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Case Report

A telltale of twin pregnancy

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ABSTRACT

Intrauterine fetal death (IUFD) of one twin occurs most commonly during the first trimester. This phenomenon is known as a "vanishing twin". Single IUFD in the second or third trimesters is much less common. Single IUFD is observed more often in association with monochorionic than with dichorionic placentation. When it occurs in a monochorionic gestation it may be associated with a worse outcome for the surviving co-twin. The etiology of IUFD in a multiple pregnancy may be similar to singletons or unique to the twinning process. IUFD may be caused by genetic or anatomical anomalies, abruption, placental insufficiency, cord abnormalities such as a velamentous cord insertion, infection, and maternal disease including diabetes and hypertension. In monochorionic pregnancies, IUFD may result from complications of the twin-to-twin transfusion syndrome (TTTS). Most often, the smaller, donor twin dies, but IUFD can occur in the larger recipient twin. In addition, monoamniotic twins are at increased risk of cord entanglement and subsequent IUFD. Similar to singletons, the etiology of IUFD often remains elusive. Single IUFD in a multiple gestation can adversely affect the surviving fetus.

Keywords: Cerclage in twin pregnancy, Chorionicity, IUFD, Single fetal demise, Twins

INTRODUCTION

Fetal death in twin pregnancies is not rare. The rate of single fetal death at <34 weeks with the co-twin alive ≥3 days later is 3.5 percent for monochorionic twins and 1.2 percent for dichorionic twins. Frequency of fetal demise is higher if losses before 11-13 weeks were included.

Single fetal demise is a serious concern in monochorionic twins because of the placental vascular anastomoses. The fetal death of one twin in a monochorionic pregnancy can cause acute hypotension, anemia, and ischemia in the fetal co-twin due to exsanguination into the low-pressure vascular system of the deceased twin, resulting in morbidity or death of the co-twin. In a dichorionic pregnancy, this sequence is not a concern since there are no placental vascular anastomoses; however, death of one twin may reflect an adverse intrauterine environment that could also place co-twin at risk for morbidity or mortality.[1]

While the risk to the surviving co-twin in a monochorionic pregnancy is clear when the death of one twin occurs in the second or third trimester, the risk with death of one twin in the first trimester is unclear. It has been hypothesized that congenital anomalies and cerebral palsy may be attributable to early fetal loss of one conceptus in a twin gestation.

Compared with pregnancies conceived as singletons, additional risks to the survivor after demise of one twin include a reduction in mean birth weight, an increased risk of small for gestational age birth, and an increased risk of preterm birth.[2]

CASE REPORT

A 32-years-old gravida 2 para 1 living 1 with previous one vaginal delivery with monochorionic diamniotic (MCDA) twin gestation with 19.4 weeks period of gestation registered at peripheral hospital was referred to emergency in a tertiary care hospital in view of ultrasonography suggestive of fetal demise of one twin. Patient had one scan of 12.6 weeks gestation which was suggestive of MCDA type of twins. On examination pulse was 78 beats per minute, blood pressure 120/80 mm of Hg, uterus was 20-22 weeks, ballotable, relaxed. On per speculum examination external OS was closed, no leak was demonstrable. On per vaginal examination OS was closed and cervix was uneffaced. ANC profile was within normal limit. DIC (Disseminated intravascular coagulation) profile was sent which was within normal limits. Ultrasonography report was consistent with the findings of MCDA twin gestation with twin A 19 weeks, anterior placenta, adequate liquor, baby weight was 200 gm, twin B was IUFD (Intrauterine fetal demise). The patient was admitted in the antenatal ward. Anomaly scan was done which was within normal limits. Patient and relatives were explained the pros and cons and were willing to continue the pregnancy. The risk of DIC and the risk to another fetus like IUFD, and IUGR (Intrauterine growth restriction) were explained to the patient. Throughout the antenatal period, patient was monitored by doing weekly ultrasonography and Doppler as shown in Figure 1 A-D and DIC profile.

At 26 weeks of gestation patient complained of per vaginal spotting and expelled a product weighing around 80-90 gm as shown in Figure 1 E. On examination uterus was around 24 weeks gestation, fetal heard sounds were heard and minimal activity was present. On per vaginal examination external OS was 2 cm dilated, effacement was poor, cervical length was 1.5 cm, membranes were present. Ultrasonography was repeated which showed Single live intrauterine gestation of 24 weeks in cephalic presentation with baby weight of 550 grams, adequate liquor stage 1 fetal growth restriction. Patient was started on injectable antibiotics, uterine relaxants and nitric oxide donors for IUGR. High vaginal swab was sent. Patient was monitored for signs and symptoms of chorioamnionitis. Decision for emergency rescue cerclage was taken. Patient and relatives were explained all the risk and complications and detailed informed consent was taken. A rescue dose of corticosteroid was given. Rescue cervical cerclage was done under saddle anaesthesia with a round bodied non absorbable suture (polyethylene). Post-operatively complete bed rest with head low position and uterine relaxants, injectable antibiotics and nitric oxide donor was started. Thereafter ultrasonography and Doppler were repeated weekly. At 28 weeks of gestation, patient started complaining of pain in abdomen. On examination uterine contractions were present and was 3-4 cm dilated cervical effacement was 30-40%. Cervical encerclage stitch was removed and patient was allowed to progress spontaneously. She delivered a female child of 968 grams. Baby was initially kept in intensive neonatal care unit on oxygen support later shifted to preterm unit. Patient was discharged 2 months later. Baby weight on discharge was 1900 grams.

