

## A ruptured velamentous vessel in monozygotic twins: Double risk of acute exsanguination

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### Objective

Monozygotic (MZ) twin pregnancies have an increased risk of several complications, including acute or chronic twin-twin transfusion syndrome (TTTS) and twin anemia-polycythemia sequence (TAPS). Both complications result from inter-twin fetofetal transfusion through the placental vascular anastomosis. Acute transfusion occurs in MZ twins when there is a sudden drop in pressure and/or heart rate in one of the fetuses. In addition, velamentous cord insertion and vasa previa occur more frequently in monozygotic twin pregnancies (12% and 2.5%). The rupture of a velamentous vessel may have serious consequences in monozygotic twinning.

### Methods

Case report.

### Results

An 18-year-old primipara with monozygotic diamniotic twins following spontaneous conception was admitted to our Hospital at 33.6s with a pre-term premature rupture of the membranes. Pregnancy follow-up had been uneventful except for the diagnosis of velamentous cord insertion in twin A. The woman was given a course of antenatal corticosteroids and was treated with atosiban and antibiotics. Both twins displayed vertex presentation. Labour was induced at 34+1 weeks' gestation with oxytocin. Amniotomy was completed and 60 minutes later a self-limited episode of vaginal bleeding was noticed, but suspicion of a ruptured velamentous vessel was not raised. Cardiotocography was normal for both fetuses. Forty-five minutes later a new episode of bleeding appeared with sustained bradycardia of both fetuses. An emergency caesarean delivery was performed. The first-born male infant (birth weight 2200g) had Apgar scores of 6, 7 and 9 at 1, 5 and 10 minutes respectively. The second-born male infant (birth weight 2100g) was extremely pale and hypotonic and had Apgar scores of 4, 5 and 5 at 1, 5 and 10 minutes respectively. He had evidence of hypovolemic shock at birth with hypotension. Haemoglobin concentration in twin A and twin B were 13.7g/dl and 11g/dl respectively. Reticulocyte counts were within the normal range in both twins. A Kleihauer-Betke test showed no evidence of fetomaternal haemorrhage. Twin B was treated immediately with volume expansion and, as soon as it was available, with a blood transfusion (pre-transfusion Hb: 8.7g/dl). He was diagnosed with renal cortical necrosis and transient renal insufficiency with complete recovery. Twin A had a velamentous cord insertion and a ruptured vessel was confirmed. Twin B had a normal cord insertion.

### Conclusion

-If acute haemorrhage occurs in a monozygotic twin due to a ruptured velamentous vessel, both fetuses may exsanguinate due to acute fetofetal transfusion through the placental vascular anastomosis. -One twin may transiently resuscitate its anaemic hypovolemic co-twin and, as a consequence, have a better prognosis than its sibling, as shown in this case. -Prompt intervention is crucial to avoid catastrophic results for both fetuses. -Sonographic suspicion of umbilical cord anomalies is of paramount importance in monozygotic twin gestation.

