Third trimester bleeding and management

Differential Diagnosis of Third Trimester Bleeding

Placenta Previa

Placental Abruption

Uterine Rupture

Vasa Previa

Early labor

Coagulation Disorder

Vaginal Lesion/Injury

Cervical Lesion/Injury

Neoplasia

Bloody Show

Hemorrhoids

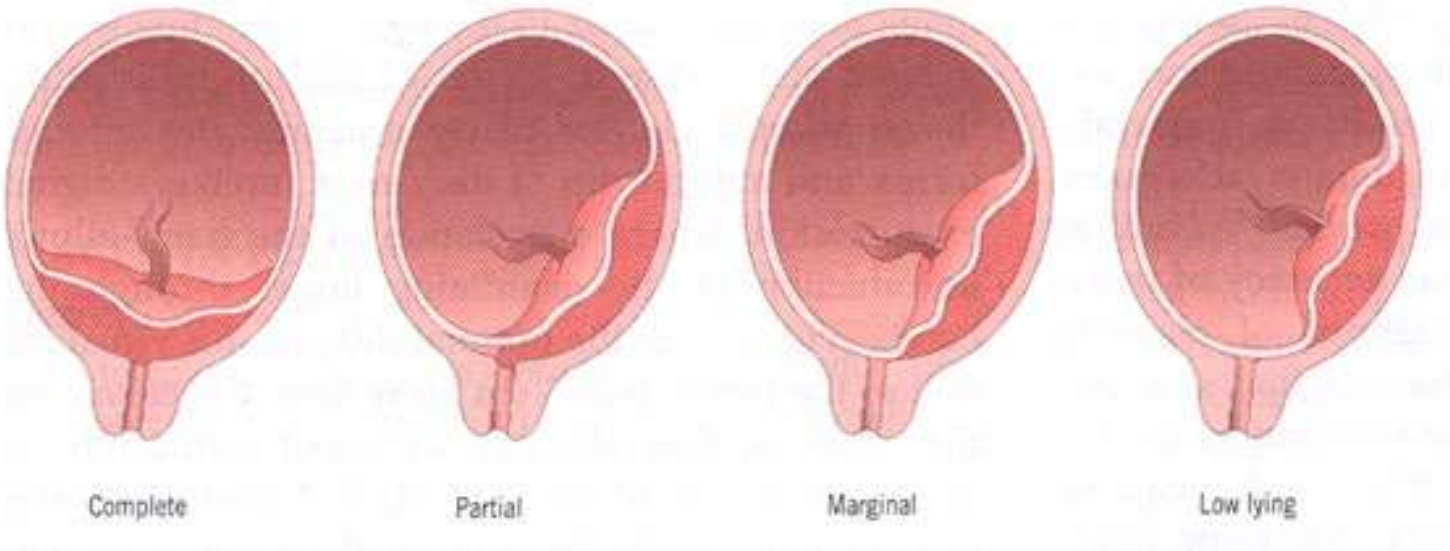
Epidemiology of Third Trimester Bleeding

- About 3.8 % of third trimester pregnancies
  - placenta previa - 22%; placental abruption - 31%
- Serious problem in pregnancy associated with maternal and fetal risks
- Require urgent initial assessment and, occasionaly, only partial diagnostic procedures

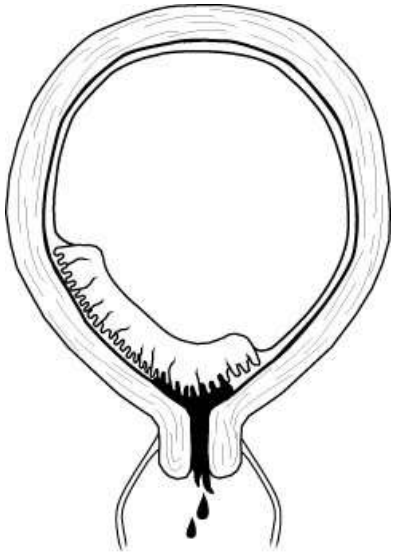
Oyelese Y, Smulian JC. Placenta Previa, Placenta Accreta, and Vasa Previa. *Obstet Gynecol.* 2006;107:927-941

