Case Report

Twin Pregnancy With Single Fetal Demise

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Abstract

Twin pregnancy with single foetal demise poses risk of mortality and morbidity in the surviving twin. A multidisciplinary approach, councelling, emotional support and intensive foetal surveillance are mandatory. Here we reported a case of twin pregnancy with single fetal demise in a 21yrs aged woman presented at her 32 weeks of pregnancy diagnosed on ultrasound examination. Conservative management was given with intense fetal and maternal monitoring till 36 wks of pregnancy. Emergency LUCS was done at her 36+ wks pregnancy due to premature rupture of membrane. Patient delivered a healthy baby with fetus compressus.

Key words: Foetal demise, chorionicity, monochorionic, foetus compressus, foetus papyraceus.

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Introduction

Singel foetal death in twin pregnancies is not rare; the reported incidence ranges from 0.5% to 6.8%[1]. The risk of mortality and morbidity in the surviving twin is considerable[3,4]. The death of one twin is also a shock to the parents and the attending obstetrician,who need to face the substantial foetal and maternal risks. A multidisciplinary approach, councelling, emotional support, and intensive foetal surveillance are mandatory.

Case Report

A 21-year-old female G2P1L1 attended to antenatal clinic of Combined Military Hospital Dhaka at her 32+ wks pregnancy for the first time with complaints of decreased foetal movements for 3 days and with ultrasound diagnosed twin pregnancy with single foetal demise. She had one previous LSCS with no antenatal and postnatal complications in previous pregnancy. According to patient's statement she was a regularly menstruating women. Her pregnancy was dated by early USG at 15 wks. It was her planned pregnancy but she was not on regular ANC. Her pregnancy was uneventful till 32 wks of pregnancy. She has no family history of twin or H/O taking ovulation induction drug. She has no h/o DM, HTN or thyroid disorder. On admission her all vital parameters were within normal limit. On abdominal examination SFH-34cm, FHS-146/min, FM+, leading twin was cephalic. Patient was treated with iron, calcium. lnj dexamethason doses were completed. Repeat USG with Doppler study done and found- monochorionic twin with single fetal demise, EFW-2 kg, AFI-adequate, FHS present in one fetus. With all routine pregnancy investigation LFT, Serum creatinine, Serum uricacid, Coagulation profile were done. All are within normal limit. Decision was taken to continue pregnancy till 37 completed weeks or atleast upto 34 wks with regular fetal and maternal monitoring. Maternal monitoring done by twice wkly CBC and coagulation profile, fetal monitoring by daily kick count, auscultation of fetal heart rate 3 times in a day, USG 2 wkly ,NST wkly .Patient and fetal condition were normal till 36 wks. AT 36 wks 3 days pt noticed premature rupture of membrane and liquor was meconeum stained, so emergency LUCS done in presence of child specialist. A healthy female baby of 2.75 kg was delivered. Placenta was single, Apgar score was 8/10,10/10, 2nd twin was dead female foetus with no congenital anomalies weighing 1.3 kg. Both maternal and fetal post operative period was uneventful, so patient was discharged at her 4th POD with good health.

Discussion

Single foetal death in twin pregnancies is not rare, the reported incidence ranges from 0.5 to 6.8%[1].Single foetal demise can occur during any gestation. A reliable estimate of the incidence with reference to the timing is difficult[2]. Single foetal demise in the first trimester seen as the vanishing phenomenon, which is relatively common and the prognosis for the surviving foetus is good [3] and mother is most likely to develop mild vaginal cramping. In contrast, single foetal death in the second or third trimester is uncommon and has been shown to be associated with increased risk of mortality and morbidity for the surviving twin[4], the dead twin may become either a foetus compressus or foetus papyraceus the

