A successful subsequent pregnancy after fetal reduction of one of the monozygotic twins: A case report

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A 34-year-old woman attended our consultation clinic for primary infertility. The couple had complained of infertility for 10 years with no apparent reason.

They were arranged with IVF-ET program. After 10 days of r-hFSH (Gonal-f, Serono, Switzerland, 225 U/d) injection, 8 oocytes were collected and 6 were fertilized by intracytoplasmic sperm injection (ICSI). On day 3 after oocyte retrieval, two embryos were transferred into the uterus that had eight even, regular, spherical blastomeres and no or very few fragments. The embryos were not assisted hatched before transfer. Two weeks later, she was confirmed pregnant for the serum hCG level reached 1172 mIU/ml. Ultrasound scan was performed at 7 gestational weeks, which showed two intrauterine gestational sacs, one sac with a fetal pole and fetal heart and the other sac with two separate fetal poles and fetal hearts (Fig. 1). She was diagnosed with a triplet pregnancy containing a monochorionic pair of twins.

The couple were fully informed about the alternative fetal reduction protocol and insisted to reduce one of the monozygotic twins. Selective fetal reduction was performed on day 47 of

pregnancy. Under the guidance of vaginal ultrasound, alongside the transducer a 20-gauge needle (Wallace) was inserted into the uterine cavity and fetal thorax. Stirring the pole till the fetal heart beating vanished. The other fetus in the same sac, along with the solitary fetus was intact, and both of the fetal hearts remained (Fig. 2). The next day, examination revealed that both remaining fetuses were normal.

Two live male infants were delivered by cesarean section at 33⁺⁵ week's gestation, with birth weights of 1735 g and 1965 g respectively.

Patients who undergo IVF-ET procedures are more likely to deliver multiple-birth infants than women who conceive naturally [7]. Multiple pregnancy has important medical and social implications that require consideration [2]. The anomalies that are more frequent among twins at birth include all of the most common major malformations, plus premature delivery and low birth weight, plus fetal, perinatal and infant mortality.

Enzygotic twins are special twins, when the twinning event occurs after a single trophoblast has differentiated to form a membrane around the inner cells of the compacted morula, then cells within the single contiguous cell mass must establish two systems of body-symmetry axes inside the single trophoblast. Those twins will be monochorionic, among which, risk of congenital malformations is greater than dizygotic twins, such as conjoined malformation and twin trans-fusion syndrome. Common knowledge has it that these anomalies and complications that are associated in excess with twin births are due more or less exclusively to monozygotic twins as results of the disrupted embryogenesis ('splitting') required for the initiation of monozygotic twin development.

Fetal reduction is a widely accepted procedure. It is useful in reducing the morbidity and mortality of multiple

Capsule Reduction of monochorionic twins contained in multiple pregnancies appears to be a safe option. Successful reduction of one of the monozygotic twins provides a choice for reproductive medicine workers and patients.

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Fig. 1 Ultrasound appearance of triplet pregnancy containing a mono-chorionic pair of twins at 7 weeks gestation before fetal reduction. All the three fetal poles were detected heartbeat positive

Fig. 2 Ultrasound appearance of triplet pregnancy containing a mono-chorionic pair of twins after fetal reduction of one of the mono-chorionic twins. The “reduced” fetal pole’s heartbeat vanished (*green arrow*). The other fetus in the same sac and the solitary fetus remained heartbeat positive

gestations [5]. Triplet pregnancy can be reduced to twins or monocyosis. Reduction of the mono-chorionic pair is frequently offered because gestational length is prolonged [1,3]. Skiadas et al. reported that pregnancies that underwent selective reduction delivered, on average, 52 days later than those not having selective reduction, and when triplet pregnancies containing a mono-chorionic pair were reduced to singletons, the main gestational age at delivery was 39.2 weeks compared with 34.3 weeks when the pregnancy was reduced to twins [6].

In summary, reduction of mono-chorionic twins contained in multiple pregnancies appears to be a safe option, since pregnancy complications are rare and obstetrical outcome is favorable in most of these cases [4]. Our successful reduction of one of the monozygotic twins provides a choice for reproductive medicine workers and patients. Long-term follow-up of infants must be conducted, but at present there is no great reason to be concerned.

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