Placenta Previa

- Defined as the abnormal implantation of the placenta in the lower uterine segment



Placenta Previa



- Bleeding results from small disruptions in the placental attachment during normal development and thinning of the lower uterine segment
- The degree of placenta previa cannot alone predict the clinical course accurately, nor can it serve as the sole guide for management decisions
- As a consequence the importance of presented classifications has diminished

Placenta previa - Epidemiology

- 4 percent of ultrasound studies performed at 20 to 24 weeks
- 0,4% at term
- The diagnosis of placenta previa is common before the third trimester, but up to 95% resolve before delivery
- Placental migration ?

Placenta Previa

- The length by which the placenta overlaps the internal os at 18 to 23 weeks is highly predictive for the persistence of placenta previa
- Overlap less than 1.5 cm at 18 to 23 weeks, placenta previa typically resolves
- Overlap 2.5 cm or greater at 20 to 23 weeks, persistence to term is likely

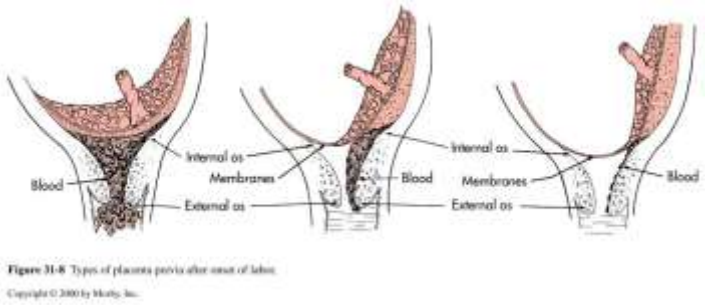


Figure 31-8 Types of placenta previa after onset of labor.

Becker RH, Vonk R, Mende BC, Ragosch V, Entezami M. The relevance of placental location at 20–23 gestational weeks for prediction of placenta previa at delivery: evaluation of 8650 cases. *Ultrasound Obstet Gynecol*. 2001;17:496–501.

Placenta Previa - Risk Factors

- Previous CS
- Previous uterine instrumentation
- Multiparity
- Advanced maternal age
- Smoking
- Multiple gestation
- Prior placenta previa
- Uterine fibroids

Placenta Previa - Risk Factors

- 4.8‰

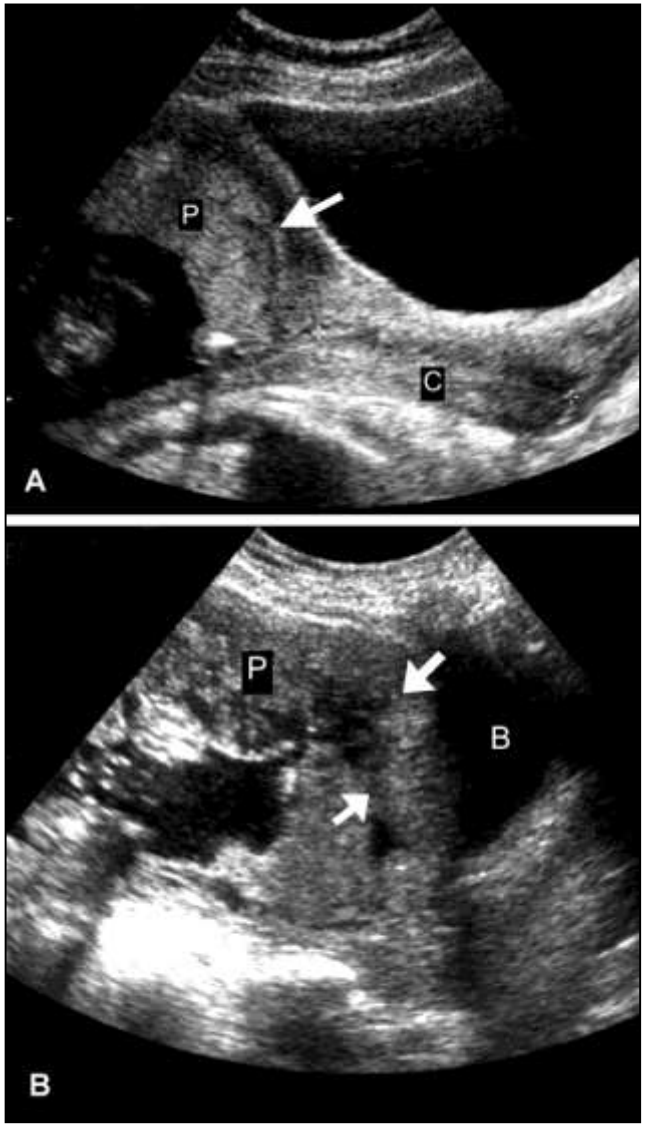
- Risk of recurrent placenta previa is 4% to 8%
- Risk of placenta previa increases with the number of prior cesarean sections, rising to 10% with four or more
- For woman older than 40 years risk is 2%

