A Case of Twin Pregnancy with Complete Hydatidiform Mole and Coexisting Fetus Following IVF-ET

Hye-Eun Kwon,¹ Eun-Joo Park,¹ Sung-Hoon Kim,¹ Hee-Dong Chae,^{1,2}
Hye-Sung Won,¹ Chung-Hoon Kim,¹ and Byung-Moon Kang¹

Submitted October 9, 2001; accepted October 26, 2001

Twin pregnancy consisting of complete hydatidiform mole (H-mole) and a coexisting fetus occurs with an estimated incidence of 1 per 22,000–100,000 pregnancies. The incidence of this unusual twin pregnancy with complete H-mole and a coexisting fetus after in vitro fertilization and embryo transfer (IVF-ET) is not thought to be greater than that of general population. We present an unusual twin pregnancy with complete H-mole and a coexisting fetus that occurred following IVF-ET, which was terminated at 21 weeks of gestation and developed into nonmetastatic gestational trophoblastic tumor.

KEY WORDS: Coexisting fetus; complete hydatidiform mole; twin pregnancy.

INTRODUCTION

Complete hydatidiform mole (H-mole) with a coexisting fetus is rare, with an incidence of 1 per 22,000–100,000 pregnancies (1), and it has been reported that the incidence of a twin pregnancy with complete H-mole and a coexisting fetus after in vitro fertilization and embryo transfer (IVF-ET) is not greater than that of general population. Pregnancy is usually terminated but maintenance is attempted in some cases, especially in cases following treatment for infertility (2,3).

We report an unusual twin pregnancy with complete H-mole and a coexisting fetus that occurred following IVF-ET and was evacuated at 21 weeks of gestation and developed into nonmetastatic gestational trophoblastic tumor (GTT) that required methotrexate-citrovorum factor (MTX-CF) chemo-

therapy to achieve complete remission with brief review of the literatures.

CASE REPORT

A 35-year-old Korean woman, gravida 5, para 2, visited our hospital at the 11th week of gestation with vaginal bleeding. Twelve years ago she had delivered a healthy normal male baby at full term. Her past medical and family history was unremarkable. Menarche occurred at the age of 15 years, and the menstrual period was regular with an interval of 30 days.

She was transferred to our hospital at the 11th week of gestation with vaginal bleeding after IVF-ET in local hospital, with a diagnosis of bilateral tubal obstruction. Ultrasonographic examination revealed an intrauterine pregnancy with crown rump length 33 mm (size of 10⁺² weeks of gestation) and normal fetal heart beat; however, there was a subchorionic echogenic lesion sized by 71.2 × 32.3 mm. She was thought to be at risk of threatened abortion, and advised to have absolute bed rest and close follow-up.

At the 15th week of gestation, maternal serum alpha-fetoprotein (AFP) was 56.9 ng/mL and free β -human chorionic gonadotropin (β -hCG) was

¹ Department of Obstetrics and Gynecology, College of Medicine, Asan Medical Center, University of Ulsan, Poongnap-Dong, Songpa-Gu, Seoul, South Korea.

² To whom correspondence should be addressed at Department of Obstetrics and Gynecology, College of Medicine, Asan Medical Center, University of Ulsan, 388-1, Poongnap-Dong, Songpa-Gu, Seoul 138-736, South Korea; e-mail: hdchae@www.amc.seoul.kr.

174 ng/mL; the latter was calculated to have a risk ratio of 1/9 of Down syndrome, and so we considered fetal karyotyping by amniocentesis. However, the patient refused amniocentesis, and revisited the hospital for sustained vaginal bleeding at the 17⁺⁴th week of gestation. At that time, a normal fetus of the 18th week of gestation coexisted with a suspicious subchorionic hematoma sized by 90.3 × 30.4 mm, and she was admitted with a diagnosis of threatened abortion. The uterus was enlarged to 4 months' gestation on pelvic examination and the cervix was not dilated. On complete blood count (CBC) at admission, white blood cell (WBC) count was 7800/mm³, hemoglobin 9.4 g/dL, and platelet count 234,000/mm³. Blood coagulation test, liver function test, renal function test, and blood electrolyte were normal. Urine analysis was not specific. The chest X-ray and electrocardiography were normal. All through the 12th day after admission, there were no uterine contractions and fetal heart beat was regular on monitoring. On the 13th day after admission, at the 19⁺²th week of gestation, the patient complained of chilling, fever (39–40°C) associated with myalgia and vomiting. The patient was suspected of having an intrauterine infection. Antibiotics and antipyretics were administered and after 12 h, the