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incidence of which is (0.54%[5]).The degree of compression depends on the time span between foetal death & delivery, the larger the foetus, the more difficult it is to become a foetus papyraceus[2]. The causes of foetal death varied and included twin-twin transfussion, placental insufficiency, intrauterine growth retardation related to pre-eclampsia, velamentous insertion of the cord, cord sticture, cord around the neck and congenial anomalies[6]. Twin to Twin transfussion was found to be the common cause of fetal mortality[7]. In general, chorionicity rather than zygosity determines the risk of mortality and morbidity. Hence, it is important to determine the type of placentation by utrasonography. The prevalence of monochorionicity in single intrauterine death in twins is 50% to 70%[8]. In dichorionic twins, the prognosis for the surviving twin is relatively good and immaturity is the main risk factor. In the cases of monochorionic twins, the prognosis is poor and associated with neurological damage in the survivor[9]. When fetal demise occurs after mid gestation there is a 77% chance that the "Surviving twin" in a monochorionic gestation will either die or suffer major morbidity[10]. The observed survival difference between dichorionic and monochorionic twins has been attributed to placental vascular anstomosis, which is rarely seen in dichorionic placentas.The reported frequency of vascular connections in monochorionic placentas ranges from 85% to 98%[11]. The effects on the surviving twin include risks of neural tube defects, optic nerve hypoplasia, hypoxic ischemic lesions of the white matter (e.g.multicystic encephalomalacia), microcephaly(cerebral atrophy), hydranencephaly, porencephaly, haemorrhagic lesions of white matter, post haemorahagic hydrocephalus, bilateral renal cortical necrosis, unilateral absence of a kindney, gastro intestinal tract atresia, gastrochisis, aplasia cutis affecting scalp, trunk or limbs and multiple organ infractions may lead to severe disability in survivors and intrauterine or neonatal death[12]. Death of one fetus can lead to ischemic brain damage of the other twin by causing sudden hypotension and hampering the blood supply to other twin. In diamniotic twins, death of one baby can cause sudden rupture of the thin membrane between them again leading to sudden hypotension and death of the other twin. Single foetal death causes release of fibrin and tissue thromboplastins in circulations causing DIC. Though it is a very uncommon complication, it can be fatal both for the mother and the fetus. Another adverse effect of death of one fetus is transchorionic embolization, leading to death of the other fetus also[13]. The most feared complication in mother is coagulopathy which has been reported to occur in about 3-5 weeks following fetal demise. Romero et al[14] who found the incidence of DIC to be 25%.Therefore, when fetal demise occurs after first trimester, an initial maternal clotting profile with reassessment in 2-3 weeks is not unreasonable[14]. Other maternal complications include preterm Labour, infection from a retained foetus, severe pueperal haemorrhage, consumption coagulopathy and obstruction of Labour by a Low lying foetus papyraceous causing dystocia leading to caesarean delivery[15]. With more frequent use of USG and CTG for surveillance, the death of one twin is more likely to be detected antenataIly.

Recently, various biochemical markers have been implicated in diagnosing foetus papyraceous. Foetus papyraceous or vanishing twin has been shown to increase pregnancy associated plasma Protein A (PAPP-A) and free beta human chorionic gonadotropin (hcG) and Alpha-feto protein[15]. Antenatal death of one twin in late second or third trimester of a twin pregnancy poses an important management dilemma in obstetrics. In general, conservative management is advocated. True prevention of brain damage is possible only by inducing delivery before the vulnerable twin dies in utero. Killy et al[17] suggested that the foetal outcome is mainly gestation dependant and the goal should be to prolong pregnancy[17]. Cattanacl et at[18] favour conservative management until 37 weeks gestation, if foetal movements, cardiotocography and ultrasonography show no abnormality. Before that immediate delivery should be dirrected by obstetric indications. There is no specific contraindication to vaginal delivery. Single intrauterine death in twin is not an indication for caesarean section, unless there is evidence that the twins are monoamniotic with a 25% risk of cord entanglement[18]. It is recommended that all twin pregnancies with one dead foetus should be managed in tertiary referral centres with sufficient neonatal support. Fetal surveillance is required with ultrasound scans to detect foetal anomalies and assess foetal growth and liquor volume. Measurement of maximum pool depth of both sacs and with care taken to identify the dividing membrane and to ensure that each cord is studied separately. Rodis et at[19] have advocated frequent ultrasound monitoring for dichorionic twin pregnancies at 4 weeks intervals, monochorionic twin pregnacies at 2-3 weeks intervals and more frequent assessments every 1-2 weeks it discordancy is diagnosed. These measurements are complemented by regular non-stress testing, biophysical profile and Doppler ultrasonographic studies (after 24 weeks), cranisonography

by the transvaginal route, may provide additional information. MRI is more sensitive than USG to detect ischemic brain injury in the early phase. It is recomended that a MRI brain of the surving twin be performed at least two weeks after an intrauterine death of the co-twin to optimise the detection of any injury[20]. Echoencephalography can detect antenatal necrosis of cerebral white matter as brain atrophy or cavities in the white matter by day 3 of life[16]. A through neonatal evaluation is indicated for the surviving twin to detect central nervous system, renal, circulatory and cutaneous defects. Investigations may include high resolution USG of the brain, computed tomography, renal functions studies and MRI. Long-term follow up is mandatory[6].

Conclusion

The sequelae of a single fetal death in a twin pregnancy depend on the gestation and placentation. Death in the late second or third trimester is associated with significant morbidity and mortality in the surviving twin. Therefore, all twin pregnancies with one dead fetus should be managed in tertiary referral centers with sufficient neonatal support. A management plan should be individualized. Intensive fetal surveillance is required and the determination of chorionicity should be done early in the pregnancy. Proper care and management can salvage a good number of babies.

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