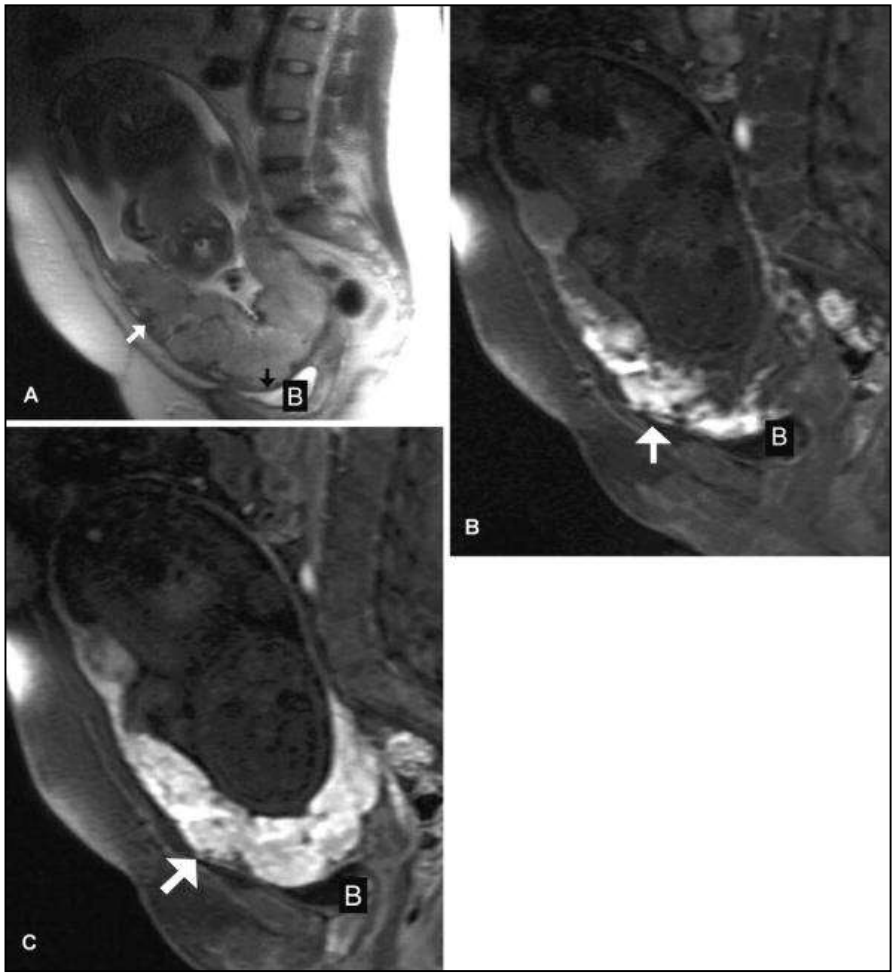
Placenta Previa - Clinical presentation

- Episode of bleeding has a peak incidence at about the 34th week of pregnancy
- One-third of cases become symptomatic before the 30th week and one-third after the 36th week
- Approximately 10% of cases, bleeding begins only with the onset of labor

