

## Obstetric Emergencies: Review Questions

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### QUESTIONS

Choose the single best answer for each question.

#### Questions 1 and 2 refer to the following case.

A 26-year-old woman presents to the emergency department (ED) complaining of vaginal bleeding and abdominal pain. She states that the pain began today and has been getting progressively worse. Her last menstrual period was 7 weeks ago. On physical examination, she appears uncomfortable. She is afebrile, and blood pressure is 108/76 mm Hg, heart rate is 58 bpm, and respiratory rate is 18 breaths/min. Abdomen is soft with mild diffuse tenderness. Pelvic examination reveals a small amount of blood oozing from the cervical os. The uterus is slightly enlarged but nontender with no adnexal masses.

**1. Which of the following is the most appropriate initial step in the management of this patient?**

- (A) Administer RhoGam 50  $\mu$ g
- (B) Obtain a urine  $\beta$ -human chorionic gonadotropin ( $\beta$ -hCG) measurement
- (C) Order a rapid hematocrit
- (D) Perform a type and screen
- (E) Perform a urinalysis

**2. The emergency medicine physician performs a bedside endovaginal ultrasound on this patient (Figure). Based on these results, what is the most appropriate next step?**

- (A) Administer methotrexate 50 mg/m<sup>2</sup>
- (B) Administer RhoGam 300  $\mu$ g
- (C) Dilation and curettage
- (D) Laparoscopic surgery
- (E) Order a formal pelvic ultrasound

**3. A 29-year-old gravida 6, para 5 woman at 36 weeks of gestation arrives in the ED via ambulance and precipitously delivers a male child. The child coughs and has a strong cry. He is very active. Acrocyanosis is noted. Heart rate is 98 bpm and breathing is strong. What is this child's Apgar score?**

- (A) 5
- (B) 6
- (C) 7
- (D) 8
- (E) 9



**Figure.** Endovaginal ultrasound performed in the patient described in questions 1 and 2.

**4. A 24-year-old pregnant woman at 29 weeks of gestation presents to the ED after being assaulted by her husband. She is in full cervical spine precautions. She complains of abdominal pain that began immediately after she was hit in the abdomen. On physical examination, the patient is tearful and in obvious discomfort. The patient is afebrile, and blood pressure is 80/50 mm Hg, heart rate is 100 bpm, and respiratory rate is 20 breaths/min. She has multiple occipital hematomas and facial ecchymosis. Pupils are equal and reactive bilaterally. The neck is nontender without bony deformity. Lungs are clear to auscultation. Heart rhythm is regular. The abdomen is gravid, and the uterine fundus measures 29 cm. Fetal heart tones are 160 bpm. There is no vaginal bleeding or discharge. What is the initial step in the management of this patient?**

- (A) Begin cardiotocographic monitoring
- (B) Establish central venous access
- (C) Intubate the patient
- (D) Perform a pelvic speculum examination
- (E) Reposition the patient

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**Table.** Five Criteria of the APGAR Score

	Sign	Score of 0	Score of 1	Score of 2
Appearance	Skin color	Blue all over	Blue extremities, pink body (acrocyanosis)	No cyanosis, pink body and extremities
Pulse	Heart rate	Absent	< 100	> 100
Grimace	Reflex irritability	No response	Grimace/feeble cry	Sneeze/cough/pulls away
Activity	Muscle tone	None	Some flexion	Active movement
Respiration	Breathing	Absent	Weak or irregular	Strong

**5. Which of the following conditions is associated with blunt trauma in a pregnant woman?**

- (A) Abruptio placentae
- (B) Fetal malformation
- (C) Placenta accreta
- (D) Placenta previa
- (E) Premature rupture of membranes

