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Case Report

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HETEROTOPIC PREGNANCY AFTER IN VITRO FERTILIZATION WITH EMBRYO TRANSFER: A CASE REPORT

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ABSTRACT

A heterotopic pregnancy is a rare complication of pregnancy, in which both extra-uterine and intrauterine gestation occur simultaneously. With the advent of Assisted Reproduction Techniques (ART) and ovulation induction, the overall incidence of heterotopic pregnancy has risen to approximately 1 in 3,900 pregnancies. Other risk factors include a history of pelvic inflammatory disease (PID), tubal damage, pelvic surgery, uterine Mullerian abnormalities, and prior tubal surgery. This paper represents a case of heterotopic pregnancy as well as a literature review. Sonographic diagnosis of a heterotopic pregnancy is not always possible. Patients with abdominal pain and intrauterine pregnancy should heighten the clinician's suspicion of a heterotopic pregnancy.

KEYWORDS: Heterotopic pregnancy, in vitro fertilization, diagnosis, risk factors, intrauterine pregnancy outcome.

INTRODUCTION

Heterotopic pregnancy is the simultaneous coexistence of an intrauterine and an extrauterine gestation.[1,2] It is a rare and potentially dangerous condition occurring in only 1 in 30,000 spontaneous pregnancies.[3–4] With the advent of Assisted Reproduction Techniques (ART).[4,5] and ovulation induction, the overall incidence of heterotopic pregnancy has risen to approximately 1 in 3,900 pregnancies.[6] While in women conceiving through in vitro fertilisation (IVF) there is a 70-fold increase,[7] with the incidence reported to vary between 1 in 100 to 1 in 500.[8,9]

Heterotopic pregnancy is potentially fatal and its diagnosis is a major challenge. Clinical features can vary widely, with some women asymptomatic and others experiencing severe abdominal pain and presenting in hypovolaemic shock. In one series of HP, 45% of patients were asymptomatic, 30% complained of abdominal pain and bleeding, and 25% presented with pain only.[10] Another group reported that vaginal bleeding occurred in 30% of HPs.[11]

We report a case of Heterotopic pregnancy after in vitro fertilization with embryo transfer.

CASE REPORT

30-year-old woman gravida 1, para 0, with a diagnosis of tubal factor infertility and asthenozoospermia in the male partner, not able to conceive for 6 years, underwent an IVF procedure at our institution. She reported a spontaneous An ectopic pregnancy 7 years before treated by salpingectomy.

In vitro fertilization was planned and carried out at our unit. After pretreatment with the oral contraceptive pill, controlled ovarian hyperstimulation was started on the second day of the period with use of recombinant FSH. Trigger hCG was administered IM. Transvaginal oocyte pickup was carried out 30 hours later. Of the 10 oocytes retrieved, 5 fertilized after intracytoplasmic sperm injection.

On day 3, 2 embryos were replaced in utero Serum b-hCG level estimated 20 days after oocyte etrieval was 1020 mIU/mL. A transvaginal ultrasound examination done at 6 weeks showed a single live ntrauterine pregnancy.

At 8 weeks gestation, the patient reported a mild abdominal discomfort. Transvaginal ultrasound revealed a viable IUP and a 32mm-viable EP. A moderate amount of fluid was detected in the cul-de-sac. The patient was stable.

Figure 1: Ultrasound showing the intrauterine and extrauterine/tubal ectopic pregnancies, both with fetal pole.

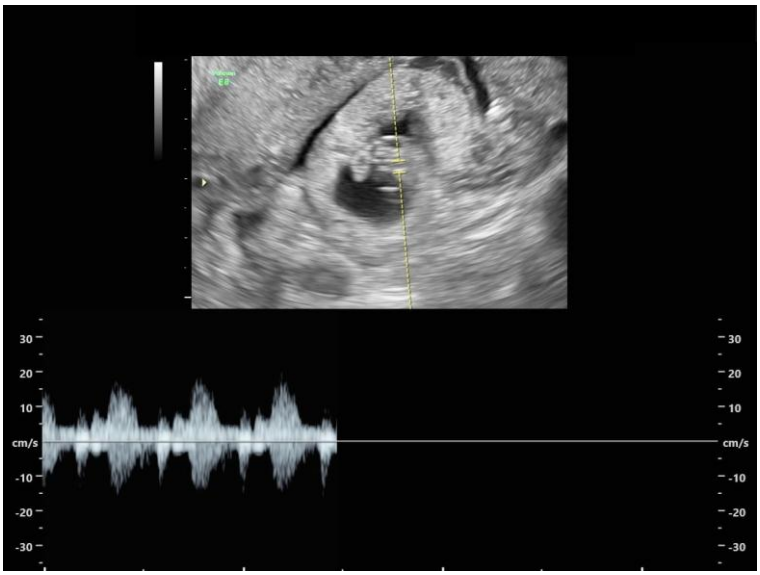

Figure 2: Fetal heart rates present.

A diagnostic laparoscopy was performed confirming the presence of a right EP. A right salpingectomy was performed uneventfully.

Transvaginal sonography 2 weeks after surgery revealed continued normal growth of the IUP. Finally, a full-term female baby was delivered.

DISCUSSION

HP occurs in various forms: bilateral tubal pregnancy, abdominal and intrauterine pregnancy, twin tubal and intrauterine pregnancy, and intrauterine pregnancy coexisting with tubal, cornual, cervical or ovarian pregnancy.[9]

Tubal damage from previous tubal surgery, pelvic inflammatory disease, or tubal malformation predisposes to a heterotopic gestation, allowing one embryo to migrate through the normal tube and the second being trapped in a damaged tube. During IVF treatment, it is assumed that embryos transferred back into the uterus that migrate into damaged tubes are not expelled back into the uterine cavity by peristaltic movements, thus creating an ectopic pregnancy and a co-existent intrauterine conception.[12]

There is also evidence to suggest that increased numbers of embryos transferred in assisted reproductive procedures increases the multiple gestation rates and predisposes toward an increased risk of HP.[9] When intrauterine pregnancy has already been established, the differential diagnosis of heterotopic pregnancy is even more commonly missed.[13]

In this case, the diagnosis of heterotopic pregnancy was accurately made with the use of transvaginal ultrasound, which allowed for timely diagnosis and management before grave consequences occurred. The management of heterotopic pregnancy is laparoscopy or laparotomy for the tubal pregnancy. Laparotomy may be the treatment of choice in cases with serious intra-abdominal bleeding or in patients with hemodynamic instability due to hemorrhagic shock. The survival rate of an intrauterine pregnancy with favorable outcome reported in 50-66% of cases.[14]

This case report highlights the importance of clinical awareness regarding the possibility of heterotopic pregnancies. After assisted reproductive technology treatment, high levels of serum b-hCG with a singleton intrauterine pregnancy or a clinical presentation of an acute abdomen should raise one's level of suspicion.

CONCLUSION

Clinicians need to be aware of such rare and potentially fatal presentations after IVF, because early diagnosis and management in these cases can yield a favorable outcome.

They must be alert to the fact that confirming an intrauterine pregnancy clinically or by ultrasound does not exclude the coexistence of an ectopic pregnancy.[13]

Transvaginal sonography (TVS) is the imaging modality of choice for the diagnosis of HP, and specific sonographic criteria exist for the diagnosis of tubal and non-tubal HPs. The early diagnosis of HP by TVS in clinically stable women not only is potentially life saving, but also enables conservative management options to be considered.[15]

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