Placenta Previa - Diagnosis

- Transabdominal sonography
- Transvaginal sonography
- Translabial sonography
- Magnetic resonance imaging





Warshak, Carri R. MD; Eskander, Ramez MD; Hull, Andrew D. MD; Scioscia, Angela L. MD; Mattrey, Robert F. MD; Benirschke, Kurt MD; Resnik, Robert MD

Placenta Previa - Morbidity and Mortality

- Placenta Previa is rarely a cause of life-threatening maternal hemorrhage unless instrumentation or digital exam is performed

- The most common morbidity with this problem is the necessity for operative delivery and the risks associated with surgical intervention

- Perinatal morbidity and mortality are primarily related to the complications of prematurity, because the hemorrhage is maternal.

Placenta Previa - Morbidity and Mortality

- Reduction in both maternal and perinatal mortality rates over the past 40 years
- Expectant management approach and the liberal use of cesarean section rather than vaginal delivery
- Maternal mortality rate has fallen from between 25% and 30% to less than 1%.
- Total perinatal mortality rate has fallen from between 60% and 70% to under 10%

Placenta Previa - Morbidity and Mortality

- Goal is to obtain the maximum fetal maturation possible while minimizing the risk to both the fetus and the mother

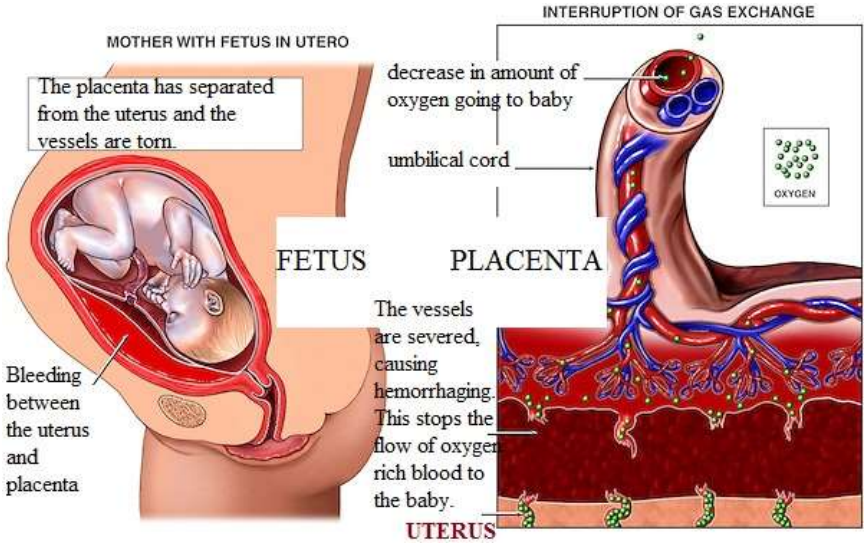
- In a significant proportion of cases delivery may be safely delayed to a more advanced stage of maturity

Placental Abruption

- Defined as the premature separation of the placental from the uterine wall
- Occurs in 0,9%
- Neonatal death incidence of 10 to 30%.

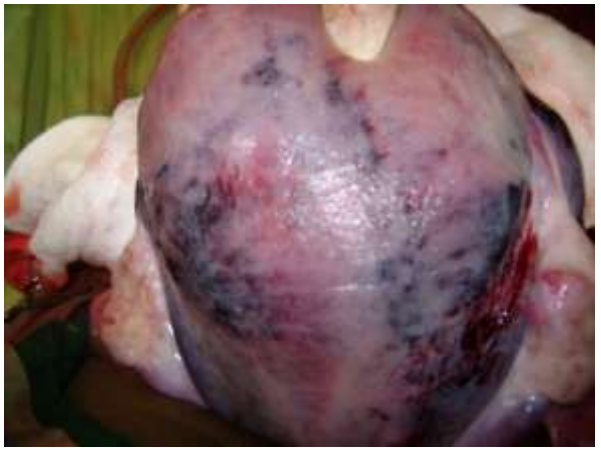
Placental Abruption - Patophysiology

- Source of the bleeding is small arterial vessels in the basal layer of the decidua
- Compression by the expanding hematoma leads to obliteration of the overlying inter-villous space
- Destruction of the placental tissue in the involved area - loss of surface area for exchange of respiratory gases and nutrients



