Thai Journal of Obstetrics and Gynaecology
June 2001, Vol. 13, pp. 111-114

CASE REPORT

Successful delivery after combined pregnancy

Vorapong Phupong MD,
Wanvadee Sripitak MD,
Somchai Suvajanakorn MD.

Department of Obstetrics & Gynecology, Faculty of Medicine, Chulalongkorn University, Rama IV Road, Pathumwan, Bangkok 10330, Thailand

ABSTRACT

A combined pregnancy is a rare obstetric condition. It occurs more frequently as a consequence of assisted reproductive technology. We report the case of a 33-year-old woman with a history of primary infertility. The pregnancy was achieved with IVF-ET. She was presenting with left lower abdominal pain at six weeks gestation. The preoperative diagnosis was combined intrauterine and extrauterine pregnancy. Emergency exploratory laparotomy was performed, conceptive tissue and a blood clot at the left fimbria were removed and the bleeding point was cauterized. Intrauterine pregnancy was continued until term without any complication. A female baby was delivered by cesarean section due to cephalopelvic disproportion. The postoperative course was uneventful. She and her baby were well at the discharge and six-week follow-up. When women who have achieved pregnancy with IVF-ET, present with symptoms and signs of extrauterine pregnancy, combined pregnancy should be suspected because of a high incidence in this group of patients.

Key words: combined pregnancy, extrauterine pregnancy, IVF-ET

Combined intrauterine and extrauterine pregnancy or heterotopic pregnancy, a rare obstetric phenomenon, occurs in approximately 1 of 30,000 spontaneous pregnancies.[1,2] The occurrence of these pregnancies is increased in women who have had reconstructive pelvic surgery, pelvic inflammatory disease, artificial ovarian hyperstimulation[3] and assisted reproductive technologies, such as in vitro fertilization/embryo transfer (IVF-ET) and gamete intrafallopian transfer (GIFT).[4] Herein, we report a case of combined intrauterine and tubal pregnancy after IVF-ET with successful outcome.

Case report

A 33-year-old G1P0 pregnant woman with a three-year history of primary infertility, presented with left lower quadrant abdominal pain five days prior to admission. She also had vaginal bleeding three days before. Her last menstrual period was on April 14,1999. The pregnancy was achieved with IVF-ET. Her past history and family history were unremarkable. At admission, her blood pressure was 100/60 mmHg, pulse 72/min, and temperature 36oC. The abdomen was soft, with tenderness in the left iliac fossa without rebound tenderness. Pelvic examination revealed a closed cervix without bleeding, soft uterine size of about

six weeks gestation. The left adnexa was tender but no definite mass was palpated. Transvaginal ultrasonography was performed and revealed a viable intrauterine pregnancy with a fetal crown-rump length consistent with six weeks, and an additional ill defined left complex adnexal mass of two cm. Free fluid in the cul-de-sac was also seen. A presumptive diagnosis was combined intrauterine and extrauterine pregnancy.

An emergency exploratory laparotomy was performed under general anesthesia. A hemoperitoneum (estimated as 100 ml) was apparent and small ruptured left fimbrial pregnancy with minimal active bleeding was seen. The conceptus and blood clot were seen at the fimbrial end. The conceptive product and blood clot were removed and hemostasis was achieved by electrical cauterization. No blood replacement was required. The patient's postoperative course was uneventful, and she was discharged four days after surgery. The pathology report was immature placental tissue. She had an uncomplicated antenatal course, and a normal 3,600 gm female infant with an Apgar score of 9 and 10 at 1 and 5 min, respectively, was delivered by cesarean section at 39 weeks gestation due to cephalopelvic disproportion. Both tubes and ovaries were normal. She and her baby were discharged on the 4th day after an uncomplicated postpartum course.

