

## Case Report

### **Umbilical cord twists causing intrauterine fetal demise of a monozygotic Co-Twin**

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#### **Abstract**

Monozygotic twin gestation is associated with adverse perinatal outcome. Umbilical cord related accidents are more common with monoamniotic twin gestations. Twisting of umbilical cord results into sudden death of a co- twin in multifetal gestation. Cord accidents occur suddenly and unexpectedly. A case of fetal demise of co-twin due to multiple twists at the fetal end of the umbilical cord in 34 weeks of monochorionic dizygotic twin gestation is reported. She underwent elective caesarean section with favorable outcome in surviving twin.

**Keywords:** Fetal demise, Monozygotic co – twin, twin pregnancy, twisting of umbilical cord

#### **1. Introduction**

Monozygotic twin gestation is associated with adverse perinatal outcome. Umbilical cord accidents (UCA) are more common with monoamniotic twin gestations.<sup>2</sup> Twisting of umbilical cord results into sudden death of a co- twin in multifetal gestation. Fetuses with long cord length and excessive movements are more likely to develop umbilical cord twists. It is very difficult to predict about the cord related accidents during antenatal period.<sup>3-5</sup> Management of twin gestation with intrauterine demise of one fetus pose great challenge to the Obstetrician. Prolong retention of dead fetus in the uterus has adverse effects on pregnant woman as well as the surviving co-twin.

#### **2. Case Report**

A 21 year old multigravida with 8½ months amenorrhoea presented with decreased foetal movements. She was a case of twin gestation with death of one foetus in utero, diagnosed in 7<sup>th</sup> month of pregnancy. She had undergone prophylactic cervical encirclage in private hospital in 7<sup>th</sup> months of gestation. She did not have any additional high risk factor in the history and general physical examination. Per abdomen examination revealed uterine height of 36 weeks. One foetus was in longitudinal lie with normal fetal heart rate. Other fetus could not be felt in the uterus. Her haemoglobin was 13 gms, blood group and Rh type was B positive. Her serum fibrinogen value was 624 mg/dl. Maternal platelet values were 2.21 lakh. Prothrombin time and INR values were 13.9 sec and 1.16 respectively. Obstetric USG showed one live baby of

34 weeks gestation in longitudinal lie and second dead baby of 27 wks gestation ,crumpled on right side at the fundus of the uterus. Estimated weight of live baby was 1796 gms and that of dead baby was 480 gms. Placenta was diamniotic monochorionic. Obstetric Doppler study revealed normal values in live baby .Careful maternal and fetal monitoring was done .Non stress test of live baby revealed reactive pattern. As the duration of pregnancy was more than 34 wks, decision of termination of pregnancy was taken .Patient and relatives were counseled regarding risk involved in further continuation of pregnancy .Patient was posted for elective LSCS. 1<sup>st</sup> twin was delivered by vertex presentation with birth weight of 2.34 kg, female child with 7,8,9, Apgar. Second of the twins was a macerated foetus weighing 630 gms. (Figure 1) Placenta was monochorionic diamniotic, weighed 870 gms, with marginal insertion of both cords. There was no gross morphological abnormality in the placenta. Umbilical cord length was 82 cms in dead fetus and 72 cms in surviving fetus. The umbilical cord contained normal vessels. There were multiple twists in the umbilical cord of dead fetus near fetal end. Twisted portion of the cord measured 6 cms and it looked like a thin string.(Figure 2) Post-operative period of the patient was uneventful. Surviving baby was examined carefully and was investigated for the evidence of any neurological and cardiac abnormalities. Baby did not have any problem during the period of observation till discharge from the hospital on 10th post-operative day. Baby had normal growth and development during six months of follow-up.

**Figure 1 -Showing normal healthy baby with its dead macerated co-twin**



**Figure 2 Showing multiple twists in the fetal end of umbilical cord causing constriction**



### 3. Discussion

Over 30 different types of umbilical cord accidents(UCA) are described in medical literature.<sup>1-3</sup> UCA occur throughout pregnancy from conception to delivery with predispositions in each trimester. Common types of UCA include Nuchal position of the cord, torsion, true knot, cord entanglement around fetal body parts, cord constriction, and prolapsed cord. Stillbirth is associated with torsion and usually the cause of death is identified by the pathologist.<sup>1-5</sup> Torsioned umbilical cords can be untwisted.<sup>6</sup> It is different from natural helixes which cannot be untwisted. These twists can cause umbilical blood flow obstruction ,if they exceed the ability of the cord to absorb the torque. Torsion is not a result of death but the cause of death.<sup>4</sup> It is the result of fetal stimulation creating a reflex response of 360 degree fetal rotation as a spin

movement imparting the twist.<sup>3</sup> A prospective study of UCA's estimated torsion to occur in 10% of deliveries depending on a definition of 1 twist/ 9cm of cord length or less. Umbilical cord torsion is associated with placental thrombosis, amniotic bands, and umbilical ring constriction and breech position.<sup>7</sup> A current study from China reported the occurrence of torsion to be 6.14% with a fetal death rate of 39.29%.<sup>8,9</sup> Constriction of the cord should not be confused with torsion. Constriction is the narrowing of the umbilical stump attachment and is usually a cause of early stillbirth.<sup>10</sup> Constriction may be caused by a variety of factors which eventually hamper the fetal blood flow. The gestational age in the present case was more than 34 weeks. She was posted for elective cesarean section after laboratory investigations and coagulation profile. Counselling of the patient and the relatives regarding management plan and likely outcome is important.

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