Placental Abruption - Patophysiology

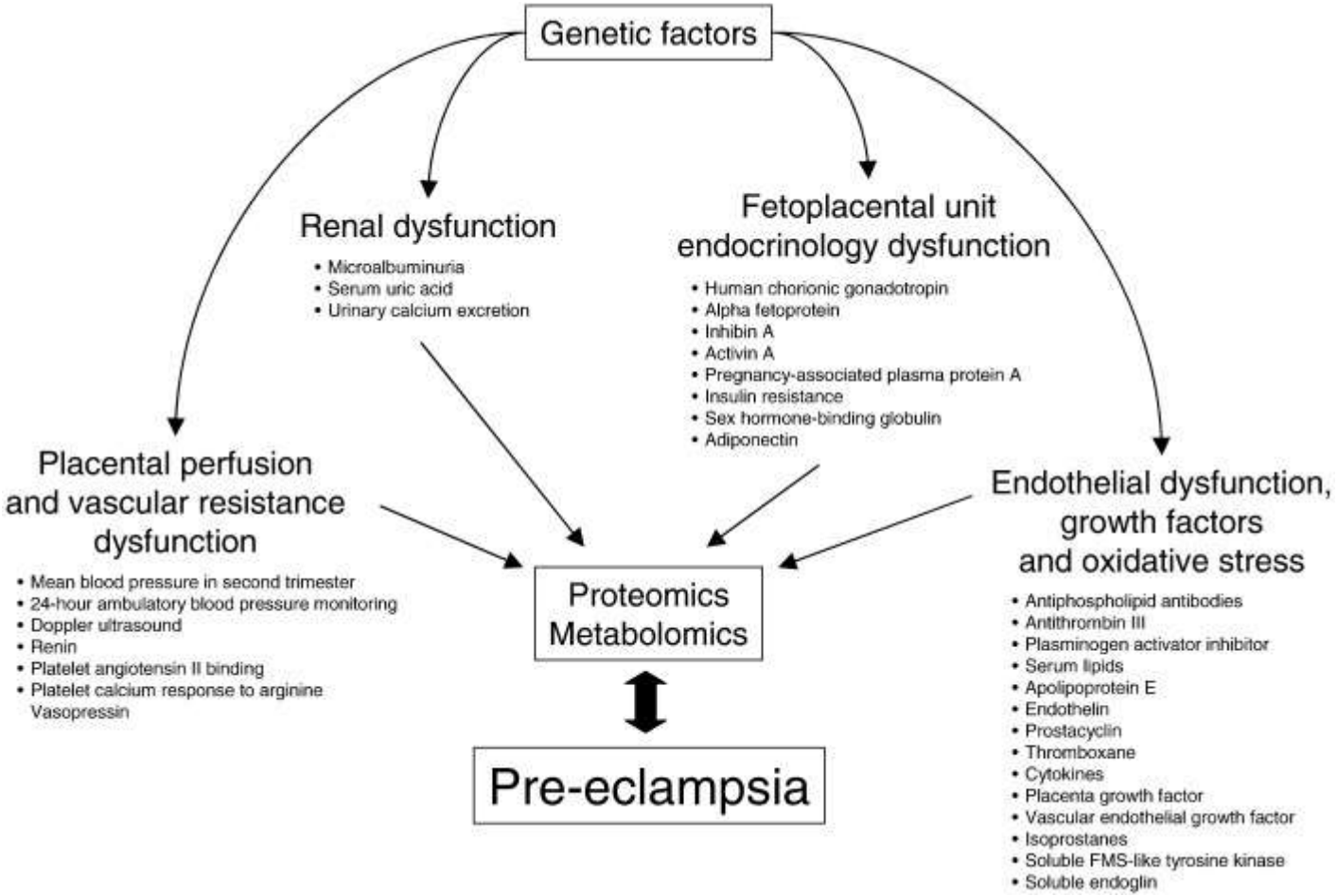
- Extravasation into the myometrium and through to the peritoneal surface - Couvelaire uterus
- Access to the vagina through the cervix - no reliable indication of the severity of the condition.
- Through the membranes into the amniotic sac - port wine discoloration



