Primary Ovarian Pregnancy

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Background: *Primary ovarian pregnancy is a relatively rare form of ectopic pregnancy with an incidence of 1/6,000-1/40,000 pregnancies.*
Case Report: *A 25-year-old woman, gravida 1, parity 0, presented with vaginal bleeding after 8 weeks of amenorrhea. Pelvic examination revealed a left adnexal mass and transvaginal ultrasound confirmed a left adnexal echocomplex mass with free fluid in the cul-de-sac. Serum β hCG was 3,441 mIU/mL. Emergency exploratory laparotomy was performed with a preoperative diagnosis of left ectopic pregnancy, suspected of ovarian pregnancy. Ruptured left ovarian pregnancy was intraoperatively diagnosed. Left salpingo-oophorectomy was performed. The histopathology confirmed ovarian pregnancy. She was well at discharge and throughout a 4-week period of follow-up.*
Conclusion: *Although primary ovarian pregnancy is rare and difficult to diagnose clinically and even intraoperatively, it can be detected early with the use of combined transvaginal ultrasonography and serum β hCG. The standard of care is conservative treatment in order to preserve the patient's fertility.*

Keywords: *Ectopic pregnancy, Ovarian pregnancy, Primary*

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Ectopic pregnancy is a frequent occurrence, its incidence is increasing worldwide. It can occur anywhere outside the uterine cavity, such as the fallopian tube, broad ligament cervix and ovary[1-3]. Primary ovarian pregnancy is rare[3], with an incidence of 1/6,000-1/40,000 pregnancies[4,5]. It is a relatively rare form of ectopic pregnancy constituting < 3% of all cases[4]. In recent years, there has been an apparent increase in ovarian pregnancy because of the increasing incidence of pelvic inflammatory disease, abdominal operation, endometriosis, and intrauterine device use[6]. It is generally thought that ovarian pregnancy is caused by fertilization occurring outside the ovary followed by implantation within the ovary[7]. Ultrasonography and serum β human chorionic gonadotrophin (β hCG) have made it easier for preoperative diagnosis of ectopic pregnancy including ovarian pregnancy. Herein, the authors present an additional case of primary ovarian pregnancy.

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Case Report

A 25-year-old Thai woman, gravida 1, para 0-0-0-0, was admitted to the hospital with a complaint of vaginal bleeding for 1 day. Her last menstrual period was 8 weeks prior to the admission. She had used postcoital pills for contraception. She neither had abdominal pain nor nausea/vomiting. She denied any history of pelvic inflammatory disease. The rest of the past history and medical history were unremarkable.

Upon presentation, her blood pressure was 110/70 mmHg, pulse rate of 88 beats per minute, body temperature of 37 degree Celsius. She was not pale. There was no abdominal tenderness. Pelvic examination revealed scanty blood in her vagina and closed cervix without cervical motion tenderness. Her uterus was slightly enlarged. A left adnexal mass 4-cm in diameter was detected. There was no adnexal tenderness.

The laboratory investigation included a hematocrit of 42%, white blood cell count of 8,300 cells/mm^3 with 67% neutrophils, and normal platelets count. Serum β hCG was 3,441 mIU/mL. Transvaginal ultrasonogram showed an empty uterus, a 3.9-cm left adnexal echocomplex round mass (Fig. 1), and free fluid in the cul-de-sac.

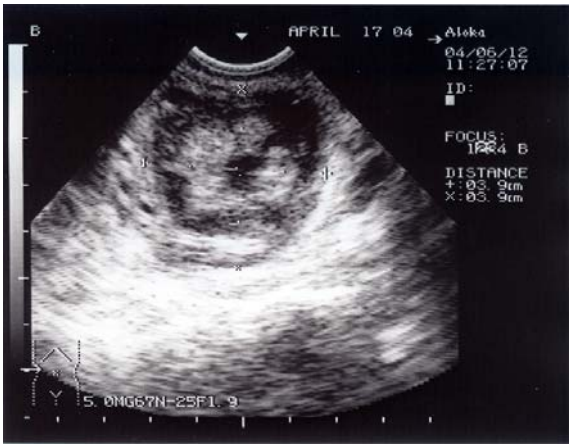

Fig. 1 Transvaginal ultrasound demonstrated a 3.9 cm left adnexal echocomplex round mass

The pre-operative diagnosis of a left ectopic ovarian pregnancy was suspected. An emergency exploratory laparotomy was performed. There was a hemoperitoneum of 200 ml. The uterus was slightly enlarged. A ruptured left hemorrhagic ovarian mass of 4-cm in diameter was noted. Both of the fallopian tubes and the right ovary appeared normal. There was no evidence of endometriosis or chronic inflammation in the pelvis. A left salpingo-oophorectomy was performed. The pathologic examination identified hemorrhage and immature chorionic villi within the ovarian tissue consistent with ovarian pregnancy and a normal left fallopian tube. The postoperative course was uneventful and she was discharged on the fourth postoperative day. The patient was still well at the 4-week follow-up and serum β hCG had returned to normal range.

