

# Umbilical Cord Abnormalities

Purpose: To assist OB providers managing women with umbilical cord abnormalities in pregnancy.

## Single Umbilical Artery (SUA)

Definition: A variation of umbilical cord anatomy in which there is only one umbilical artery.

- Occurs in 1/200 singleton deliveries; more common in twins
- Most cases are isolated
- Associated with increased risk of additional congenital malformations (25-30%), IUGR (10-20%) and preterm delivery (15%)
- If additional malformations are present, increased risk of perinatal mortality

Recommendations:

1. Referral to MFM for detailed anatomy ultrasound
2. If isolated SUA:
  - No indication for genetic testing
  - No indication for fetal echocardiogram
  - Growth ultrasounds at 28 and 34 weeks
  - No indication for antenatal testing
  - Deliver at term for standard obstetric indications
3. If SUA with additional malformations:
  - Offer genetic testing – there is a 50% chance of aneuploidy with additional malformations
  - Fetal echocardiogram at 22-26 weeks
  - Growth ultrasounds at 28, 32 and 36 weeks
  - Twice weekly NSTs starting at 32 weeks
  - Deliver at 39 weeks, unless indicated earlier
  - Perform cesarean section for standard obstetric indications

## Umbilical Vein Varix

Definition: Focal dilation of the intraabdominal umbilical vein measuring >9 mm diameter or intraabdominal umbilical vein diameter that is 50% larger than intrahepatic umbilical vein

- Found in 1/1,000 pregnancies
- 2/3 of cases are diagnosed after 28 weeks gestation
- Most do not enlarge significantly during pregnancy
- Increased risk for additional malformations (20-30%), IUGR (5-10%), varix thrombosis (1%) and IUFD (5-15%)

Recommendations:

- Referral to MFM for detailed anatomy ultrasound
- Offer genetic testing if any additional abnormalities
- MFM ultrasound to evaluate for varix size and flow and fetal hydrops every 1-2 weeks
- Twice weekly NSTs starting at 32 weeks
- Deliver at 37 weeks
- Perform cesarean section for standard obstetric indications

### **Marginal Cord Insertion**

Definition: Umbilical cord insertion <2 cm from the placental edge

- Found in 2-10% of pregnancies
- More common in monochorionic twins
- Not associated with pregnancy complications

Recommendations:

- Routine prenatal care
- No indication for growth ultrasounds
- No indication for antenatal testing
- Deliver at term for standard obstetric indications

### **Velamentous Cord Insertion**

Definition: Umbilical cord insertion into the membrane rather than into the placenta

- Occurs in 1% of all pregnancies
- More common in multiple gestations and in the setting of placenta previa
- Increased risk for IUGR (15-20%), preterm delivery (10-15%), abruption (5-10%), vasa previa (3-5%) and need for manual removal of the placenta (15%)

Recommendations:

- Referral to MFM for detailed anatomy ultrasound and transvaginal ultrasound to assess for vasa previa
- Growth ultrasounds at 28, 32 and 36 weeks
- No indication for antenatal testing
- Deliver at term for standard obstetric indications
- Perform cesarean section for standard obstetric indications

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SHMG Maternal Fetal Medicine has developed these guidelines as a reference tool to assist referring physicians. Obstetric medical needs are complex and these guidelines may not apply in every case. Treating clinicians should exercise their own professional medical judgment with regard to the appropriate treatment and management of their patients. Treating clinicians are solely responsible for confirming the accuracy, timelines, completeness, appropriateness and helpfulness of this material in making all medical, diagnostic, or prescription decisions.

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