

CASE REPORT

Selective Fetal Reduction of Conjoined Twins in Twin Pregnancy

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ABSTRACT

Background: The incidence of conjoined twins is rare. In early pregnancy, transvaginal ultrasound may facilitate diagnosis and prompt intervention can be done.

Case Report: A 35 years old patient with history of infertility for 17 years conceived after In vitro fertilization–embryo transfer with donor oocytes due to ovarian factor; three embryos were transferred. Transvaginal sonography was done on 21st day after transfer and it revealed three gestational sacs with fetal pole in all the sacs. Repeat TVS done on 65th day post embryo transfer revealed one gestational sac with single live embryo, second sac with two embryos joined at thorax and abdomen with a common heart, and two heads. Couple was then counseled for fetal reduction in view of expected poor outcome of conjoined twins. Selective fetal reduction was done at 12 weeks gestation with intra-cardiac potassium chloride administration. Pregnancy is now ongoing with an apparently normal live singleton fetus.

Conclusion: When conjoined twins are detected early, fetal reduction is a good modality of management. These pregnancies are associated with severe complications, maternal and fetal morbidity and mortality. Hence, the sooner the fetal reduction is, the better the management of conjoined twins.

Keywords: Conjoined twins, Fetal reduction, Potassium chloride, Transvaginal sonography.

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BACKGROUND

The incidence of conjoined twins is approximately 1 in 50,000 live births. It is a random event resulting from incomplete division of single blastocyst between 13 and 15

days post-conception. An alternative theory suggests its origin from the secondary union of two separate embryonic discs¹. About 75% of conjoined twins are female. Forty percent of conjoined twins are stillborn and more than 50% of those born alive die during the neonatal period². The extent of fusion determines the degree to which the internal organs are shared. In early pregnancy, transvaginal ultrasound may facilitate the diagnosis. A newer classification has been proposed based on the three-dimensional relationships between the two fetal body planes during early embryogenesis³.

CASE REPORT

A 36 years old patient with history of infertility for 17 years conceived after IVF-ET with donor oocytes due to ovarian factor infertility; and three embryos were transferred. First beta-HCG report on 14th day was 1380 IU, pregnancy was supported with progesterone. Transvaginal sonography was done on 21st day after transfer. Three gestational sacs with fetal pole were seen. Crown rump length of the first fetus was 7 weeks and 2 days, crown rump length of second and third fetuses was 6 weeks and 4 days. Repeat transvaginal sonography was done on 65th day post embryo transfer. It revealed one sac with crown rump length of 11 weeks and 4 days, cardiac activity was present. Second sac showed two embryos joined at thorax & abdomen with a common heart, and two heads with cardiac activity present (Figures 1 to 3). Lambda sign: Confirmed different chorionicity of two gestational sacs.



Fig. 1: Two gestational sacs with one fetal head in one sac and two fetal head in second sac (2D ultrasound)

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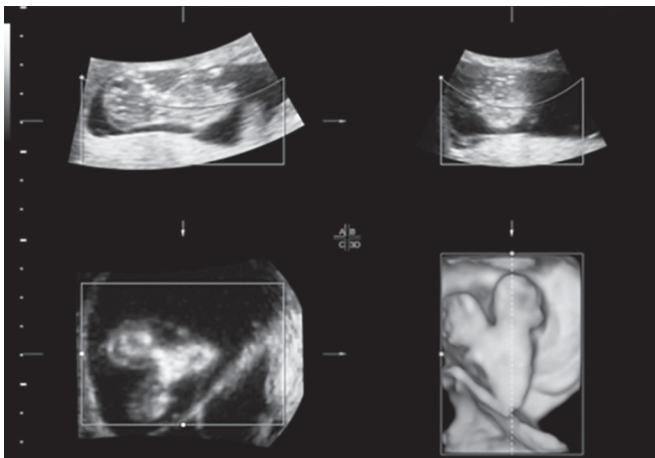