Placental Abruption - Risk Factors

- Hypertensive Disease of Pregnancy
- Smoking
- Substance abuse
- Trauma
- Short umbilical cord or uterine anomaly
- Polyhydramnios
- Previous abruption
- Unexplained elevation of MSAFP
- Maternal age and parity
- Inferior vena cava compression

Preeclampsia screening



Placental Abruption - Clinical presentation

- Vaginal bleeding, abdominal pain, uterine contractions, and uterine tenderness

- The amount of external bleeding may not accurately reflect the amount of blood loss.

Placental Abruption - Diagnosis

- Ultrssonography - exclude placenta previa
- Sensitivity of ultrasonography in diagnosis of placental abruption is approximately 25%
- Doppler flow changes
- Thrombomodulin - a marker of endothelial cell damage

- **Clinical diagnosis** !!

Uterine rupture

- Reported in 0.03-0.08% of all delivering women, but 0.3-1.7% among women with a history of a uterine scar
- 13% of all uterine ruptures occur outside the hospital
- Morbidity is hemorrhage and subsequent anemia, requiring transfusion
- Fetal morbidity is more common with extrusion and includes respiratory distress, hypoxia, acidemia, and neonatal death

Uterine Rupture Presentation

- Vaginal bleeding
- Pain
- Cessation of contractions
- Absence/ deterioration of fetal heart rate
- Loss of station
- Easily palpable fetal parts
- Profound maternal tachycardia and hypotension

Risk Factors for Uterine Rupture

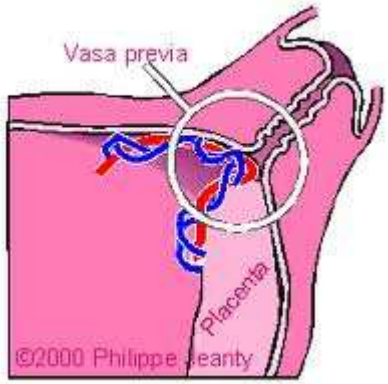
- Excessive uterine stimulation
- Previous C/S
- Trauma
- Prior rupture
- Previous uterine surgery
- Multiparity
- Non-vertex fetal presentation
- Shoulder dystocia
- Forceps delivery

Uterine Rupture Management

- In the case of sudden change in fetal baseline heart rate or the onset of severe decelerations, the provider should initiate intrauterine resuscitation with maternal position change, IVF hydration, discontinuation of oxitocin, O2 administration by re-breather mask

- If the measures are ineffective, emergent laparotomy is indicated

Vasa Previa



- Rarely reported condition in which the fetal vessels from the placenta cross the entrance to the birth canal
- Reported incidence varies, but most resources note occurrence in 1:2500 pregnancies
- Associated with a high fetal mortality rate (50-95%) which can be attributed to rapid fetal exsanguination resulting from the vessels tearing during labor

Risk Factors for Vasa Previa

- Bilobed and succenturiate placentas
- Velamentous insertion of the cord
- Low-lying placenta and/or placenta previa
- Multiple gestation
- Pregnancies resulting from in vitro fertilization
- Palpable vessel on vaginal exam
- Maternal history of uterine surgery

Vasa Previa - Management

- When vasa previa is detected prior to labor, the baby has a much greater chance of surviving

