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Spontaneous ovarian heterotopic pregnancy mimicking ovarian malignant tumor: case report

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Summary

Spontaneous ovarian heterotopic pregnancy is extremely rare. Ovarian ectopic pregnancy frequently resembles hemorrhagic corpus luteum cyst, but possibly mimics ovarian malignant tumor due to inhomogeneous echogenic appearance in some instances. Emergency laparotomy was performed for a seven-week spontaneous ovarian heterotopic pregnancy, because the ovarian cystic tumor exhibited a solid part on ultrasonography, therefore malignancy could not be ruled out. Postoperative course was uneventful, and the intrauterine fetus grew without complications, resulting in spontaneous vaginal delivery at 39 weeks of gestation. The possibility of an ovarian heterotopic pregnancy should be suspected, when an ovarian tumor is detected during pregnancy. These findings help physicians to diagnose ovarian heterotopic pregnancy or isolated ovarian ectopic pregnancy, to reduce maternal morbidity and mortality, and provide satisfactorily ongoing intrauterine gestation in heterotopic pregnancy.

Key words: Ovarian heterotopic pregnancy; Ovarian tumor; Emergency laparotomy.

Introduction

Heterotopic pregnancy, simultaneous intrauterine and ectopic pregnancy, is manifested with an incidence of 1:30,000 in spontaneous conception cycles, while 1:900 in clomiphene ovulation induction, and 1:100 in assisted reproductive technologies [1-5]. Ovarian pregnancy accounts for only 2.3% of all heterotopic pregnancies [6-9]. Therefore, ovarian heterotopic pregnancy in natural conception is extremely rare. A case of spontaneous ovarian heterotopic pregnancy mimicking ovarian malignant tumor with successful obstetrical outcome is hereby presented.

Case Report

A 34-year-old Japanese woman, gravida 2, para 2, conceived spontaneously. At 7^{+1} weeks of gestation, left ovarian tumor was pointed out at a local clinic. She was referred to the present authors due to acute severe left lower quadrant pain at 7^{+6} weeks of gestation. Her past medical history was negative for pelvic inflammatory disease, endometriosis, infertility, abdominal surgery, or use of intrauterine device. The initial evaluation showed vital signs with a blood pressure of 109/66 mmHg, heart rate of 60 beats/minute, blood examination with hematocrit of 34.7%, and hemoglobin of 11.6 g/dl. Intense left adnexal tenderness with guarding was evident by vaginal examination. Transvaginal ultrasonography revealed intrauterine fetal heart beat activity with 11.5-mm crown-rump length (Figure 1A, arrow), and left ovarian cystic tumor of 47 mm in diameter containing internal solid part (Figure 1B, arrowhead). Torsion of the left ovarian tumor was suspected and it was decided to perform left salpingo-oophorectomy by emergency laparotomy, because malignancy could not be ruled out. At the incision of the abdominal cavity, rupture of left ovarian hemorrhagic corpus luteum cyst was macroscopically suggested. Thereafter, 304 grams of blood were evacuated from the pouch of Douglas, and left adnexa was resected. Luteal support was conducted with intramuscular administration of human chorionic gonadotropin followed by an oral progestin. The left ovary contained blood clot and solid part was recognized inside (Figure 2, arrow). Pathological examination verified the solid part to be chorionic villi, fulfilling the four criteria for ovarian pregnancy: 1) fallopian tube including fimbria must be intact and separate from the ovary, 2) the pregnancy must occupy normal position of the ovary, 3) the ovary must be attached to the uterus through the utero-ovarian ligament, and 4) there must be ovarian tissue in the wall of the gestational sac [10]. Postoperative course was uneventful, and the intrauterine fetus grew without complications, resulting in spontaneous vaginal delivery of a 3,304-gram infant

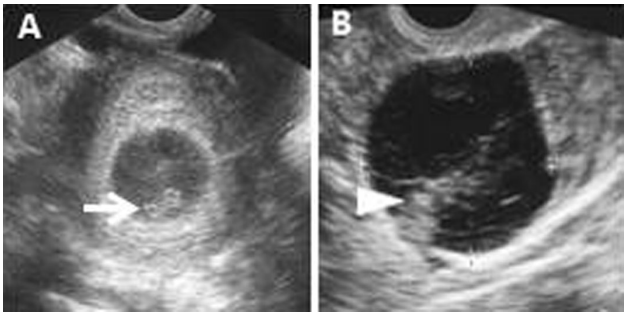

Figure 1. — Transvaginal ultrasonography at the presentation. A) Intrauterine fetus with 11.5-mm crown-rump length (arrow). B) Left ovarian cystic tumor 47 mm in diameter containing internal solid part (arrowhead).

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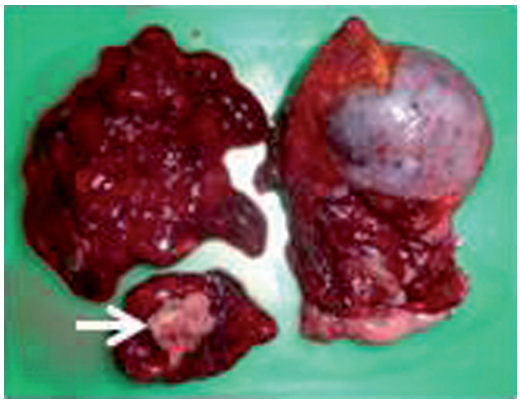

Figure 2. — Left adnexa. The ovarian tumor contains a blood clot and solid part is recognized inside (arrow).

with no obvious anomaly at 39th week of gestation.

Discussion

Combined intrauterine and ovarian pregnancy should be kept in mind, when an ovarian tumor with or without abdominal pain, peritoneal irritation, and echo-free space in the Douglas pouch is identified in the first trimester. Ovarian ectopic pregnancy frequently resembles hemorrhagic corpus luteum cyst [5, 6, 11-17], but possibly mimics ovarian malignant tumor [18, 19] due to inhomogeneous echogenic appearance in some instances.

Ovarian heterotopic pregnancies have been reported in the literature [3-9, 12-18, 20-36]. While most of them ruptured in the first trimester, some cases were surgically treated and diagnosed during the second trimester [24, 33] or after term delivery [26, 28, 29, 31, 34]. In approximately 70% of heterotopic pregnancies, the intrauterine fetus will survive [2, 6-8, 24] so that proper diagnosis and management should reduce fetal as well as maternal morbidity and mortality [37]. Laparotomy [5, 14, 15, 17, 21, 22, 24, 27, 33, 36] or laparoscopic partial resection of ovary [4, 6-9, 12] for ovarian heterotopic pregnancy provided satisfactorily ongoing intrauterine gestation. In this case, emergency laparotomy was performed because the ovarian cystic tumor exhibited solid part on ultrasonography, therefore malignancy could not be excluded. Ovarian heterotopic pregnancy may be successfully treated by local injection of hyperosmolar glucose [3].

Conclusion

The possibility of an ovarian heterotopic pregnancy should be suspected when an ovarian tumor is detected during pregnancy, although spontaneous ovarian heterotopic pregnancy is extremely rare. Based on these observations, ovarian pregnancy frequently resembles hemorrhagic corpus luteum cyst, but malignant tumor may not be ruled out preoperatively in some cases. These findings help physicians to diagnose ovarian heterotopic pregnancy or isolated ovarian ectopic pregnancy.

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