Fig. 2: 3D USG showing conjoined fetus

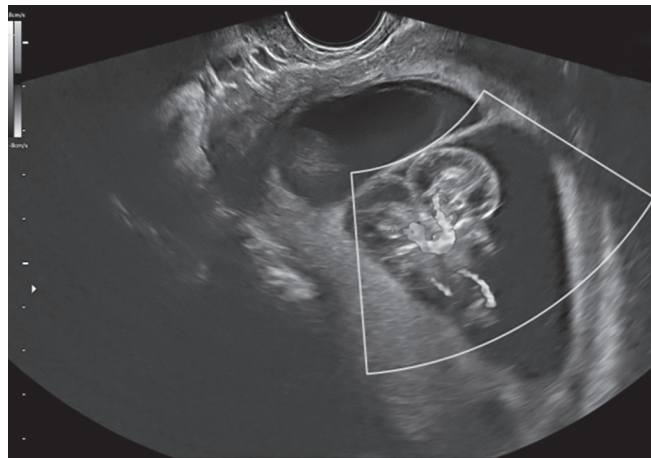


Fig. 3: Colour Doppler showing single heart in conjoined twin

Couple was counseled for fetal reduction in view of expected poor outcome of conjoined twins. Written informed consents were taken, Selective fetal reduction was done transabdominal at 12 weeks gestation with intra-cardiac potassium chloride administration. Post procedure, post procedure sonography revealed absent cardiac activity in conjoined twin. Cardiac activity was present in normal fetus. Pregnancy is now ongoing with an apparently normal live singleton fetus of 27 weeks gestation.

DISCUSSION

In early pregnancy, when transvaginal ultrasound may facilitate diagnosis, the typical picture is that of a monoamniotic twin pregnancy with a single yolk sac alongside two embryonic poles. After 8 weeks, increasing fetal activity helps differentiate normal monoamniotic from conjoined twins. Increased Nuchal translucency and subcutaneous edema may be noted in thoracophagus twins.

In the second trimester, the sonographic features comprise lack of a separating membrane, inability to demonstrate completely separate fetal bodies, with both heads persistently at the same level with no change in their relative position. Depending on the type of fusion, backward flexion of the cervical and upper thoracic spine may be present.

There may be more than three vessels where the umbilical cord is single. Doppler waveforms of the umbilical artery show a characteristic 'double layer' spectral pattern reflecting two separate arterial supplies within the same umbilical cord which is considered diagnostic of conjoined twins⁴. Fetal echocardiography is indicated due to the high incidence of cardiac anomalies. three dimensional (3D) ultrasound may serve as an adjunct to demonstrate the extent of fusion⁵.

Prenatal magnetic resonance imaging (MRI), particularly in the third trimester can provide additional information in planning for delivery and postnatal surgery.

Magnetic resonance imaging can be superior to ultrasound in cases of maternal obesity or oligohydramnios and also produces 3D reconstructed images in any plane. Postnatal MRI is important particularly in craniophagus to assess cortical fusion and in thoracophagus, to evaluate intracardiac anatomy, blood flow and ventricular wall motion⁶.

The option of termination of pregnancy should be discussed. The prognosis for the twins depends upon the extent of fusion and the presence of separate organs. Twins with cerebral or cardiac fusion have poor prognosis⁷. Antenatal pediatric surgical consultation with the national center with expertise in conjoined twins is valued and, while the majority of parents decide on termination, those who continue may do so with the understanding of the need for major surgical separation and reconstruction and its associated short and long term morbidity.

Fetal reduction of twins to singleton is associated with a lower risk of prematurity and superior perinatal outcome compared with non-reduced twins. Therefore, the option of fetal reduction should be considered in certain cases of twin pregnancies, where the risk for adverse outcome seems exceptionally high⁸. Ethical tension is compounded with the healthy fetal interests. The protection of co-twin must be priority and one should always consider that any invasive attitude towards malformed twin may affect his healthy co-twin⁹.

Selective fetal reduction of pregnancy is the destruction of one or more implanted fetuses developing in the womb. However they recognize a basic difference between these two procedures. In the case of selective termination one eliminates 'an abnormal fetus' whereas in the case of fetal reduction 'one or more presumably normal fetus is reduced'¹⁰. Embryonic reduction is not a selective procedure but numerical reduction of embryo.

CONCLUSION

Conjoined twin is a rare condition, high percentage of such fetus is stillborn, and those fetuses who survive

require surgical and medical attention throughout their life. These fetuses when born cause mental stress and financial burden to the family. Early prenatal diagnosis by 3D ultrasound and selective fetal reduction is the best available option of treatment in conjoined twins. Early detection of conjoined twins and early termination helps in reducing maternal and fetal morbidity and mortality.

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