Discussion

Combined intrauterine and extrauterine pregnancy had been thought to be a rare phenomenon, occurring in 1 of 30,000 pregnancies.[1,2] But the recent literatures has demonstrated that this condition is more common. The incidence is approximately 1 of 100 to 1 of 700 clinical pregnancies achieved using IVF.[4-7] This increase is due to the use of artificial ovarian hyperstimulation and assisted reproductive technologies.[4,8-10]

The risk factor in our case was IVF-ET, similar to previous reports.[4,6,11] Other risk factors include reconstructive pelvic surgery,[3,5] pelvic inflammatory disease,[2,3,5,12,13] congenital mullerian abnormalities,[5,8] artificial ovarian hyperstimulation,[2-5,12,13] GIFT[4] and exposure to diethylstilbesterol (DES).[12,14]

Predisposing factors of extrauterine pregnancy following ET include uterine cramping,[6,15] traumatic ET with uterine bleeding,[15] a large amount of transfer medium,[16,17] the use of too much pressure in the transfer process,[4,6] and multiple embryo transfers.[4,5,10,16,18] These result in retrograde delivery of the embryos to the fallopian tube. In our case only 20 μl of transfer medium was used and three embryos were transferred.

The preoperative diagnosis of a combined pregnancy requires a high index of suspicion. The symptoms and signs are not different from those with extrauterine pregnancy.[18] Four common presenting characteristic signs and symptoms include abdominal pain, an adnexal mass, peritoneal irritation and an enlargement of the uterus.[1,2,5] Abdominal pain was the most frequent symptom found in 81.8-100%.[2,4,10,12,18] Vaginal bleeding was found in 31.8-50% of cases.[2,12,18] The other symptoms and signs including adnexal mass, peritoneal irritation and enlarged uterus were found in 43.9%, 43.9% and 42.4% of cases, respectively.[2] Fifty percent of cases did not complain of vaginal bleeding,[10] probably because of the existing intrauterine pregnancy. The symptoms and signs in our case were abdominal pain, vaginal bleeding and enlarged uterus.

Ultrasonography is the method applied for diagnosis, but the findings in combined pregnancy are not specific. It mimics other conditions, i.e. an ectopic pregnancy with pseudogestational sac, or an intrauterine pregnancy with an ovarian or corpus luteum cyst with hemorrhage.[19,20] The transvaginal route is superior to the transabdominal route.[5,16] The only pathognomonic finding is visualization of a living fetus outside the uterus in a patient with proven intrauterine pregnancy.[8,13] This pathognomonic finding could be established in only 14% of cases.[21] Ultrasonography combined with clinical observations lead to the diagnosis in 41.1-84% of cases,[10,16] whereas ultrasonography alone, in the absence of any clinical abnormalities, lead to the diagnosis in 30-54% of cases.[5,9] In our present case, ultrasonography helped

confirm the diagnosis.

Other investigations such as laparoscopy may be used in symptomatic patients with difficulty of an accurate clinical and sonographic diagnosis.[9] Magnetic resonance imaging (MRI) may be used as an adjuvant diagnostic modality in confirming the location of extrauterine pregnancy.[8]

Intervention should be considered once a combined pregnancy has been diagnosed in order to decrease maternal morbidity and mortality and to increase the chances for preserving her reproductive capacity.[8] The cornerstone of the management is termination of the extrauterine pregnancy in order to avoid the risk of rupture and intraperitoneal hemorrhage as soon as the diagnosis of combined pregnancy has been made.[2,10] The choice of management depends on the specifics of extrauterine pregnancy. Among extrauterine pregnancies diagnosed, there have been 93.2% tubal pregnancies and 6.0% ovarian pregnancies.[2] Thus, salpingectomy was the most common treatment applied for termination of the extrauterine pregnancy.

Laparotomy is normally reserved for cases with life threatening hemoperitoneum, cornual or interstitial pregnancies.[9] Laparoscopy is also used for management in patients with hemodynamically stable condition. It is a minimally invasive procedure and does not jeopardize a viable intrauterine pregnancy,[9] but it requires well-trained staff and is expensive. Hence, our case was managed with emergency exploratory laparotomy, removal of the conceptive tissue and blood clot at the left fimbria and cauterization of the bleeding point. The intrauterine pregnancy continued until term with favorable maternal and neonatal outcomes, similar to previous reports.[2,5,8-10,13,16 17] Approximately 50-75.6% of the intrauterine pregnancies have been delivered alive and survived.[2,9,10,16]

In conclusion, the potential diagnosis of combined intrauterine and extrauterine pregnancy should be considered in symptomatic patients, especially in those with predisposing factors. Intervention should be applied in order to decrease maternal morbidity and mortality, improve intrauterine pregnancy outcomes, and preserve reproductivity.

