Block

FOUR

Questions

Setting 4: Emergency Department

Generally, patients encountered here are seeking urgent care; most are not known to you. A full range of social services is available, including rape crisis intervention, family support, child protective services, domestic violence support, psychiatric services, and security assistance backed up by local police. Complete laboratory and radiology services are available.

177. A 27-year-old woman presents to the ED with complaints of heavy vaginal bleeding and painful abdominal cramping that started this morning. She reports that she stopped taking birth control pills approximately 3 months ago in an effort to conceive and that she had some light spotting a month later but no normal menstrual period since then. Her blood type is O positive, and her hematocrit is 39.2. A urine pregnancy test in the ED is positive. On physical exam, you note mild lower abdominal tenderness in the midline, but an otherwise benign abdominal exam. On speculum exam, you note a large amount of bright red blood in the vaginal vault and an open cervical os containing large blood clots. Endovaginal US (Figure 177) confirms the presence of a gestational sac in the uterus consistent with a 6-week gestation, but no yolk sac is visible. What is the correct diagnosis and management of this patient?

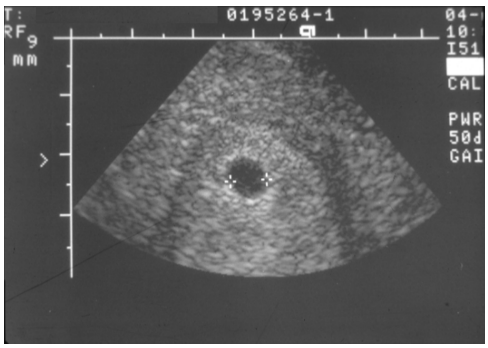

Figure 177 • Image provided by Departments of Radiology and Obstetrics & Gynecology, University of California, San Francisco.

A. Ectopic pregnancy—emergent surgery
B. Threatened abortion—D&C
C. Incomplete abortion—expectant management
D. Inevitable abortion—D&C
E. Complete abortion—expectant management

178. A 20-year-old G_1P_1 woman presents to the ED complaining of nausea, vomiting, and lower abdominal pain for the past 2 days. She reports intermittent condom usage with her partner of 3 months. Her vital signs are within normal limits, with the exception of a temperature of 100.2°F. On exam, you note abdominal, adnexal, and cervical motion tenderness, but no peritoneal signs. Mucopurulent discharge is apparent at the cervical os. A urine pregnancy test is negative, and the patient's WBC count is 13,700/mm^3. A wet mount shows numerous leukocytes. Which of the following is an absolute indication for inpatient treatment of PID?

A. Age greater than 18
B. Age less than 40
C. Severe nausea and vomiting
D. Adnexal tenderness
E. Penicillin allergy

179. A 28-year-old G_3P_0 woman is brought to the ED shortly after passing out. She is conscious on arrival, but appears to be in acute distress and severe pain. She reports vaginal bleeding and worsening left lower abdominal pain that became sharp and severe just prior to her loss of consciousness. She had a positive urine pregnancy test 4 weeks ago and is certain that her LMP was 8 weeks ago. Past medical history is significant for PID that was treated 5 years ago. Her vital signs are BP 84/40, pulse 118, respiration 26, and temperature 97.2°F. Urine pregnancy test is positive. The patient has a normal WBC count and a hematocrit of 32.3. On physical exam, she has diffuse lower abdominal pain and exhibits guarding and rebound. Pelvic exam reveals cervical motion tenderness and significant tenderness to palpation in the left adnexal region. Transvaginal US (Figure 179) shows a large amount of free fluid in the cul-de-sac, but no masses and no intrauterine pregnancy. What is the most appropriate next step in managing this patient?

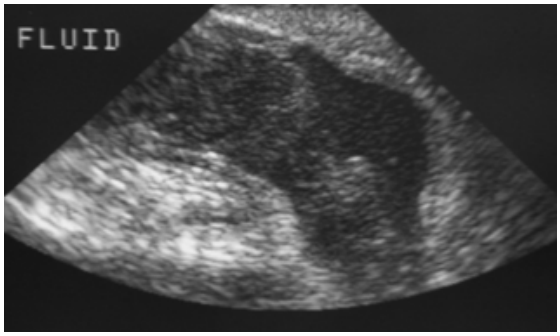

Figure 179 • Image provided by Departments of Radiology and Obstetrics & Gynecology, University of California, San Francisco.

