PERSISTENT MEGALOCYSTIC OVARY FOLLOWING IN VITRO FERTILIZATION IN A POSTPARTUM PATIENT WITH POLYCYSTIC OVARIAN SYNDROME

Shin-Yee Ling, Kian-Mei Chong, Jiann-Loung Hwang*
Department of Obstetrics and Gynecology, Shin Kong Wu Ho-Su Memorial Hospital, Taipei, Taiwan.

SUMMARY

Objective: Ovarian hyperstimulation syndrome (OHSS) is more severe when pregnancy occurs, as the developing pregnancy produces human chorionic gonadotropin, which stimulates the ovary’s persistent growth. If no pregnancy occurs, the syndrome will typically resolve within 1 week. In a maintained pregnancy, slow resolution of symptoms usually occurs over 1–2 months.

Case Report: A 31-year-old woman, gravida 2, para 1, aborta 1, with polycystic ovary syndrome underwent in vitro fertilization (IVF) with clomiphene citrate and follicle-stimulating hormone/gonadotropin releasing hormone-antagonist stimulation. During transvaginal oocyte retrieval, enlarged bilateral ovaries were noted. She had an episode of OHSS after IVF/embryo transfer, for which paracentesis was performed three times. Pregnancy was achieved. Throughout antenatal examinations, bilateral ovaries were enlarged. She delivered a healthy baby by cesarean section at term. However, 1 month after delivery, the bilateral ovary had not shrunk, and levels of tumor markers CA125 and CA199 were 50.84 and 41.34 U/mL, respectively. At laparotomy for suspected malignancy, both adnexae formed “kissing ovaries”, which were multinodulated with yellow serous fluid. Specimens from wedge resection submitted for frozen section showed a benign ovarian cyst. The final pathology report showed bilateral follicle cysts.

Conclusion: With the increasing use of gonadotropins in the management of infertility, ovarian enlargement secondary to hyperstimulation is common. Generally, symptoms appear between the 6th and 13th weeks of pregnancy and disappear thereafter. The hyperstimulated ovary often subsides after the first trimester. This case is unusual as the megalocystic ovary persisted after delivery. To the best of our knowledge, we report the first case of enlarged bilateral ovaries persisting 2 months after delivery. [Taiwanese J Obstet Gynecol 2006; 45(1):70–72]

Key Words: hyperstimulated ovary, infertility, ovarian hyperstimulation syndrome, ovarian neoplasm

Introduction

One of the presentations of ovarian hyperstimulation syndrome (OHSS) is an increase in ovarian size and the presence of numerous luteal cysts. Hyperstimulation is more severe when pregnancy occurs, as the developing pregnancy produces the hormone human chorionic gonadotropin (hCG), which stimulates the ovaries to continue to grow [1,2]. If no pregnancy occurs, the syndrome will typically resolve within 1 week. In the setting of a maintained pregnancy, slow resolution of symptoms of luteal cysts usually occurs over 1–2 months and rarely persists until 5 months of gestation [3]. In this report, we describe a case of bilateral megalocystic ovaries in a patient with polycystic ovarian syndrome (PCOS) who became pregnant following in vitro fertilization (IVF). The large ovarian cysts persisted...
throughout the pregnancy and 2 months postpartum. To the best of our knowledge, this is the first case of enlarged bilateral ovaries that persisted 2 months after delivery.

