

INTRAUTERINE FETAL DEMISE OF CO-TWIN IN MULTIFETAL PREGNANCY

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ABSTRACT

Intrauterine twin gestation with demise of one of the foetuses pose anxiety in the mind of obstetrician, patient and the relatives. It is an uncommon complication of uniovular twins having monochorionic placenta. Fetal demise in the first half of pregnancy does not have adverse effect on the mother. Surviving co-twin is at risk of development of growth restriction, cerebral encephalomalacia and microcephaly. We present a case of 32 weeks of twin gestation with intrauterine fetal demise of one baby with hypofibrinogenemia and gestational hypertension. She was successfully managed with good maternal and fetal outcome.

Keywords: Intrauterine demise of co-twin; hypofibrinogenemia; multifetal pregnancy; Neonatal encephalomalacia

1. INTRODUCTION

In recent times, the number of twin, triplet and higher order multiple births have increased. The increase in dizygotic twins is due to overuse of ovulation induction drugs and Assisted Reproductive Technology (ART). The reported incidence of monozygotic multiple pregnancies is 1/80 for twins and 1/80² (1/6400) for triplets. [1,2] Intrauterine twin gestation with demise of one of the foetuses pose anxiety in the mind of obstetrician, patient and the relatives. It is an uncommon complication of monozygotic twins having monochorionic placenta.[3] In majority of cases, it is difficult to know the exact time of fetal demise in utero. Fetal demise in the first half of pregnancy does not have adverse effect on the mother.[4,5,6] Risk of development of DIC is more in third trimester of pregnancy.[3] Surviving co-twin is at risk of development of growth restriction, cerebral encephalomalacia and microcephaly.[7]Obstetric ultrasonography and Colour Doppler studies are helpful in diagnosis and management of such cases [6].This case is reported due to its rarity ,optimum outcome and the ethical

considerations required during its management.

2. CASE DETAILS

Primigravida, 24 year old, with history of seven and a half months amenorrhoea, was referred to gynaecology clinic as a case of twin pregnancy with one fetal demise at 32wks of gestation. She had undergone prophylactic cervical circlage at 4 months of gestation at outside private hospital. She had regular menstrual cycles with no history of twinning in family. No history of intake of ovulation induction drugs. Her vital parameters except for high blood pressure (150/100 mm of Hg) were normal. Per abdominal examination revealed pregnant uterus of 32 weeks size. Multiple fetal parts could not be appreciated. One baby could be felt in cephalic presentation with normal fetal heart rate. Her routine haematological investigations (Hb Platelet count ,BT,CT,PT,APTT)and serum uric acid(7 mg/dl) were normal .There was no albuminuria .Her serum fibrinogen level was 40 mg/dl .FDP and d dimer studies could not be performed for financial reasons. Obstetric ultrasonography revealed twin pregnancy with first alive baby, in cephalic presentation, of 30

wks gestation and second dead baby, of 19 wks 4 days gestation. Estimated fetal weight of live baby was 1420 grams. Amniotic Fluid Index was 6 cms in firstsac. No fetal congenital anomalies were seen in live baby. Placenta was diamniotic and monochorionic and was located at fundus. Fetal biophysical profile of surviving fetus was normal except reduced amniotic fluid index. Colour Doppler revealed decreased diastolic flow in umbilical artery. Right uterine artery showed decreased diastolic flow. Left uterine artery showed increased compensatory diastolic flow. Diastolic notch was present on left side. Middle cerebral artery showed normal parameters. Clinical diagnosis of 32 weeks of twin gestation with intrauterine fetal demise of one baby with maternal hypofibrinogenemia and gestational hypertension with growth restriction in surviving twin was made. She was advised bed rest, iron and calcium supplementation and high protein diet. Inj. Betamethasone 12 mg, one dose, antihypertensive (Tab. Aldomet 250 mg three times a day and Cap. Depin 10 mg) were started. She was transfused with four pints of Fresh Frozen Plasma in view of low fibrinogen levels. Careful maternal and fetal monitoring was done. Fetal biophysical profile was repeated every third day. It showed normal findings except reduced amniotic fluid index. Her Blood pressure remained in the range of 150/90 to 130/90 mm of Hg for one week. Other maternal and fetal parameters remained within normal limits. After seven days of admission, she developed headache, vomiting and rise in blood pressure to 190/110 mm of Hg. She was managed with additional dose of antihypertensive drug. She again developed premonitory symptoms of eclampsia after few days, in the form of headache, vomiting and high blood pressure of 160/110 mm of Hg. Her laboratory parameters were repeated and found to be same as previous. At gestational age of 34 wks and 1 day, decision of termination of pregnancy was taken mainly in the maternal interest. Patient and the relatives were counseled and explained

