# 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
1. 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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