CASE REPORT

Ovarian pregnancy following in-vitro fertilization and embryo transfer

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Primary ovarian gestation is a rare form of ectopic pregnancy. Its incidence has been reported to range from as low as 1/60 000 to as high as 1/7000 pregnancies (Boronow et al., 1965; Grimes et al., 1983). Its occurrence remains rare despite the increased risk of different forms of ectopic pregnancy following assisted conception. We report a case of ovarian ectopic pregnancy encountered amongst a series of 58 extrauterine pregnancies and 939 intrauterine pregnancies which followed in-vitro fertilization and embryo transfer (IVF—ET). The diagnosis was made by ultrasonography and conservative surgery was performed.

Case report

A 32-year-old woman with a 4-year history of primary infertility was referred for in-vitro fertilization. The cause of her infertility was unexplained. She had no history of pelvic inflammatory disease or the use of an intrauterine contraceptive device. A diagnostic laparoscopy and dye hydrotubation showed a normal pelvis with patent Fallopian tubes. Multiple follicular development was induced with clomiphene citrate, 100 mg daily from day 2 to day 6 of the menstrual cycle and human menopausal gonadotrophin 150 IU daily from day 4 to day 9. Follicular growth was monitored using serial ultrasound scans and assays of 24 h urinary oestrogens. Transabdominal transvesical recovery of oocytes was performed and five oocytes were retrieved from 12 follicles. Four oocytes were fertilized and three embryos, one 4-cell and two 3-cell, were replaced using a Wallace catheter (Wallace, Colchester, UK). A pregnancy test was positive 16 days after oocyte recovery.

The patient noticed a pink discharge 22 days after oocyte recovery. At 35 days, she complained of severe abdominal cramps over the preceding week. Abdominal sonography identified a right extrauterine gestation sac that measured 12 × 8 × 10 mm with free fluid in the Pouch of Douglas. At laparotomy, the uterus was soft and bulky, the Fallopian tubes were normal and the right ovary was the site of an ectopic pregnancy, 1 × 1 cm. The ovarian gestation was excised and the ovary was reconstructed with proline. Histological examination confirmed the diagnosis. The patient made an uneventful recovery and conceived again after a second IVF attempt. The pregnancy was intrauterine and progressed normally. She was delivered of a healthy male infant at term.

Discussion

Albucasis, the Arabic writer on surgery in the eleventh century, has been credited with the description of the first reported ectopic pregnancy, when a patient passed retained fragments through an abdominal wall abscess (Breen and Chervenak, 1986). In 1614, Mercier was the first to suggest that pregnancy might occur within the ovary (Ismail, 1950) but it was not until 1899 that Catherine Van Tussenbroek of Amsterdam convinced a sceptical medical world of the occurrence of this condition. She presented the first accurate clinical and histological description of the abnormality (Van Tussenbroek, 1899). The present case fulfills the classic anatomical and histological criteria suggested by Spiegelberg (1878) for the diagnosis of an authentic case of ovarian pregnancy. The conceptus occupied the anatomical location of the ovary which was connected to the uterus by the utero—ovarian ligament, ovarian tissue was histologically distinguishable about the wall of the conceptus and the ipsilateral tube was intact.

The development of an ovarian pregnancy following in-vitro fertilization and embryo transfer is rare (Carter and Jacobson, 1986). The reverse migration of one of the embryos through the Fallopian tube and implantation in the ovary is the likely mechanism, although the fertilization of an oocyte which was missed during retrieval cannot be excluded since the number of oocytes recovered was less than the number of follicles aspirated.

The clinical pictures of ovarian pregnancy and tubal pregnancy are indistinguishable during early gestation. Abdominal sonography identified an ectopic gestation and laparotomy revealed the site of the pregnancy to be ovarian, which was confirmed histologically. Most ovarian pregnancies (75—90%) rupture in the first trimester, with two thirds during the first 8 weeks (Sandberg, 1986). Indeed, among the sites in which pregnancy may develop ectopically, the ovary may have the greatest ability to accommodate a pregnancy and offer the highest chance of development to term and survival of the infants. As many as 4—12% of ovarian pregnancies have been reported to be maintained into the third trimester (Boronow et al., 1965; Grimes et al., 1983).

Surgical removal of the ectopic pregnancy with ovarian conservation was performed in our case. Early diagnosis of
ectopic pregnancies prior to rupture has changed the therapeutic approach. Ultrasonographic detection of a similar case and its laparoscopic removal was reported by Russell and Cutler (1989). Whatever approach is used, the conservation of ovarian tissue is essential. Hallatt (1982) and Boronow et al. (1983) have observed in their series of spontaneously conceived ovarian pregnancies that recurrence was an exceptionally rare event and subsequent pregnancies were almost invariably intrauterine. Our patient had a second IVF attempt which resulted in a successful intrauterine pregnancy.

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References


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