**ANSWERS AND EXPLANATIONS**

- 1. (B) Obtain a urine  $\beta$ -hCG measurement.** When a woman of childbearing age presents to the ED with abdominal pain, vaginal bleeding, dizziness, or syncope, the diagnosis of ectopic pregnancy must be entertained. It is important to confirm the presence or absence of a pregnancy by ordering a  $\beta$ -hCG. A urine point-of-care pregnancy test is the quickest way to obtain  $\beta$ -hCG results. The patient's abdomen is mildly tender, which could be a sign of blood irritating the peritoneal cavity. Therefore, it is also important to check the patient's hemoglobin/hematocrit levels if a ruptured ectopic pregnancy is suspected, but this is not necessarily the initial step in this case. The patient's treatment path depends on whether she is pregnant. Although not the first step, urinalysis is important to determine if there is another cause of lower abdominal pain (eg, urinary tract infection). RhoGam should be given to Rh-negative women with bleeding to prevent isoimmunization. However, it does not need to be given immediately upon confirmation of pregnancy. The dose of RhoGam differs depending on gestational age (< 12 wk, 50  $\mu$ g; > 12 wk, 300  $\mu$ g).<sup>1,2</sup>
- 2. (E) Order a formal pelvic ultrasound.** To prevent a delayed diagnosis of ectopic pregnancy, pregnant women with abdominal pain or vaginal bleeding require evaluation by transvaginal ultrasonography. If a bedside endovaginal ultrasound is performed in the ED and is indeterminate (as in this case), demonstrating no definitive intrauterine pregnancy and

the presence of free fluid in the pelvis, then a formal ultrasound is warranted. If an ectopic pregnancy is identified or if no definitive intrauterine pregnancy is found on formal ultrasound, an obstetric/gynecologic consultation is required to evaluate for a ruptured ectopic pregnancy. Ectopic pregnancies can be treated surgically or medically with methotrexate, depending on the size of the ectopic pregnancy. Dilation and curettage may be considered if the patient is thought to be aborting and continues to bleed, although the ultrasound does not demonstrate products of conception (Figure). If the patient is Rh-negative, RhoGam should be administered. The dose administered could be the microdose given based on the date of the woman's last menstrual period/gestational age of the fetus.<sup>2-4</sup>

- 3. (D) 8.** The Apgar test scores appearance, pulse, grimace, activity, and respiration and is generally done at 1 and 5 minutes after birth but may be repeated if the child continues to score low (**Table**). This child's score is as follows: Appearance, 1; Pulse, 1; Grimace, 2; Activity, 2; Respiration, 2 (APGAR score = 8). A score of 3 or less is generally regarded as critically low, 4 to 6 is fairly low, and 7 to 10 is generally normal. Contrary to common belief, the Apgar score is not used to decide if a neonate requires resuscitation. Decisions about resuscitation are based on emergency assessment of airway, breathing, and circulation.<sup>5,6</sup>
- 4. (E) Reposition the patient.** Gravid women develop supine hypotension as the fetus grows. The uterus presses on the great vessels and limits the return of blood to the heart. It is imperative that women late in their second trimester and throughout their third trimester be positioned in such a way that the uterus does not have a detrimental effect on venous return. Placing the woman in the left lateral decubitus position or manually displacing the uterus

to the left should be the first step in this patient's management provided that airway and breathing are optimized. Elevating the patient's right hip 10 to 15 cm or manually displacing the uterus relieves aortocaval compression. Intravenous access is important but a central line is not mandatory. This patient will need a pelvic examination at some point but not during the primary examination. Cardiographic monitoring is also indicated but does not need to be performed during the initial evaluation.<sup>7</sup>

**5. (A) Abruptio placentae.** Abruptio placentae, defined as a premature separation of the placenta from the uterine wall, is commonly seen with blunt abdominal trauma and can cause fetal distress. It occurs in 1% to 3% of pregnant women with minor trauma and in 40% to 50% with major life-threatening trauma.<sup>8,9</sup> Abruptio may present with vaginal bleeding, abdominal pain and tenderness, uterine contractions, or fetal distress; however, it may be occult with no vaginal bleeding in up to 20% of cases. Abruptio placentae may be missed on ultrasound examination. The gold standard for evaluation of placental abruption is cardiographic monitoring to detect uterine irritability and fetal distress. A cesarean section may be necessary to save the fetus in severe cases of placental abruption. Fetal malformations are not

linked to trauma specifically. However, radiation exposure in early pregnancy may lead to fetal malformation. Placenta accreta, an obstetric complication involving an abnormal superficial attachment of the placenta to the myometrium, and placenta previa, an implantation of the placenta over the lower part of the uterus covering all of the internal cervical os, are not linked to trauma. Although premature labor may occur as a consequence of abdominal trauma, premature rupture of membranes is not specifically linked to trauma.<sup>8,9</sup>

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