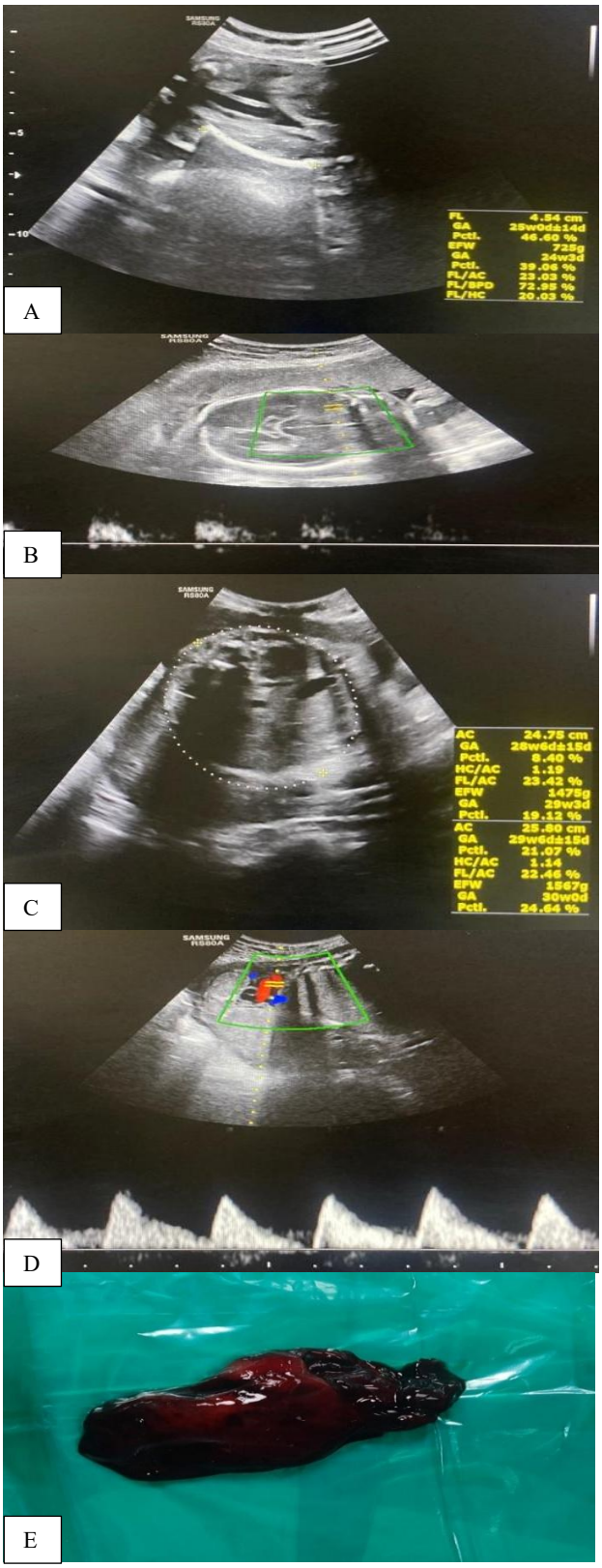

Figure 1 (A-E): A-D-ultrasonography images and E-showing expelled products.

DISCUSSION

In the case of suspected early co-twin demise in a monochorionic twin gestation, confirmation of the absence of vascular flow in the demised twin should be confirmed to exclude TRAP (Twin reverse arterial perfusion) sequence. Continued growth of the "demised" twin suggests TRAP sequence.

The optimal management of pregnancies in which one twin is likely to die or has died is unclear in pregnancies that have reached the stage of potential ex-utero survival. Delivery timing must be individualized based on the clinical scenario.

Dichorionic twins

In dichorionic twins, death of one twin is not, by itself, a strong indication for early delivery of the surviving twin. However, if a condition affecting both twins is present (e. g., preeclampsia, chorioamnionitis), then close surveillance and timely delivery of the surviving twin are indicated to prevent a second fetal loss and/or maternal morbidity. Timely delivery depends on the condition that is present (e. g., prompt delivery for chorioamnionitis versus consideration of expectant management of preeclampsia without severe features before 34 weeks of gestation and a normal surviving co-twin).

