

SHORT COMMUNICATION

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A Case of Primary Ovarian Pregnancy After In Vitro Fertilization and Embryo Transfer

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INTRODUCTION

Ovarian pregnancy is still rare despite the increased incidence of ectopic pregnancies after in vitro fertilization and embryo transfer (IVF-ET). Here we report a case of primary ovarian pregnancy after IVF-ET. In this case, intraabdominal migration of an embryo from the uterine cavity to the left ovary via the right fallopian tube may have occurred. This conclusion was reached, as the left fallopian tube had documented isthmic obstruction by both hysterosalpingography (HSG) and diagnostic laparoscopy.

CASE REPORT

A 33-year-old woman with severe hypothalamic dysfunction and left tubal obstruction confirmed by hysterosalpingography (HSG) and diagnostic laparoscopy presented to our IVF unit for primary infertility. She had been treated by ovulation induction with hMG-hCG followed by intrauterine insemination (IUI) for several cycles. The left fallopian tube was diagnosed as a hydrosalpinx and obstruction was observed at the level of the isthmus by the X-ray films. The right fallopian tube was patent and both ovaries showed a normal appearance under laparoscopy. In April 1992, buserelin acetate (Suprecur; Hoechst Japan, Ltd. Tokyo), 900 µg daily, was given intranasally from cycle day 1 and hMG (Humegon; N.V. Organon, Oss, The Netherlands), 300 IU/day, was

administered from cycle day 2 to day 13. Follicle stimulating hormone (FSH) (hMG Nikken; Nikken Chemicals, Tokyo), 225 IU/day, was supplemented from cycle day 2 to day 5. Transvaginal ultrasonography (US) demonstrated that the leading follicle was measured 20 mm in diameter on cycle day 14. Intranasal use of buserelin acetate was stopped and human chorionic gonadotropin (hCG), 5000 IU, was administered. All seven oocytes retrieved transvaginally 37 hr after hCG injection fertilized. Three four-cell-stage preembryos of good quality were transferred with 20 µl of B₂ medium (Menezo, France) through the cervical canal into the uterine cavity using a ø con catheter (Fuji Systems, Tokyo) 2 days after oocyte retrieval and followed by luteal support with intramuscular injection of progesterone, 12.5 mg daily. The urinary hCG level was judged as negative (under 2 IU/L) 2 weeks after oocyte retrieval. The diagnosis of ectopic pregnancy was suggested by transvaginal US examination, which revealed no intrauterine gestational sac (GS) 27 days after oocyte retrieval even though the urinary hCG level was 320 IU/L. An emergency laparotomy was performed 33 days after oocyte retrieval because of a complaint of lower abdominal pain with increasing free fluid in the pouch of Douglas and the absence of intrauterine GS by transvaginal US. The urinary hCG also increased to 800 IU/L. At laparotomy, 250 ml of bloody fluid was collected from the pelvic cavity. As a part of the left ovary was perforated, wedge resection of the ovary was performed. The left fallopian tube was reconfirmed to be completely obstructed at the level of the isthmus by injecting the dye through the cervical canal into the uterine cavity. Both the right ovary and the fallopian tube were normal. Ovarian pregnancy was confirmed by the histological diagnosis and the postoperative course was uneventful. No subsequent pregnancy was obtained until now.

DISCUSSION

It is well-known that the first pregnancy by IVF-ET was ectopic (1). Ovarian pregnancy following IVF-

ET was first demonstrated by Marcus and Brinsden (2) but is still rare despite the increased incidence of ectopic pregnancies, accounting for 2 to 11% after IVF-ET (3–12).

Ten (10.6%) of 94 clinical pregnancies achieved by IVF-ET at Hyogo College of Medicine were ectopic pregnancies. Among the 10 ectopics, 1 was ovarian and 9 were tubal. Thus the incidence of ovarian pregnancy was 1.1% of all clinical pregnancies and 10.0% of all ectopic pregnancies, respectively. Marcus and Brinsden (2) first reported 7 cases (6.0%) of ovarian pregnancy diagnosed among 116 extrauterine pregnancies after IVF-ET, and the incidence of ovarian pregnancy was only 0.3% (7/2745) of all clinical pregnancies achieved by IVF-ET. The incidence of ovarian pregnancy by IVF-ET is higher than that by natural conception, which ranged from 0.002 to 0.01% of deliveries (13).

It might be speculated that the mechanism of ovarian pregnancy after IVF-ET is that an embryo transferred into the uterine cavity migrates in reverse toward the fallopian tube and implants in the ovary. In our case, intraabdominal migration of an embryo from the uterine cavity to the left ovary via the right fallopian tube must have taken place because the left fallopian tube was reconfirmed to be obstructed at the level of the isthmus and the right fallopian tube was considered normal. Such a unique migration was also demonstrated in three of the seven cases reported by Marcus and Brinsden (2).

Although there have been some reports of ovarian pregnancies with live infants (14,15), early ovarian pregnancies should be treated with ovarian wedge resection or ovarian cystectomy because rupture at an early period is the usual consequence. Early ovarian pregnancies are likely to be considered a corpus luteum cyst or a bleeding corpus luteum at the time of operation. In this case, we performed a wedge resection of the perforated ovary for the diagnosis and treatment of ovarian pregnancy, as there was no evidence of tubal or peritoneal pregnancy.

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