Case Report

A 31-year-old woman, gravida 2, para 1, aborta 1, with PCOS underwent several attempts at ovulation induction and intrauterine insemination. After these failed, she underwent IVF with clomiphene citrate (CC)/gonadotropin releasing hormone (GnRH)-antagonist stimulation [4], receiving CC 100 mg daily for 5 days (menstrual cycle days 3–7) and 150 IU recombinant follicle-stimulating hormone (Gonal-F; Serono, Singapore) at an interval of 2 days (days 4, 6, 8, and 10). The GnRH-antagonist cetorelix acetate 2.5 mg (Cetrotide; Asta Medica, Frankfurt, Germany) was given on day 10 to prevent a premature luteinizing hormone surge. A high serum estrogen level was noted on day 13 (7,993 pg/mL). hCG 1,000 IU was injected on day 14. Transvaginal ultrasound revealed 29 follicles with a diameter of more than 12 mm. Transvaginal oocyte retrieval on day 16 was uneventful, yielding 34 mature oocytes. The embryos were transferred on day 18. The patient had severe OHSS 7 days subsequent to oocyte retrieval, for which paracentesis was performed three times, with an average of 1,500 mL abdominal effusion drained each time. Pregnancy was achieved. Throughout prenatal examinations, bilateral ovaries were found to be enlarged, with the right ovary measuring about 15 × 10 cm and the left 10 × 8 cm on ultra-sonography. The patient delivered a healthy baby via cesarean section at term, when enlarged bilateral ovaries up to 20 cm in diameter were noted. No intervention was made due to our expectation that the hyperstimulated ovaries would shrink postpartum. However, 2 months after delivery, the size of the bilateral ovaries had not subsided, and concentrations of tumor markers CA125 and CA199 were 50.84 and 41.34 U/mL, respectively. Therefore, laparotomy was performed for suspected malignancy. At laparotomy, both adnexae were markedly enlarged, the right ovary measuring about 14 × 9 cm and the left about 14 × 7 cm, forming “kissing ovaries” that stuck closely together and were multinodulated with yellow serous fluid. There was minimal ascites in the abdominal cavity. After wedge resection, samples were sent for frozen section pathology, which showed a benign ovarian cyst. The final pathology report showed bilateral follicle cysts. The cytological evaluation of the peritoneal fluid was negative for malignancy. The postoperative course was uneventful, and the patient was discharged home 3 days after surgery.

Discussion

OHSS is an iatrogenic complication of ovarian stimulation occurring during the luteal phase or early pregnancy. With the increasing use of gonadotropins in the management of infertility, ovarian enlargement secondary to hyperstimulation is common. Generally, symptoms appear between the 6th and 13th weeks of pregnancy and disappear thereafter. The hyperstimulated ovary often subsides after the first trimester [5]. This case is unusual as the megalocystic ovary persisted after delivery, with elevation of tumor markers. To the best of our knowledge, this is the first reported case of enlarged bilateral ovaries following OHSS that persisted for 1 month after delivery. Ovarian enlargement with multiple follicular and lutein cysts persists for a longer period if pregnancy ensues. This is probably because of continuous exposure of the ovaries to endogenous hCG [6]. However, plasma hCG levels increase from the day of implantation to reach a peak at about 60–70 days, then, beginning at about 10–12 weeks, the levels of hCG in maternal plasma begin to decline, a nadir being reached by about 20 weeks that is maintained for the remainder of the pregnancy [7]. Therefore, hyperstimulated ovaries often subside when the hCG levels start to decline at 10–12 weeks and reach a nadir at 20 weeks, as it has been reported that hyperstimulated ovaries may persist to the 20th week [5].

A variety of cystic ovarian conditions may develop during pregnancy. Most of these conditions represent exaggerated functional cysts, hyperreactio luteinalis (HL). The recommended approach for a pregnant patient with the sonographic findings of bilateral multicocular ovarian cysts is primarily noninterventional because the cysts in HL regress once pregnancy ends [8–10]. HL is the second most common ovarian disorder of pregnancy after luteoma of pregnancy and is characterized by bilateral cystic enlargement of the ovaries [11]. The ovaries may be moderately to massively enlarged by multiple luteinized follicle cysts, secondary to stimulation with hCG and gonadotropins [8]. In the absence of a definitive tissue diagnosis, all patients with enlarged cystic ovaries and a presumptive clinical diagnosis of pregnancy luteoma or HL should be carefully followed postpartum to ensure complete regression. The natural history of HL is postpartum regression [12]. Although uncommon, benign, low-malignant potential, and malignant neoplastic disorders may also first come to clinical attention during pregnancy. Few studies have suggested that women treated with infertility drugs are at higher risk for ovarian cancer than the general population [13,14]. As in this case, persistent
enlarged bilateral ovaries and elevated tumor markers raise suspicions of malignancy, leading to surgical intervention. However, it is possible that the cyst will resolve spontaneously without surgery.

In conclusion, patients who are pregnant after gonadotropin therapy should be monitored for ovarian enlargement for more than 2 months postpartum.

References


