EM CASE OF THE WEEK.

BROWARD HEALTH MEDICAL CENTER
DEPARTMENT OF EMERGENCY MEDICINE

BROWARD HEALTH
Care Warriors

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First Trimester Bleeding

A 40-year-old G2P0A2 female with no significant past medical history presents to the emergency department with light vaginal bleeding (less than 1 pad per day), as well as moderate cramping pelvic pain. Both the pain and the bleeding began this morning. She states that her last menstrual period was 5 weeks ago and a home urine pregnancy test was positive 4 days ago. Her only medication is a pre-natal vitamin. Vital signs are HR 100, BP 100/70, RR 15, and Temp 99.3°F. Physical exam is remarkable for mild suprapubic tendernes. There is no rebound, guarding, or rigidity. After appropriate testing is completed, the patient is asked to return in 48 hours for a repeat b-hCG. Which of the following results would most likely indicate a singleton normal intrauterine pregnancy?

A. b-hCG of 1500

B. b-hCG of 1000

C. b-hCG of 5000

D. A doubling of the b-hCG

E. A tripling of the b-hCG

Figure A. Passed tissue examined for chorionic villi (AAFP 2009)

Passed tissue can be recovered and examined for chorionic villi (Fig A). If present, this can be used to confirm intrauterine pregnancy demise. The only exception is in the case of a rare heterotopic pregnancy.[1]

This a pathologic examination with a positive test for the chorionic villi being considered a spontaneous abortion, of which the most common causes are chromosomal abnormalities.[1]

EM Case of the Week is a weekly "pop quiz" for ED staff.

The goal is to educate all ED personnel by sharing common pearls and pitfalls involving the care of ED patients. We intend on providing better patient care through better education for our nurses and staff.

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Answer and Discussion

The correct answer is D, a doubling of the b-hCG. A doubling of the b-hCG in 48 hours would be consistent with a normal intrauterine pregnancy. Values outside of that would raise flags for some pathology. Once the b-hCG rises above 1500, transvaginal ultrasound can be used reliably to rule in or out a viable pregnancy if performed by a skilled ultrasonographer.[1]

All choices of A, B, and C would be inappropriate because we are not given enough information in the question as to what her baseline b-hCG is at the time of examination in the ER. Choice E would be more consistent with either multiple gestations or trophoblastic disease.

First trimester bleeding is a relatively common occurrence during pregnancy, occurring around 20-25% of the time. In approximately 50% of these cases, the women will have a spontaneous abortion.[2] However, in the setting of bleeding and moderate pelvic pain with a positive pregnancy test, it is important to follow these women to be able to rule out an ectopic pregnancy.

It is also important to quickly obtain a cross and screen for blood type and to secure intravenous access in case the vaginal bleeding is heavy and urgent resuscitation is required.

Other possibilities to consider during the evaluation of vaginal bleeding in the setting of a positive pregnancy test include but are not limited to: vaginal lacerations/trauma, vaginal neoplasms, cervical neoplasms, sexually transmitted infections, subchorionic hemorrhage, and gestational trophoblastic disease. Pelvic pain in the setting of a positive pregnancy test may be physiologic, but in the absence of vaginal bleeding it would also be prudent and appropriate to consider a broader differential including other lower abdominal/pelvic etiology causes such as appendicitis, urinary tract infections or stones.[1]

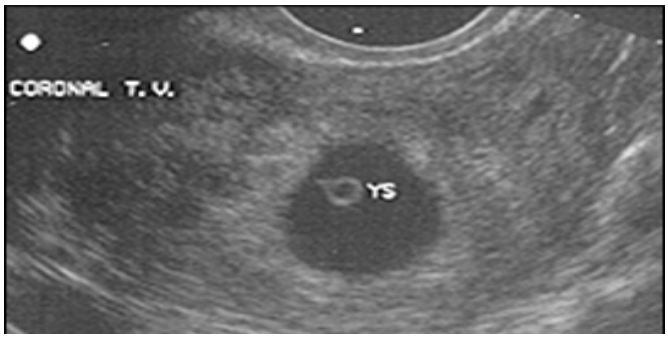

Figure B. Yolk sac within a gestational sac. (AAFP 2009)

Management and Follow up

Always ensure that the patient is hemodynamically stable and that an appropriate obstetric and gynecologic history is obtained from the patient.[1,2]

If pregnancy is less than six weeks by ovulation, obtain b-hCG before transvaginal ultrasound to determine the potential sensitivity of that imaging. Having a b-hCG less than 1500 would result in loss of sensitivity of transvaginal ultrasound. Above 1500 and in the hands of a skilled ultrasonographer, an ectopic pregnancy can be ruled out by identifying an intrauterine pregnancy.[1,3]

If the patient continues with vaginal bleeding and the b-hCG does not rise, then consider a pelvic exam to evaluate the cervical OS. If open, then the abortion is incomplete and should be allowed to pass; tocolytics should not be given (Table 1). A closed OS with continued vaginal bleeding should be followed by the patient's primary gynecologist.[1,2,3]

The patient should follow up with weekly b-hCG until the value reaches zero in order to rule out trophoblastic disease. Multiple first trimester losses should prompt workup for potential underlying chromosomal abnormalities in the partners or female reproductive anatomical anomalies.[1,3]

For a list of educational lectures, grand rounds, workshops, and didactics please visit ***BrowardER.com*** and **click** on the ***"Conference"*** **link**.

All are welcome to attend!

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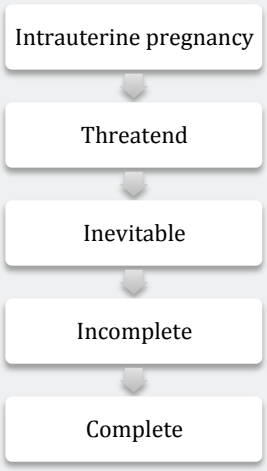
Stages of Spontaneous Abortion



Diagnosis	Passage of Contents	Cervical OS	Ultrasound
Intrauterine Pregnancy	None	Closed	Live baby
Threatened	None	Closed	Live baby
Inevitable	None	Open	Dead/Live Baby
Incomplete	Yes	Open	Retained parts
Complete	Yes	Closed	No baby
Missed	None	Closed	Dead baby

Table 1. Both charts generated based on information from AAFP and up-to-date article on first trimester bleeding[1,2]

Take Home Points

- There are many causes of vaginal bleeding in the first trimester - during evaluation it is crucial to get a strong obstetrical and gynecologic history in order to determine patient disposition.
- In acute cases of first trimester bleeding, ensure that the patient is hemodynamically stable. Clarify the amount of bleeding and when it started.
- Management of first trimester vaginal bleeding is determined by the state of the pregnancy - if early, obtain a b-hCG before obtaining a transvaginal ultrasound to determine the efficacy of the ultrasound.
- If the pregnancy is going to terminate, there is no evidence that intervention will prevent loss. 50% of women who experience first trimester bleeding will have a miscarriage. Patient centered reassurance in the emergency setting is vital.

ABOUT THE AUTHOR

This month's case was written by Andrew Quinn. Andrew is a 4th year medical student from HWCOM. He did his emergency medicine rotation at BHMC in November 2016. Andrew plans on pursuing a career in Obstetrics and Gynecology after graduation.

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