Discussion

This present case is a rare primary ovarian pregnancy that occurred after a history of the use of postcoital pills. Primary ovarian pregnancy is rare[3], with an incidence of 1/6,000-1/40,000 pregnancies[4,5]. Primary ovarian pregnancy is also a rare form of ectopic pregnancy.

The predisposing factor of primary ovarian pregnancy in the present case was the use of postcoital pills. Other common predisposing factors reported of primary ovarian pregnancy such as endometriosis, previous tubal surgery, pelvic inflammatory disease, oophoritis, previous cesarean section and intrauterine device usage were not found in the present case[8,9]. The possible causes for the ovarian pregnancy include transtubal reverse flow of menstruation which may explain the flow back of the ovum, intraperitoneal fertilization, or superovulation[10].

The clinical presentations of the present case and other cases of ovarian pregnancies could not be distinguished from tubal pregnancy. The symptoms in the present case were similar to that of previous reported cases[4,7], which included amenorrhea and vaginal bleeding, except lower abdominal pain. Lower abdominal pain was not found in the present case due to the patient's early arrival to hospital. Ovarian pregnancy was preoperatively suspected in the present case because of the ultrasound finding. The combination of serum β hCG and transvaginal ultrasound scanning have been well established for the diagnosis of ectopic pregnancies. However, preoperative diagnosis is still difficult for ovarian pregnancy. Sonographically, the appearance of ovarian pregnancies varies widely. Reported cases include a cystic mass containing a partially solid area, a complex adnexal mass associated with free fluid, a definite gestational ring in the adnexa, and a cystic adnexal mass containing some strong echoes[7].

The definite diagnosis depends on histopathological examination. The present case did fulfill the four criteria to establish the diagnosis of an ovarian pregnancy as set forth by Spiegelberg in 1878: the tube on the affected side was normal, the gestational sac occupied the normal position of the ovary (distal pole), the ovary and sac were connected to the uterus by the ovarian ligament, and ovarian tissue was demonstrated in the wall of the sac[3].

The treatment in the present case was unilateral salpingo-oophorectomy due to the rupture of the ovarian pregnancy. The traditional treatment was ipsilateral oophorectomy and the conservative surgery were wedge resection or ovarian cystectomy[8]. Currently, methotrexate has increasingly become a popular treatment for small, unruptured ectopic pregnancies[9]. It may be helpful in the preservation of the ovary of patients with a preoperative diagnosis of ovarian pregnancy. Its use was inappropriate in the present case because of the ruptured ovarian pregnancy.

In conclusion, although primary ovarian pregnancy is rare and difficult to diagnose clinically and intraoperatively, it can be detected early with the use of combined transvaginal ultrasonography and serum β hCG. The standard of care is conservative treatment in order to preserve the patient's fertility.

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การตั้งครรภ์ที่รังไข่ชนิดปฐมภูมิ

วรพงศ์ ภู่พงศ์, พรทิพย์ อัชชสวัสดิ์

การตั้งครรภ์ที่รังไข่ชนิดปฐมภูมิเป็นการตั้งครรภ์นอกมดลูกชนิดที่พบได้น้อย โดยมีอุบัติการณ์ 1/6,000-1/40,000 ของการตั้งครรภ์ คณะผู้รายงานได้รายงานผู้ป่วยหญิงอายุ 25 ปีตั้งครรภ์ครั้งแรก มาด้วยอาการเลือดออกทางช่องคลอดหลังจากขาดระดู 8 สัปดาห์ การตรวจภายในพบว่ามีก้อนที่ปีกมดลูกข้างซ้าย และการตรวจอัลตราซาวด์ทางช่องคลอดยืนยันว่ามีก้อนที่ปีกมดลูกข้างซ้ายและมีน้ำในช่อง cul-de-sac ระดับเบต้าเอชซีจีในเลือดมีค่า 3,441 มิลลิยูนิตต่อมิลลิลิตร การวินิจฉัยก่อนผ่าตัดคือการตั้งครรภ์นอกมดลูกข้างซ้าย สงสัยเป็นการตั้งครรภ์ที่รังไข่ ได้ทำการผ่าตัดเปิดหน้าท้องอย่างฉุกเฉิน พบว่ามีการแตกของการตั้งครรภ์ที่รังไข่ข้างซ้าย ได้ทำการตัดท่อนำไข่และรังไข่ข้างซ้าย ผลการตรวจทางพยาธิวิทยายืนยันเป็นการตั้งครรภ์ที่รังไข่ ผู้ป่วยปกติดีเมื่อกลับบ้านและเมื่อมาตรวจติดตามที่ 4 สัปดาห์ แม้ว่าการตั้งครรภ์ที่รังไข่ชนิดปฐมภูมิจะพบได้น้อย และยากที่จะให้การวินิจฉัยทางคลินิก หรือ แม้แต่ในระหว่างการผ่าตัด แต่สามารถตรวจพบได้เร็วขึ้นด้วยการใช้การตรวจอัลตราซาวด์ทางช่องคลอดร่วมกับเบต้าเอชซีจีในเลือด การรักษาที่มาตรฐานคือการรักษาแบบอนุรักษ์เพื่อที่จะคงความสามารถในการเจริญพันธุ์ในอนาคต