about the need for termination of pregnancy. They were told about the guarded prognosis of the fetus and the possible risk of excess hemorrhage during caesarean section. After consultation with pediatrician and anesthesiologist, patient was posted for elective LSCS under general anesthesia after two weeks of admission. First of twins was delivered by vertex presentation with birth weight of 1580 grams, male child with 7, 8, 9 Apgar. Second sac was ruptured. It showed thick pea soup colored non foul smelling liquor. A macerated fetus weighing 260 grams was delivered. Placenta weighed 350 grams. It was diamniotic monochorionic with marginal insertion of cord. There were no obvious abnormal vascular anastomotic channels. Due to non-availability of expertise, detailed placental study could not be carried out. There was no cord or fetal anomaly. Maternal blood pressure settled down to near normal in post-operative period. Postoperative period was uneventful. In view of the low birth weight and risk of infection, baby was kept in NICU. Baby received prophylactic antibiotics. Nasogastric feed was started after two days and was shifted to breast feeding thereafter. Mother and baby were discharged on 10th postoperative day with the advice for regular follow up for the baby regarding its neurological development.

3. DISCUSSION

Determination of zygosity is important in multifetal gestation, as the risk to the fetus differs with zygosity. [8] Incidence of death of one of fetuses of twin gestation, in-utero is 2.7% in second trimester and 6.7% in third trimester. [8] The risk of still birth is high with monochorionicity, non-western origin, assisted reproductive techniques (ART). [3] The fetal complications are more with monochorionicity in monozygotic twins. [3,9,10] Twin-specific complication in relation to zygosity is abnormal vascular communication, which is seen in monochorionic placenta. Types of abnormal communications are between artery-to-artery, vein-to-vein or artery-to-vein.

Most communications are hemodynamically balanced. Rarely, significant shunts between fetuses occur leading to acardiac twin-to-twin transfusion syndrome (TTTS). Other complications associated with vascular communications are cerebral palsy, microcephaly, multicystic encephalomalacia caused by ischaemic necrosis, leading to brain damage (because of hypotension or death of one twin) [11,12]. Effects of dead fetus on the surviving twin are unlikely in dichorionic gestation. Increased mortality and morbidity is observed in approximately 50 % in monochorionic twins due to shared circulation.[13] Risk of acute twin to twin transfusion is 25 percent.[8] It starts immediately after death of fetus, appears in USG or MRI after 4-6 weeks. It occurs only in monozygotic twins with monochorionic placentation and is commoner in artery to vein communication. Intrauterine DIC is rare. Adverse effects of dead fetus on the mother are rare, if death of fetus occurs before 34 weeks and is very rare before 17 weeks. Management of a case with death of a co-twin in the absence of other maternal complications, is conservative. If pregnancy is less than 34 weeks, serum fibrinogen levels are done weekly. If the pregnancy has reached up to 34 weeks, it should be terminated. One has to keep in mind that what killed one fetus might kill the second!! The question is what is the gestational age before which acute TTTS complications are considered rare? The question is difficult to answer, simply because nobody knows for certain. All published reports include only small number of cases with varying gestational ages and chorionicity. Most important is that the majority of them report death of one twin as a complication of twin-twin transfusion syndrome, which obviously has additional risks and very different pathological changes and effects on the surviving twin. It is always estimated that brain damage in the surviving twin occurs within 2-5 weeks following death of the other twin. The surviving fetus is to be scanned every two weeks. The worrying signs are

cerebral ventriculomegaly, microcephaly, signs of leukomalacia or any other anomaly such as cysts. Fetal MRI is very useful but the availability of experienced radiologist to do a fetal MRI is still a question. Neonatal cranial USG or MRI are done with counseling of parents

The present case of monozygotic twin pregnancy with 32 weeks gestation was referred by private practitioner with the diagnosis of death of co-twin. The relatives and the patient were extremely worried about the possibility of adverse outcome. After initial evaluation of the case, the patients and relatives were explained about the plan of management. They were counselled about the possible adverse fetal outcome due to prematurity, in case the pregnancy is terminated at 32 weeks of gestation. They were explained about the advantages and risk of continuation of pregnancy till 34 weeks. Neonatologists were consulted before decision of termination of pregnancy was taken. Keeping in mind the possible risk of hemorrhage at caesarean section, all arrangements were made regarding availability of blood and blood component therapy. She was successfully managed with good maternal and fetal outcome.

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