Abnormal Vaginal Bleeding

Jacqueline Koomson MS4, MS
Drexel University College of Medicine

Matthew Hartman, MD
Allegheny Health Network
Patient Presentation

37 yo G4P1031 presented with bloating, abdominal pressure and pain, and abnormal vaginal bleeding

Vital Signs:

- BP 152/97
- Temp 98.5
- HR 105
- RR 18
- BMI 41.7
What Test Should We Order?
What Test Should We Order?

β-hcG
Pertinent Labs

• β-hcG 14,556

• CBC
  • Hg 11.8
  • Hct 36.1
  • WBC 11.9
  • Plt 479

• BMP Normal

• UA neg
Differential Diagnosis

• Intrauterine Pregnancy with:
  • Subchorionic Hemorrhage
  • Severe Cervicitis
  • Threatened Abortion
  • Trauma

• Early Pregnancy Loss – Failed Intrauterine Pregnancy

• Ectopic Pregnancy

• Molar Pregnancy
What Imaging Should We Order?
## Variant 1:

**First trimester vaginal bleeding. Positive urine or serum pregnancy test.**

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Appropriateness Category</th>
<th>Relative Radiation Level</th>
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</thead>
<tbody>
<tr>
<td>US pelvis transvaginal</td>
<td>Usually Appropriate</td>
<td>0</td>
</tr>
<tr>
<td>US pelvis transabdominal</td>
<td>Usually Appropriate</td>
<td>0</td>
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<tr>
<td>US duplex Doppler uterus</td>
<td>May Be Appropriate</td>
<td>0</td>
</tr>
<tr>
<td>MRI pelvis without IV contrast</td>
<td>May Be Appropriate</td>
<td>0</td>
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<tr>
<td>MRI pelvis without and with IV contrast</td>
<td>Usually Not Appropriate</td>
<td>0</td>
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<tr>
<td>CT pelvis without IV contrast</td>
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Ultrasound Findings
Ultrasound Findings Labeled

Separate gestational sacs

Lambda sign: thick intertwin membrane

Two fetuses

Hypoechoic crescentic collection indicative of subchorionic hemorrhage

Hypoechoic crescentic collection indicative of subchorionic hemorrhage

Twin A

Twin B
Diagnosis?
Subchorionic Hemorrhage of Dizygotic Twin Pregnancy
Subchorionic Hemorrhage

Background

- Vaginal bleeding is a frequent complication of pregnancy during the first trimester with an incidence of 16%–25%
- Intrauterine hemorrhages are commonly observed features on ultrasound examinations, especially among patients with clinically evident bleeding in early pregnancy, and the incidence has been reported to be 4%–22%
- Subchorionic hemorrhage occurs when blood collects between the uterine wall and the chorionic membrane in pregnancy
- It is a frequent cause of first and second trimester bleeding
- Subchorionic hemorrhages usually appear as hypoechoic or anechoic crescent-shaped areas on ultrasonography
- Although the exact etiology is uncertain, they are believed to result from partial detachment of the chorionic membranes from the uterine wall
- Uterine malformations, history of recurrent pregnancy loss, and infections are predisposing factors

Quantification

- In early pregnancy, a subchorionic hemorrhage is considered small if it is <20% of the size of the sac, medium-sized if it is 20-50% and large if it is >50-66% of the size of the gestational sac
- Large hematomas by size and volume (>50 mL) worsen the patient's prognosis

Outcome

- Fetal outcome is dependent on the size of the hematoma, maternal age, and gestational age
- In most cases, they gradually decreases in size on follow-up and can resolve over 1-2 weeks
Dizygotic Twin Gestation

- Conceiving spontaneous dizygotic twins is complex and influenced by both environmental factors and genetic disposition
- Twins are relatively common and occur on average 13 times per 1000 maternities
- Twinning frequency varies over time and geographic location
- Dizygotic twinning occurs when two separate oocytes are released during the same menstrual cycle and fertilized by two sperm
- Dizygotic twins have the same genetic relationship as non-twin brothers and sisters and share about 50% of their genes
- Mothers of dizygotic twins report more female family members with dizygotic twins than mothers of monozygotic twins.
- Major maternal factors such as genetic history, advanced age and increased parity are known to increase the risk of dizygotic twins
- The increased use of fertility treatments such as in vitro fertilization, intracytoplasmic sperm injection, intra-uterine insemination and ovulation induction is commonly cited as the main cause of the increase in twin births in the past few decades

Imaging
- Ultrasound is crucial in the monitoring pregnancy and planning for delivery
- Ultrasound is used to determine the number of fetuses, their chorionicity and amnionicity
- It is easiest to determine chorionicity and amnionicity in the first trimester
- Dizygotic twins: dichorionic, separate gestational sacs, lambda sign, separate placental masses.
References

- ACR Appropriateness Criteria https://acsearch.acr.org/list