fever had subsided. On CBC at that time, WBC count was 12,000/mm³, hemoglobin 8.1 g/dL, and platelet count 263,000/mm³. C-reactive protein (CRP) was 2.4 mg/dL. Amniocentesis was planned for evaluation of intrauterine infection on the next day; however, external monitoring revealed regular uterine contractions with 3-min intervals and 25 mmHg of intensity. CRP was increased to 6.7 mg/dL, and Nitrazine test result was equivocal. We doubted premature rupture of membrane. Ultrasonography showed a mixed echogenic lesion in the uterine fundus, sized by 98.1 × 55.3 mm with vascular invasion (Fig. 1). However, there was no congenital anomaly and the fetal heart beat was normal. By ultrasonographic findings as above, we guessed the patient had a twin pregnancy combined by H-mole, and rechecked serum β -hCG level was 321,000 mIU/mL. The next day, a high fever (up to 38.5°C) developed, and CRP was increased to 87.8 mg/dL. Blood culture for bacterial origin identified methicillin-resistant staphylococcal infection. On the 19th day after admission, at the 20⁺¹th week of gestation, the patient delivered male baby, 320 g, with tissue of H-mole. Apgar score was zero at 1 and 5 min, and there was no fetal gross anomaly except of edema behind the neck (Fig. 2). The weight of placenta

Fig. 1. Ultrasonographic finding showing a mixed echogenic lesion with a coexisting fetus.

Fig. 2. Fetus after termination. There was no fetal gross anomaly except for edema behind the neck.

was 315 g, and the length of cord was 20 cm. The fetal placenta was a dysmature placenta, and histological acute chorioamnionitis was observed. There were necrotic and hemorrhagic decidual tissues and trophoblast in muscular tissue of the placental bed. H-mole tissue showed hyperplasia of trophoblast and vacuolar degeneration of whole villi tissue, and there were no vascular tissues and nucleated red blood cells (RBCs) consistent with complete H-mole (Fig. 3). After delivery, we did suction curettage and obtained 410 g of H-molar tissue, showing trophoblast villi of

the shape of grapes. There was bleeding amounting to 1000 mL, and transfusion was done by whole blood 3 U, fresh frozen plasma 3 U, and packed RBC 3 U. On CBC after transfusion, hemoglobin was 9.7 g/dL.

β -hCG level was 41,200 mIU/mL after suction curettage, and the level afterward decreased continuously down to 449 mIU/mL in about 3 months after delivery. However, the patient did not visit the outpatient clinic and follow-up was lost. About 5 months after delivery, the patient revisited, and

Fig. 3. Complete hydatidiform mole. Villi have extensive stromal edema with central cistern and a circumferential proliferation of trophoblast (H&E, $\times 40$).

at that time we found the level of β -hCG increase up to 1449 mIU/mL. We suspected persistent GTT, and decided to administer one cycle of MTX-CF chemotherapy. Chest X-ray finding to find pulmonary metastasis was normal. Three weeks after MTX-CF chemotherapy, β -hCG level was normalized, and no further problems followed.

DISCUSSION

In a twin pregnancy with complete H-mole and a coexisting fetus, the majority of pregnancies are usually terminated, but in some cases, the patients might want to maintain pregnancy despite of the risks. Physicians and patients might have a clinical dilemma deciding between immediate intervention or expectant management, especially in the case of highly desired pregnancies, such as in patients following assisted reproductive technology. When a twin pregnancy with complete H-mole and a coexisting fetus is suspected in early pregnancy, it is advisable to check the fetal karyotype (2,4). When a fetus is present in conjunc-

tion with partial H-mole, it generally exhibits the stigmata of triploidy, including growth retardation and multiple congenital malformations, and termination of the pregnancy is indicated (5). In the cases of a fetus with normal chromosomes and without clinical complication, there are some reports of delivery of a normal viable fetus (3,6). However, it is not yet known whether the maintenance of the pregnancy might result in greater risk of developing persistent or metastatic GTT than the termination of the pregnancy (2).

