Case raport

HETEROTOPIC PREGNANCY AFTER IN VITRO FERTILIZATION AND EMBRYO TRANSFER (IVF-ET)

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The incidence of heterotopic pregnancy in general population is about 1 per 7000 pregnancies, but reaches 1 per 100 pregnancies conceived by ovarian stimulation and *in vitro* fertilization and embryo transfer.

After the application of adequate stimulation with menotrophine and achieved estradiol (E2) level of 989 pg/ml on day, we followed follicular growth by transvaginal ultrasonography. Under ultrasonography control and intravenous sedation, we retrieved 6 oocytes. Four of the 6 mature oocytes were fertilized and according to the patient's wish, all 4 embryos were transferred transcervically 2 days after the aspiration. The patient received progesterone supplementation after the embryo transfer. Her pregnancy test was positive at day 15, with β-hCG level of 150 mIU/ml. At week 6, her β-hCG level was 350 mIU/ml. During that period, she reported sparse bleeding. At week 7, β-hCG level was 2122 mIU/ml and ultrasonography scan verified gestational sac consistent with the date. At week 8, by transvaginal ultrasonography, the gestational sac within uterine cavity with signs of collapse was registered, and another gestational sac outside uterus, while the β-hCG level was 29 700 mIU/ml. At that time, she reported severe pain and ultrasonography revealed foreign fluid in pouch of Douglas. The puncture showed it was blood effusion. We performed laparotomy with left tubal salpingectomy at the site of extrauterine pregnancy. Revision of uterine cavity was also performed for missed abortion, which histologically verified immature chorion villi with embryonic tissue.

After embryo transfer, the initial ultrasonography should be performed at week 4. Even with intrauterine pregnancies, adnexae should be carefully inspected, and even earlier investigation must by carried out in case of abdominal pain and non-specific complaints. β-hCG level and its early rise should raise a suspicion index. *Acta Medica Medianae 2007;46(3):66-67.*

***Key words**: heterotopic pregnancy, fertilization in vitro, embryo transfer*

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Introduction

Simultaneous intrauterine and extrauterine pregnancies are not frequent in spontaneous pregnancies. However, among women treated by in vitro fertlization and embryo transfer (IVF-ET), the occurrence of simultaneous intrauterine and extrauterine pregnancies is no longer infrequent. Its incidence in general population is around 1 per 7000 pregnancies, but reaches 1 per 100 pregnancies conceived by ovarian stimulation and IVF-ET (1,2).

Case

The patient, 42 years old, with 12 years of primary infertility had bilateral tubal occlusion diagnosed by hysterosalpingography (HSG). After two unsuccessful IVF attempts, the patient decided to have her third attempt at this clinic. After applied adequate stimulation with HMG and achieved estradiol (E2) level of 989 pg/ml on day ², we followed follicular growth by transvaginal ultrasonography (US). Under US control and intravenous sedation, we retrieved 6 oocytes. Four of the 6 mature oocytes were fertilized and according to the patient's will, all 4 embryos were transferred transcervically 2 days after the aspiration. The patient received progesterone supplementation after ET. Her pregnancy test was positive on day 15, with b hCG level of 150 mIU/ml. In week 6, her bhCG level was 350 mIU/ml and in that period she reported sparse bleeding. In week 7 bhCG level was 2122 mIU/ml and US scan verified gestational sac consistent with the date. In week 8, transvaginal US was repeated and verified gestational sac within uterine cavity with signs of collapse, and another gestational sac outside uterus and her bhCG level was 29 700 mIU/ml. At that time, she reported severe pain and US revealed foreign fluid in pouch of Douglas. Puncture showed it was blood effusion. We

performed laparotomy with left tubal salpingectomy at the site of extrauterine pregnancy. Revision of uterine cavity was also performed for missed abortion, which histologically verified immature chorion villi with embryonic tissue. There were no postoperative complications.

Discussion

There is no doubt that heterotopic pregnancy is a consequence of reproductive medicine. Possible etiology includes altered postoperative tubal function, raised hormonal levels during stimulation, embryo placement next to tubal ostia because of excessive force during ET, retrogradeuterine contractions and transfer of many embryos (3).

Conclusion

Diagnosis of extrauterine pregnancy is difficult and therefore late diagnoses are common. The most important factor in prevention of such cases is early diagnosis of heterotopic pregnancy. After ET, the initial US should be performed in week 4. Even in intrauterine pregnancies, adnexae should be carefully inspected, and even earlier investigation must by carried out in case of abdominal pain and non-specific complaints.

BhCG level and its early rise should raise a suspicion index. If a patient's pregnancy after IVF-ET is hemodimamically instable, one should consider ruptured extrauterine pregnancy and refer to explorative laparotomy (4,5).

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HETEROTOPIČNA TRUDNOĆA POSLE *IN VITRO* FERTILIZACIJE I EMBRIO TRANSFERA

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Incidenca heterotopične trudnoće u celoj populaciji je oko 1 na 7000 trudnoća, a 1 od 100 trudnoća do kojih dolazi nakon stimulacije ovulacije i *in vitro* fertilizacije sa embrio-transferom.

Posle primene adekvatne stimulacije ovulacije sa menotrofinom i dostignutim nivoom estradiola (E2) od 989 pg/ml devetog dana, pratili smo rast folikula transvaginalnom ultrasonografijom. Pod kontrolom ultrazvuka i sa primenjenom intravenskom analgezijom, aspirirali smo 6 oocita (jajnih ćelija). Četiri od šest zrelih jajnih ćelija bilo je oplođeno i po želji bolesnice, sva 4 embriona bila su ubačena transcervikalno dva dana nakon aspiracije.

Test na trudnoću je bio pozitivan 15. dana, sa nivoom β-hCG od 150ml U/ml. U šestoj nedelji njen nivo β-hCG bio je 350 mlU/ml. U tom periodu, bolesnica se požalila na izvesno krvarenje iz vagine. U sedmoj nedelji nivo β-hCG je bio 2122 mlU/ml, a ultrazvučnim pregledom verifikovan je gestacijski mešak, koji je odgovarao nedeljama trudnoće. U osmoj nedelji, transvaginalnom ultrasonografijom, bio je uočen kolabirani gestacijski mešak u uterusnoj šupljini, i drugi gestacijski mešak, van uterusa, dok je nivo β-hCG bio 29700 ml U/ml. U to vreme se bolesnica požalila na jak bol, a ultrazvučnim pregledom, otkriveno je prisustvo slobodne tečnosti u Duglasovom prostoru. Punkcijom Duglasovog prostora dobijena je krv. Učinjena je laparotomija, sa levom salpingektomijom. Revizijom uterusnog kavuma, potvrđeno je da se radi o zaostalom pobačaju, što je verifikovano i patohistološkim nalazom (horionske čupice sa embrionalnim tkivom).

Posle transfera embiona, prvi ultrazvučni pregled treba obaviti u četvrtoj nedelji. Čak i kod intrauterusne trudnoće, adneksa treba da budu pažljivo pregledana, a rani pregled treba da se obavi i u slučaju postojanja abdominalnog bola ili bilo kog nespecifičnog simptoma na koji se bolesnica žali. Nivo β-hCG i njegov rani porast mogu biti razlog za sumnju. *Acta Medica Medianae 2007;46(3):66-67.*

***Ključne reči**: heterotopična trudnoća, fertilizacija in vitro, embrio transfer*