References

1. DeVoe RW, Pratt JH. Simultaneous intrauterine and extrauterine pregnancy. Am J Obstet Gynecol 1948;56:1119-26.
2. Reece EA, Petrie RH, Sirmans MF, Finster M, Todd WD. Combined intrauterine and extrauterine gestations: a review. Am J Obstet Gynecol 1983;146:323-30.
3. Vanderheyden JS, van Dam PA. The rising incidence of heterotopic pregnancy: two cases reports. Eur J Obstet Gynecol Reprod Biol 1987;24:341-6.
4. Goldman GA, Fisch B, Ovadia J, Tadu Y. Heterotopic pregnancy after assisted reproductive technologies. Obstet Gynecol Surv 1992;47:217-21.
5. Rizk B, Tan S'.. Morcos S, Riddle A, Brinsden P, Mason BA, et al. Heterotopic pregnancies after in vitro fertilization and embryo transfer. Am J Obstet Gynecol 1991;164:181-4.
6. Dor J, Seidman DS, Levran D, Ben-Rafael Z, Ben-Schlomo I, Mashiach S. The incidence of combined intrauterine and extrauterine pregnancy after in vitro fertilization and embryo transfer. Fertil Steril 1991;55: 833-4
7. Medical research international. In vitro fertilization-embryo transfer (IVF-ET) in the United States 1990: results from the IVF-ET Registry. Fertil Steril 1992;57: 15-24
8. Gaudier FL. Brumfield CG, Defcambre CA, Steinkampf MP, Brenreuter W. Successful delivery of mature twins after a ruptured interstitial heterotopic pregnancy: a case report. J Reprod Med 1995;40:397-8.
9. Louis-Sylvestre C, Morice P, Chapron C, Dubuisson JB. The role or laparoscopy in the diagnosis and management of heterotopic pregnancies. Hum Reprod 1997;12:1100-2.
10. Tal J, Haddad S, Gordon N, Timor-Tritsch I. Heterotopic pregnancy after ovulation induction and assisted reproductive technologies: a literature review from 1971 to 1993. Fertil Steril 1996;66:1-12.
11. Tani H, Oda K, Schichiri K, Arakawa O, Sato Y. Combined intrauterine and tubal pregnancy after in vitro fertilization and embryo transfer. Int J Gynecol Obstet 1990;33:359-63.
12. Laband SJ, Cherney WB, Finberg HJ. Heterotopic pregnancy: report of four cases. Am J Obstet Gynecol 1988;158:437-8.
13. Sepulveda WH. Sonographic diagnosis of combined intrauterine and extrauterine pregnancy. Int J Gynecol Obstet 1990;31:361-4.
14. Muasher SJ, Garcia JE, Jone HW Jr. Experience with diethystilbesterol-exposed infertile women in a program of in vitro fertilization. Fertil Steril 1984;42:20-4.
15. Sondheimer SJ, Turek RW, Blasco L, Strauss J III, Arger P, Mennuti M. Simultaneous ectopic pregnancy with intrauterine twin gestations after in vitro fertilization and embryo transfer. Fertil Steril 1985;43:313-6.
16. Marcus SF, Macnamee M, Brinsden P. Heterotopic

pregnancies after in vitro fertilization and embryo transfer. Hum Reprod 1995;10:1232-6.
17. Raziel A, Friedler S, Herman A, Strassburger D, Maymon R, Ron-El R. Recurrent heterotopic pregnancy after repeated in-vitro fertilization treatment. Hum Reprod 1997;12:1810-2.
18. Tummon IS, Nisker JA, Whitmore NA, Yuzpe AA, Daniel SAJ. Transferring more embryos increases risk of heterotopic pregnancy. Fertil Steril 1994;61:1065-7.
19. Hann LE, Bachman DM, McArdle CR. Coexistent intrauterine and ectopic pregnancy: a reevaluation. Radiology 1984;152:151-4.
20. Richards SR, Stempel LE, Carlton BD. Heterotopic pregnancy: reappraisal of incidence. Am J Obstet Gynecol 1982;142:928-30.
21. van Dam PA, Vanderheyden JS, Uyttenbroeck F. Application of ultrasound in the diagnosis of heterotopic pregnancy : a review of the literature. J Clin Ultrasound 1988;16:159-65.