Monochorionic twins

Death of one twin of a monochorionic pair may have direct harmful effects on the survivor because of intertwin vascular anastomoses. The hemodynamic changes that occur upon death of one twin are immediate; therefore, prompt delivery after death to prevent damage to the survivor appears to be futile. Management should be based on the maternal condition and the condition of the surviving fetus. In the absence of a maternal indication or another fetal indication for prompt delivery, delivery before 34 weeks of gestation is not recommended and the practice is to deliver these pregnancies at 36+0 to 36+6 weeks.[3]

When one twin dies prior to the stage when ex-utero survival is not possible, it is advisable to discuss the option of pregnancy termination, although, as stated above, the risk of neurologic injury to the co-twin is not clear when the death occurs in the first trimester (the risk of co-twin death, however, can be predicted. In ongoing pregnancies, ultrasound and magnetic resonance imaging evaluation of the surviving co-twin can identify signs of brain injury, such as ventriculomegaly, white matter lesions, or intracranial hemorrhage, which develop over time and may be helpful in predicting prognosis if abnormal. However, the diagnostic performance of imaging studies to predict or exclude fetal brain injury, the best imaging modality to use, and the best time to perform the imaging study are unclear. In the absence of a maternal indication or another fetal indication for prompt delivery, the practice is to deliver these pregnancies at 36+0 to 36+6 weeks.

On the other hand, if fetal assessment after 26 weeks of gestation suggests impending death (rather than demise) of one twin of a monochorionic pair, prompt delivery of both twins rather than expectant management given the high risk of neurologic impairment in the surviving co-twin.[4]

Anti-D immune globulin prophylaxis is recommended for D-negative patients with a fetal demise.

Role of cervical encerclage in twin pregnancies: The best approach for achieving a delayed-interval delivery is unclear. The key principles are:

Appropriate selection of candidates, informed consent, exclusion of intraamniotic infection in undelivered fetus(es), drug-induced uterine relaxation, antibiotic prophylaxis, placement of a cerclage, administration of antenatal glucocorticoids.

Best candidates for delayed-interval delivery are patients with a multiple gestation at an early gestational age (<24 weeks) in which only the first (presenting) fetus spontaneously delivers vaginally due to preterm labor, cervical insufficiency, prelabor rupture of membranes, or intrauterine demise.[5]

Contraindications are-pregnancies ≥28 weeks is a relative contraindication since neonatal outcome is generally good, pregnancies associated with preeclampsia, placental abruption or intraamniotic infection of non-presenting fetus, monochorionicity, operative birth of first fetus relative contraindication

Antenatal glucocorticoids are advisable. The patient is kept in the hospital for a minimum of seven days as many unsuccessful attempts at delayed delivery will declare themselves within this seven-day period (e. g., occurrence of maternal infection, preterm prelabor rupture of membranes, preterm labor, or non-reassuring fetal status).[5]

In fetuses in whom urgent delivery for an abnormal fetal heart rate pattern would be considered, we perform electronic fetal heart rate monitoring while the patient is in the hospital. Abnormal findings (such as recurrent decelerations, persistent loss of previous heart rate variability, or tachycardia) should prompt assessment and/or intervention, such as ultrasound, delivery, or amniocentesis, and retesting for intraamniotic infection.

Outpatient management is considered after seven days. Ideal candidates are those with minimal uterine activity or bleeding, proven adherence to medical care, and minimal barriers to seeking appropriate care for questions or emergencies.[6]

Appropriate candidates for outpatient care are discharged home with instructions to limit physical activity to light

activities in the home (e. g., self-care) and to avoid coitus. They are also counseled to be aware of contractions, discharge, fever, or abdominal tenderness and to call if any of these symptoms occur.

Weekly visit and transvaginal ultrasound evaluation approximately every two weeks to evaluate the cervix and the integrity of the cerclage. If the plane of the cerclage is broken by prolapse of the membranes, especially in patients with some uterine activity, then readmission for closer surveillance would be indicated if the pregnancy is still remote from term. Removal of cerclage is indicated if preterm prelabor rupture of membranes or labor occurs.[7]

Important points in management protocols of single IUFD in twin pregnancies are-Counseling and support, individualized management protocols, management in a tertiary center with well-equipped NICU, information and confirmation of chorionicity by imaging techniques, detailed evaluation of fetal anomalies and close fetal surveillance, if preterm delivery is anticipated, steroid prophylaxis for lung maturity, conservative management until 34 weeks, earlier intervention in the presence of other obstetric or fetal indication, vaginal delivery whenever possible, post mortem examination of the stillborn and placenta for histological examination if possible, long-term follow-up of survivor co-twin with a pediatrician.

CONCLUSION

Twin pregnancies that are affected by a single fetal intrauterine death should be monitored in a higher-level of care facility. With adequate fetal and maternal monitoring facilities, proper care, and individualized therapy, difficulties can be minimized. These patients' outcomes depend on the gestational age and chronicity. To save a co-twin who is still alive, intensive fetal surveillance is essential. Monochorionic twins with 1 IUFD have poor prognosis compared with dichorionic twins, they are more likely to suffer from neurologic complications later in life.

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