The size of the uterus is known to be useful in differentiating a twin pregnancy of H-mole with a viable fetus from a nonviable one (5). The pregnancy with a viable fetus proved to have a significantly smaller discrepancy between uterine size at evacuation than expected by dates. This might be because aggressive trophoblast may be manifest as more prolific molar growth and result in uterine size much larger than expected (7). For a similar reason, the β -hCG levels of the viable gestations at diagnosis are significantly lower than those of the previable gestations (2).

It has been reported that a twin pregnancy with complete H-mole and a coexisting fetus is usually accompanied by pregnancy complications, such as persistent vaginal bleeding, preeclampsia, hyperemesis gravidarum, hyperthyroidism, or trophoblastic embolism (5). Vaginal bleeding is the most common symptom, and it has to be checked carefully to determine whether it is combined with preterm labor or preterm premature rupture of membrane (5). Preeclampsia is considered an indicator for clinical aggressiveness, and the presence of preeclampsia associated with H-mole should be considered as an indication for immediate termination of pregnancy in most cases (5). It is known that serum β -hCG level decreases after the first trimester in twin pregnancy with complete H-mole and a coexisting fetus, and abrupt increase of β -hCG level during the second trimester should be considered an indicator for pregnancy termination (3,5,8,9).

Although the natural clinical course and appropriate management of twin pregnancy with complete H-mole and a coexisting fetus are somewhat limited given the rarity of this phenomenon, in the cases of patients who have undergone treatment for infertility, like the present case, the termination of pregnancy should be decided very carefully considering the patient's wants, clinical status, and laboratory findings. It has been suggested that serially decreasing serum β -hCG levels and normal fetal karyotype without any serious clinical complications are requirements for expectant management (10,11). Also, it might be necessary to follow up the patients carefully for possible progression of persistent or metastatic GTT after ter-

mination, because the risk of progression is high in these cases.

REFERENCES

1. Jones WB, Lauersen NH: Hydatidiform mole with a coexistent fetus. *Am J Obstet Gynecol* 1975;122:267-272
2. Vejerslev LO: Clinical management and diagnostic possibilities in hydatidiform mole with coexistent fetus. *Obstet Gynecol Surv* 1991;46:577-588
3. Jinno M, Ubukata Y, Hanyu I, Satou M, Yoshimura Y, Nakamura Y: Hydatidiform mole with a surviving coexistent fetus following in-vitro fertilization. *Hum Reprod* 1994;9:1770-1772
4. Barlogie B, Drewinko B, Schumann J, Gohde W, Dosik G, Latreille J, Johnston DA, Freireich EJ: Cellular DNA content as a marker of neoplasia in man. *Am J Med* 1980;69:195-203
5. Bristow RE, Shumway JB, Khouzami AN, Witter FR: Complete hydatidiform mole and surviving coexistent twin. *Obstet Gynecol Surv* 1996;51:705-709
6. Anderson CK, Deiter RW, Motz MJ, Goldstein JA: Complete hydatidiform mole with a coexistent healthy, viable fetus near term. A case report. *J Reprod Med* 1996;41:55-58
7. Goldstein DP, Berkowitz RS, Bernstein MR: Management of molar pregnancy. *J Reprod Med* 1981;26:208-212
8. Hone PT, Cochrane CR, Gmelish JT, Austin JA: Coexistent trophoblastic tumor and viable pregnancy. *Obstet Gynecol* 1971;38:899-904
9. Yee B, Tu B, Platt LD: Coexisting hydatidiform mole with a live fetus presenting as a placenta previa on ultrasound. *Am J Obstet Gynecol* 1982;144:726-728
10. Suzuki M, Matsunobu A, Wakita K, Nishijima M, Osanai K: Hydatidiform mole with a surviving coexisting fetus. *Obstet Gynecol* 1980;56:384-388
11. Thomas EJ, Pryce WI, Matlby EL, Duncan SL: The prospective management of a coexistent hydatidiform mole and fetus. *Aust NZ J Obstet Gynecol* 1987;27:343-345