- It can be detected during pregnancy with use of transvaginal sonography, preferably in combination with color Doppler

- Some researchers have suggested screening color Doppler in the second trimesters of patients with risk factors present on routine 20 week ultrasound

Vasa Previa - Management

- When vasa previa is diagnosed prior to labor, elective caesarian delivery can save the baby's life

- The International Vasa Previa Foundation recommends hospitalization in the third trimester, delivery by 35 weeks, and immediate blood transfusion of the infant in the event of a rupture

Color Doppler of Vasa Previa

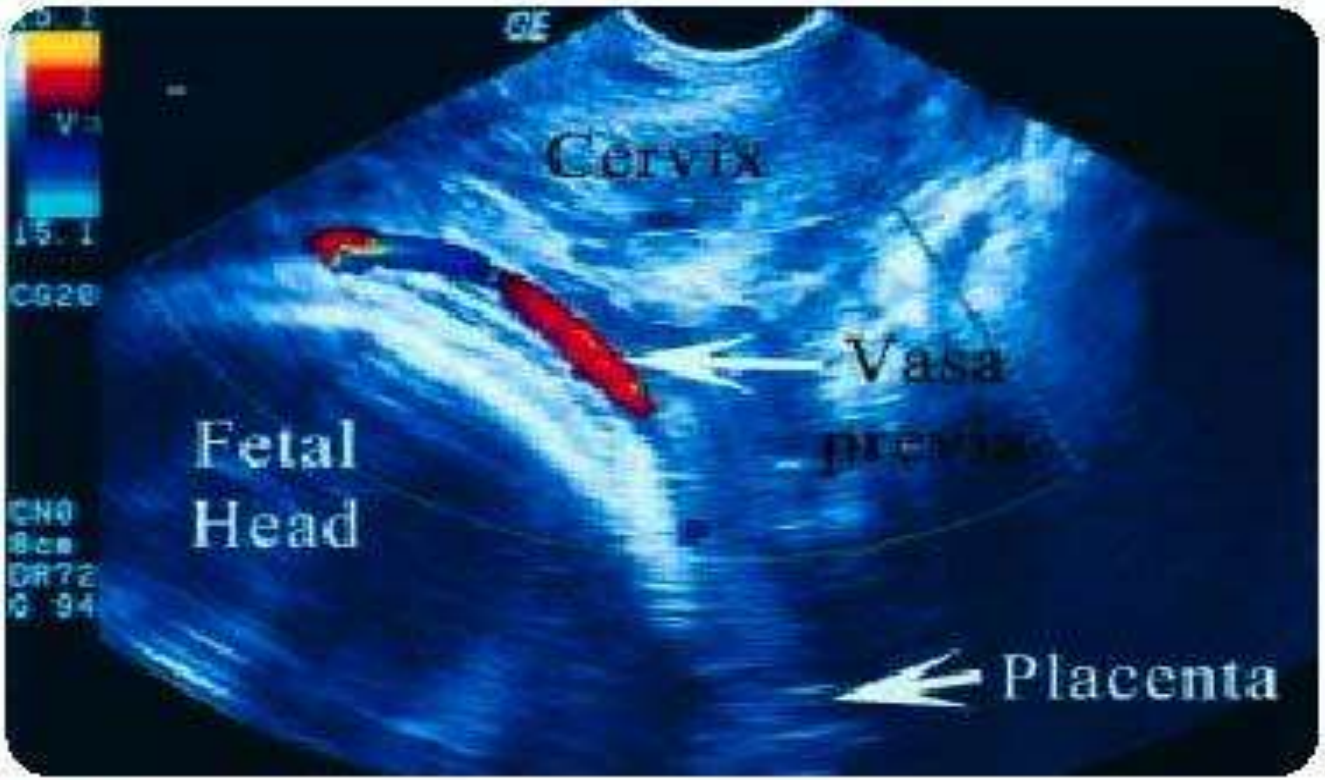


FIGURE 5. Color Doppler demonstrates flow through these structures, confirming that they are vessels.

Thank You