Monochorionic Twins with One Fetal Death

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ABSTRACT

It is a common observation that one twin is usually lost (vanished) in as many as 20 % of twin gestation diagnosed in first trimester. The early loss is reported to have negligible effect on the pregnancy. Second and third trimester loss is associated with significant morbidity and mortality in the survivor. There is 20% probability of neurological damage which is difficult to predict. The surviving twin should be evaluated with USG and/or MRI. If no lesions are observed, counselling and expectant management should be adopted. The outcome is worse in monochorionic than dichorionic pregnancies. A case report of 28 years old pregnant women with parity G0000 was diagnosed with monochorionic twin gestation with one foetal death noted. Ultrasonogram revealed twin gestation with one foetal death with features of foetal Hydrops with Foetal Growth Restriction (FGR) in the live fetus. Close monitoring of the patient done with serial (biweekly) USG and weekly coagulation profile. She developed GHTN with GDM during her stay in hospital for which she received antihypertensive drugs and Metformin. She also received antenatally corticosteroids for foetal lung Maturity. Caesarean section was performed at 34 weeks of gestation, and normal new-born infant was discharged without any complications. We report a case of Monochorionic twins with one foetal death with complications mainly due to vascular anastomosis and unequal placental sharing causing Twin Twin Transfusion Syndrome (TTTS) which mainly predispose to foetal growth restriction and the consequences of co-twin death.

KEYWORDS
Diagnosed, Foetal lung Maturity, Twin Twin Transfusion Syndrome (TTTS), Pregnancy.

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INTRODUCTION

The incidence of multiple gestation is approximately 3.5 per 1000 birth worldwide[1,2] and 0.9-1 % in India.[3] Monochorionic twins occurs in 0.3 % of all pregnancies.[4] Antepartum death of one fetus in the second and third trimesters complicates up to 5 % of twin pregnancies and up to 17 % in triplet pregnancies.[5] Causes of second and third trimester loss could be TTTS, severe intrauterine growth restriction (IUGR), placental abruption and placental insufficiency. The cause often remains elusive. No fetal monitoring protocols have been shown to predict most of the losses. Twin with one twin foetal death as one of the most common complications of monochorionic placenta. The risk of death in the co-twin subsequent to the demise of one twin after 14weeks of gestation is 15 % in monochorionic gestations and 3% in dichorionic gestations.[6] There is a 30-50% risk of death for the surviving twin with a high risk of mother developing DIC while continuing pregnancy.[7] Survival of the living twin without maternal complication is a challenge to an obstetrician. This is a case of one twin foetal death with monochorionic placenta which is managed conservatively at Central Referral Hospital (CRH), Gangtok by close maternal and foetal monitoring.

CASE REPORT

Primigravida at 30week of pregnancy by Last Menstrual Period (LMP) and 24weeks (by early week scan) with twin gestation came for antenatal check-up on her first visit at CRH. Her previous USG showed twin gestation with features of ascites along with pericardial effusion and scalp oedema in one of the fetus. To know the foetal viability and amnionicity, her USG was repeated which showed twin gestation with one foetal death with features of foetus hydrops and foetal growth restriction in live foetus. Patient and family member counselled about the complications of the one foetal death. Patient closely monitored with serial (biweekly) USG and weekly coagulation profile. During her serial monitoring she developed Gestational hypertension and gestational diabetes. She was started on tablet Labetalol 300 mg/day and Metformin 1gm/day along with diet control. On her serial USG there was growth restriction of the live foetus from 30 weeks of in POG (by early USG scan). Patient was admitted for monitoring BP and foetal well-being. Corticosteroid was given for foetal lung maturity and she underwent elective LSCS on 31 / 08 / 18 at 34 weeks of POG (by early USG scan).
She delivered live baby girl, weighing 1.9 kg and dead girl, weighing 550 grams. Her post-operative period was uneventful and patient discharged on post-operative day 4 with a healthy baby.

DISCUSSION

Chronic inter-twin transfusion can occur in monochorionic twin pregnancy as vascular anastomoses are common in monochorionic placentae. Anastomoses can be superficial and deep. Almost in all monochorionic twins, there is a shared circulation in the placenta with different anastomosis which could be Artery-Vein, Vein-Vein, Artery-Artery anastomosis. Superficial anastomoses are bidirectional, artery-to-artery anastomoses (AAAs) and vein-to-vein anastomoses (VVAS). Superficial anastomoses, especially AAAS, which are more common than VVAS (85 % vs. 25 %),[8] play a protective role in monochorionic twin pregnancies. In contrast, deep anastomoses are arteriovenous anastomoses (AVAS) that are unidirectional, where the arterial blood of one twin drains into the venous system of the other. Unbalanced transfusion of blood from the net donor to the net recipient occurs in AVAS resulting in TTTS. Due to vascular anastomosis and unequal placental sharing causes Twin-Twin Transfusion Syndrome (TTTS) which mainly predispose to foetal growth restriction and the consequences of co-twin death. Single fetal Death can cause morbidity and mortality in the co-twin due to their shared placental circulation of a monochorionic twin or intrauterine environment that caused death of both twins. Donor is characterized by hypovolemia, oligohydramnios, growth restriction, abnormal Doppler in umbilical artery. Effects of single foetal death in monochorionic twins are acute Hypotension, anaemia, ischaemia in the co-twin due to exsanguination into the low-pressure vascular system of the decreased twin, resulting in morbidity (neurologic impairment 10-30 %) and death (10 %). TTTS should be managed in conjunction with fetal medicine centres. Treatment at higher centres for TTTS are Fetoscopy Laser Coagulation, Amnio-Reduction, Septostomy mainly. TTTS presenting before 26 weeks of gestation should be treated by fetoscopic laser ablation rather than amnioreduction or septostomy. There is evidence that the fetoscopic laser ablative method should be the Solomon technique (equatorial laser dichorionization).[9]

CLINICAL RELEVANCE/CONCLUSION

Previously live foetus in pregnancy with one foetal death was sacrificed to prevent complications to the mother. In the recent times, with advancement in the investigative tools and improved obstetric care, women with one twin foetal death can dream of having a healthy child even in a centre not specialized in high-risk pregnancy. Close foetal and maternal monitoring can play a major role in the management and vista for the society at large.

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