian syndrome: a case report

M. Murakami¹, E. Takiguchi², S. Hayashi², Y. Nakagawa², T. Iwasa³

¹Department of Obstetrics and Gynecology, Kagawa National Children's Hospital, Kagawa;

²Department of Obstetrics and Gynecology, Social Insurance Kinan Hospital, Wakayama; ³Department of Obstetrics and Gynecology, Institute of Health Biosciences, The University of Tokushima Graduate School, Tokushima (Japan)

Summary

Torsion of an ovary or fallopian tube (adnexal torsion) usually occurs in ovaries with tumors or functional cysts. In polycystic ovarian syndrome (PCOS), the ovaries are bilaterally enlarged, but these enlarged ovaries rarely twist. Recently, the authors encountered a PCOS patient with ovarian torsion after the cessation of Kaufmann treatment. The etiological factors were unclear, but the authors suggest that the increase in ovarian volume was due to transient hypergonadotropic feedback. Thus, more attention should be paid to adnexal torsion that may arise subsequent to transient hypergonadotropic states, in relation to the cessation of hormonal treatment, and enlarged ovaries in PCOS patients.

Key words: Polycystic ovarian syndrome; Contraception; Ovarian torsion; Ovarian hyperstimulation syndrome; Ovarian cysts.

Introduction

The incidence of polycystic ovarian syndrome (PCOS) is reported to be six to ten percent of the female population [1]. The disorder is characterized by polycystic ovaries, hyperandrogenemia, and menstrual irregularity. Oral contraceptives that contain both estrogen and progestin constitute the most common form of therapy for adolescents with PCOS-related amenorrhea. Women with ovulatory dysfunction are treated with clomiphene or gonadotropin to induce ovulation [2]. Recently, ovarian hyperstimulation syndrome (OHSS) has been reported to be complicated by ovarian torsion [2, 3]. Thus, women with PCOS, who are undergoing ovulation induction, are at high-risk for OHSS. Hence, the cycle of ovulation induction should be carefully monitored to prevent the onset of OHSS. However, in general, adnexal torsion is a rare complication following ovarian enlargement due to hyperstimulation [3]. The authors recently treated a PCOS patient who had right ovarian torsion and had not undergone ovulation induction. The case has been presented here, together with a review of some of the literature regarding this subject.

Case Report

A 21-year-old nulliparous woman who complained of right, lower abdominal pain had been prescribed estrogen and progesterone to treat PCOS. She had stopped taking the medication without consulting her physician, two months before visiting this hospital. The physician considered that the patient's abdominal pain was not caused by a digestive disorder. Ultrasonography (US) examination showed an enlarged right ovary, and the patient experienced pain in this region during the procedure. The patient was diagnosed with ovarian hemorrhage and underwent a gynecologic examination at this outpatient clinic.

The patient's height was 145 cm and her body weight was 44 kg. Physical examination showed mild tenderness in her right lower abdomen. US examination showed normal uterine findings. However, her right ovary measured 66.2 × 41.5 × 51.4 mm and her left ovary measured 37.8 × 20.9 × 28.2 mm; she showed US features characteristics of PCOS. The patient's blood tests showed a normal hemoglobin level of 13.8 g/dl, a serum CA125 level of 10.1 U/ml (normal range, 0 - 35 U/ml), a luteinizing hormone (LH) level of 12.62 mIU/ml, a follicle-stimulating hormone (FSH) level of 5.75 mIU/ml, and an estradiol (E2) level of 22 pg/ml. Magnetic resonance imaging (MRI) showed ischemic edema of the right ovary and a polycystic left ovary (Figures 1A, B). An emergency laparoscopy showed a necrotic right ovary that was purplish-black in color and had undergone a 540° torsion around the utero-ovarian ligament (Figures 1C).

Consequently, a right salpingo-oophorectomy (SO) was performed, and the diagnosis of PCOS with torsion was confirmed by the presence of edema and hemorrhagic foci. Signs of necrosis were visible during the subsequent histological examination.

One month after the operation, another US examination showed that the endometrium of the uterus exhibited the typical secretory changes accompanying spontaneous ovulation, as well as findings typical of menstrual cycle progression after ovulation (Figure 1D). During this examination, the left ovary was found to measure 40.4 × 31.5 × 36.1 mm. The LH level was 2.33 mIU/ml, FSH level was 0.73 mIU/ml, and E2 level was 230 pg/ml. Spontaneous ovulation was confirmed at six months after the operation.

Discussion

The PCOS criteria defined by the Japanese Society of Obstetrics and Gynecology (JSOG) consist of the presence of all of the following factors: chronic anovulation, LH hypersecretion and/or hyperandrogenism, and the presence of polycystic ovaries [4]. Moreover, an elevated LH level and an elevated LH/FSH ratio are typical findings in the ma-

