Placental Disorders
Tips for Diagnosis

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Diagnostic Challenge
Echogenic rim of placental tissue at edge of placenta

Circumvallate Placenta

• A double layer of amnion & chorion, as well as necrotic villi & fibrin, form a raised white ring around the surface of the placenta disk at a variable distance from the umbilical cord insertion site

Differential diagnosis
• Amniotic sheet (Synechia)
• Amniotic band

Interpretation Tips
“Look carefully at attachment points”
• Circumvallate placenta
  – Membranes attach only on placenta
**Interpretation Tips**

“Look carefully at attachment points”

- **Circumvallate placenta**
  - Membranes attach only on placenta

- **Synechia**
  - Membranes attach to uterine wall

**Amniotic Band**

- 2nd to amniotic membrane rupture
- This causes amniotic fibrous bands to float in the amniotic fluid and potentially wrap around parts of the baby or umbilical cord

**Succenturiate Lobe of the Placenta**

- One or more extra lobes of the placenta separated from the body of the placenta

**Identify Communicating Vessels**

- Spectrum of asymmetric disruption deformities & amputations
  - Absent digits, limbs, or portions of limbs
  - Facial clefts
  - Cranial & abdominal wall disruption
Identify Cord Insertion Site

- Succenturiate lobe + vasa previa
  - 60-80% fetal mortality if not diagnosed prenatally

Diagnostic Challenge
Velamentous Cord Insertion

Insertion of cord into membranes before entering the placenta

Velamentous Cord Insertion

The velamentous vessels are surrounded only by fetal membranes, with no Wharton’s jelly, thus they are prone to compression or disruption

Cord appears to insert directly on uterine wall

Velamentous Cord Insertion

• Suspect when marginal placental insertion
• Diagnosis made with Doppler color flow

Velamentous Cord Insertion

Remember
1. Find both CI sites in monochorionic twins
2. R/O vasa previa when placenta is low-lying
**Vasa Previa**

- Partial or complete obstruction of the internal cervical os by blood vessels
- 1 in 2500 births
**Vasa Previa**

- Low lying placentas;
- Succenturiate lobed placentas;
- Velamentous cord insertion;
- Multiple pregnancies;
- Preganacies resulting from IVF

**Placenta Previa**

- Marginal
  - Inferior edge of placenta within 2 cm of IO
  - Often resolves with advancing pregnancy

- Partial
  - Edge of placenta partially covers IO
  - Difficult to differentiate from marginal previa
  - Often resolves with advancing pregnancy

- Complete
  - Asymmetric complete previa
  - Small part of placenta crosses IO
  - May resolve with advancing pregnancy
  - If > 1.5 cm crosses IO then less likely to resolve

- Complete
  - Symmetric complete previa
  - Placenta centrally implanted on cervix
  - Will not resolve with advancing pregnancy
**Remember**

Use TVUS to R/O placenta previa in all patients with bleeding in 2nd & 3rd trimester.

- It is recognized that apparent placental position early in pregnancy may not correlate well with its location at the time of delivery.
  - "Trophotropism"
    - The ability or the desire of the placenta to seek a blood supply
    - Proliferation of placental villi in areas of better blood supply (corpus, fundus)
Consequence of Placenta Migration

- Regressing previa
- Succenturiate lobe
- Vasa previa
- Migration cord origin
- Velementous cord origin

Succenturiate lobe

- May be low-lying or cross internal os

Trophotropism

Reminder

- The placenta’s relationship to the IO should be assessed in every scan. Failure to see the inferior edge of the placenta should lead to TV scanning to Rule Out previa if not previously done in the 2nd trimester.
- A previa can be missed near term if the fetal head is low in the pelvis.
Placenta Accreta

- In patients with placenta previa, the risk of accreta is 10-25% with 1 previous CS and 50% with 2 or more previous CS.
- 5-10% of all placenta previas.
- 1/22,000 pregnancies in the absence of previa.

Placenta Previa

without invasion of the myometrium

Intact bladder
Uterine wall interface

Myometrium thickness

Placenta Accreta - Diagnostic Criteria

- Multiple hypoechoic placental vascular lacunae
  - Swiss cheese appearance

No decidua between villi & myometrium
**Placenta Accreta - Diagnostic Criteria**

- Loss of hypoechoic myometrial zone
- Thinning of subplacental hypoechoic zone < 1-2 mm
- Loss of bladder mucosal reflector
- Focal exophitic masses

**Placenta Accreta**

- Usually occur low and at site of prior c-section
- Use high resolution linear transducer for anterior placenta

**Placenta Accreta - Diagnostic Criteria**

- Presence of color “tongues” of blood flow to the myometrial lakes
Abruptio Placenta

- Acute hemorrhage occasionally difficult to distinguish from the adjacent placenta
Sonographic Features of Abruptio Placenta

Placental Abruption – False Positives

Subchorionic Hemorrhage

Subchorionic Hemorrhage

Diagnostic Challenge

Thank You