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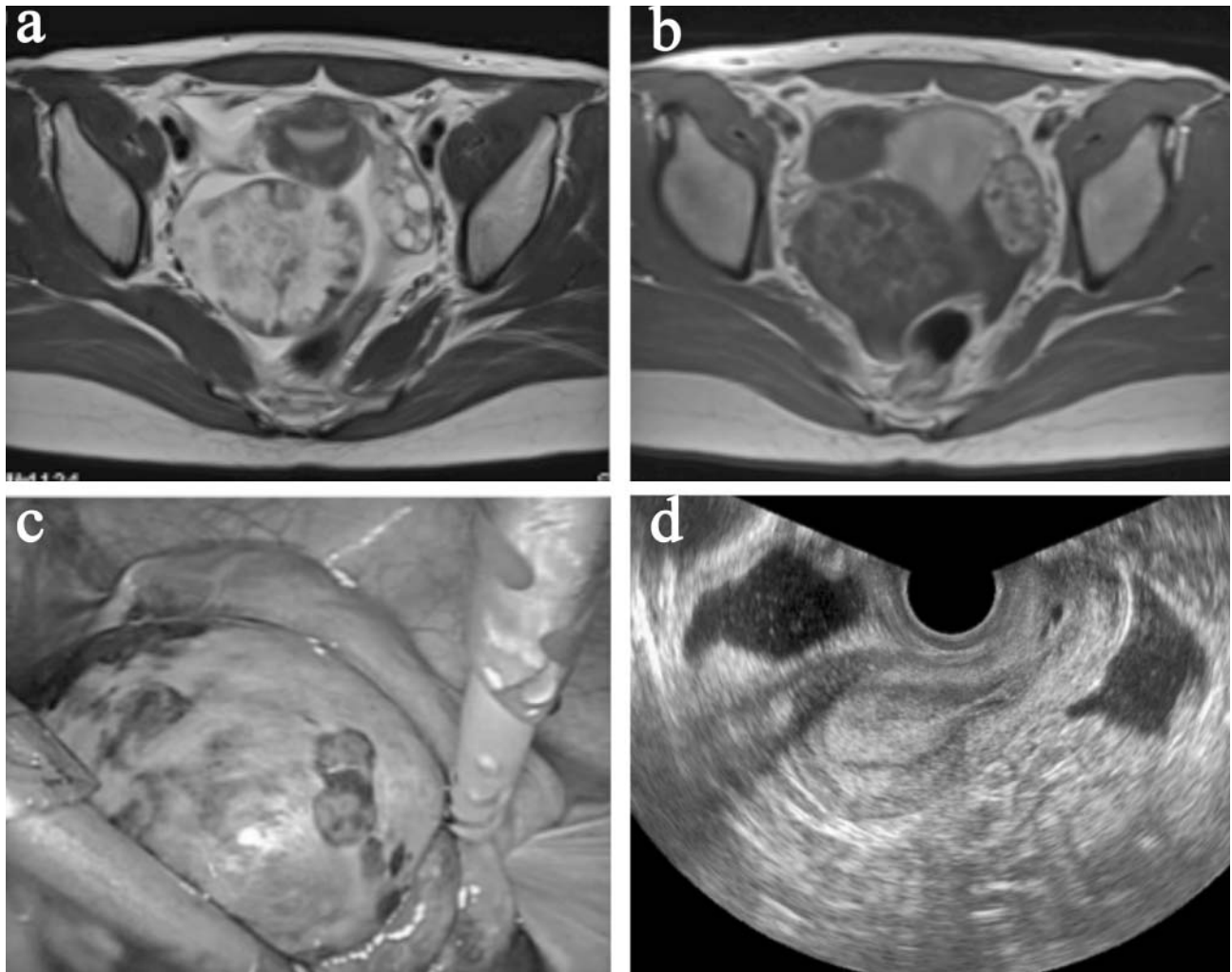


Figure 1. — A) Unenhanced axial T2-weighted image clearly showing multiple small peripheral cysts, central stroma, and increased volume of the right ovary. B) Contrast-enhanced axial T1 image showing contrast enhancement of the left ovary and does not show hyperintense appearance of the right ovary. C) Laparoscopic approach showing a purplish-black right ovary that had undergone a 540° torsion around the utero-ovarian ligament. D) Ultrasonography image showing the endometrium in the luteal phase.

jority of patients with PCOS [1]. However, poor reproducibility of the elevated LH levels or LH/FSH ratios have been reported in PCOS patients. In addition, US images have shown that oral contraceptives suppress LH secretion and lead to a decrease in ovarian androgen production [5].

In this case, the patient met the diagnostic criteria; however, she had also discontinued her hormonal treatment. Hence, the authors thought that the effect of the hormonal treatment would have disappeared. The FSH and LH levels might have increased as part of the feedback interruption caused by the cessation of hormonal treatment. This concept was considered on the basis of the MRI finding of an enlarged right ovary; the right ovary was thought to have been enlarged to the same degree before the ovarian torsion. The mobility of the left ovary might have been limited by the sigmoid colon, allowing only the right ovary to twist in this case.

Torsion of the ovary or fallopian tube usually occurs in ovaries with tumors, functional cysts, or paraovarian cysts. Here, the authors have described a PCOS patient who had right ovarian torsion and underwent unilateral oophorectomy (UO). A beneficial side-effect of UO treatment was the development of spontaneous ovulation. PCOS patients have been reported to have good fecundity and have an ovarian reserve that is possibly superior to women with normal ovaries [6]. UO is a fertility-sparing procedure that allows the preservation of the functional ovary.

Conclusion

The authors recommend that PCOS patients should be carefully monitored for adnexal torsion after cessation of hormonal treatment.

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Address reprint requests to:

M. MURAKAMI, M.D.

Division of Maternal Fetal Medicine

Center for Maternal, Fetal and Neonatal Medicine

Kagawa National Children's Hospital Zentsuji 2603,

Zentsuji City

Kagawa 765-8501 (Japan)

e-mail: murakami@kagawasyoni.hosp.go.jp