A. Uterine curettage to definitively exclude ectopic pregnancy
B. Perform a culdocentesis
C. Obtain a quantitative β-hCG level to determine whether medical or surgical treatment is indicated
D. Administer methotrexate and follow serial quantitative β-hCG levels for appropriate decline
E. Stabilize the patient and take her emergently to the operating room

180. A 20-year-old G_0 woman presents to the ED in tears. She reports being sexually assaulted by three men unknown to her while attending a party this evening. You obtain a history from her, which is difficult because she is visibly shaken and upset. She doesn't believe any of the assailants used a condom and is unsure whether they ejaculated. There was no oral or anal penetration. On speculum exam, you obtain swabs from the vagina for evidence and for microscopic exam. You do not see any evidence of spermatozoa, trichomonads, or bacterial vaginosis. Which of the following steps would be appropriate management of this patient?

A. Start oral contraceptive pills immediately
B. Azithromycin 1 g PO and ceftriaxone 250 mg IM × 1
C. Do not contact police if the patient does not want to press charges
D. Reassure her that she has no risk of pregnancy
E. Reassure her that she has minimal risk of contracting HIV if there was no ejaculation

176. **C.** Adnexal torsion is the twisting of the ovary or adnexa around the ovarian pedicle, resulting in vascular obstruction. Although uncommon, it is an emergency and requires operative intervention. Patients occasionally report prior occurrences of similar pain as the offending cyst or neoplasm enlarges and intermittently undergoes torsion. It can be associated with a mild fever, normal WBC count, nausea, and vomiting. Diagnosis can be confirmed by US, which typically shows an enlarged ovary that is uniformly echogenic with decreased Doppler flow.

A. Although this patient has pain localizing to the RLQ, acute appendicitis generally presents with anorexia, fever, leukocytosis, and, not uncommonly, an acute abdomen. With an identifiable adnexal mass, the etiology of the pain is unlikely to be due to other causes.

B. The patient has a negative pregnancy test.

D. Salpingitis typically presents with fever, elevated WBC count, vaginal discharge, and cervical motion tenderness.

E. Although certainly more common than adnexal torsion, ruptured ovarian cysts typically produce pain that is bilateral and begins at or after ovulation. If this case truly involved rupture of an ovarian cyst, the patient would usually experience more diffuse pelvic pain. Also, the patient might have presented with a decreased hematocrit if bleeding were severe. US would show free fluid in the cul-de-sac and is less likely than torsion to reveal the presence of an enlarged adnexal mass.

177. **D.** In an inevitable abortion, the patient will experience vaginal bleeding and a dilated cervix in a pregnancy less than 20 weeks GA but no expulsion of POCs. Although the use of prostaglandins to promote the expulsion of the POCs is an option, D&C is preferential in the setting of heavy bleeding. Expectant management is also an option for patients not anxious about bleeding and cramping at home. Of note, if this patient were Rh D (−), RhoGAM administration would be necessary to prevent alloimmunization in subsequent pregnancies.

A. In any pregnant woman presenting with vaginal bleeding and abdominal pain, ectopic pregnancy must be ruled out. The presence of an intrauterine gestational sac makes the likelihood of a concurrent extrauterine pregnancy highly unlikely, but ectopic pregnancy must still be excluded by history, physical exam, labs, and a careful survey of the lower pelvis by US.

B. A threatened abortion is defined by vaginal bleeding in a pregnancy less than 20 weeks GA in the presence of a closed cervical os and no expulsion of POCs. In the setting of a desired pregnancy, the patient should be given instructions for pelvic rest and followed for continued bleeding rather than proceed prematurely to definitive procedures such as D&C.

C. An incomplete abortion involves the partial expulsion of POCs prior to 20 weeks gestation. It can be allowed to complete on its own, or the patient can be offered D&C or D&E.

E. A complete abortion involves the complete expulsion of all POCs prior to 20 weeks gestation. Patients should be followed for signs of infection and recurrent bleeding.

178. **C.** Outpatient treatment of uncomplicated PID has been promoted over the past decade. To qualify for this treatment, the patient must have no signs of pelvic abscess (adnexal masses or abscesses seen on US) or perihepatitis (liver transaminase elevations or RUQ tenderness). Furthermore, patients must be nonpregnant and reliable. Severely ill patients not tolerating oral intake are unlikely to comply with medication regimens and will need hospitalization for parenteral therapy.

A, B. Because untreated PID can lead to infertility, hospitalization is generally recommended but not required for reproductive-age patients. Conversely, it is highly recommended that adolescents or any patients in whom compliance may be an issue be hospitalized for treatment.

D. Adnexal tenderness is part of the diagnostic criteria of PID, and is not particularly an indication for hospitalization.

E. Patients with a penicillin allergy can either be treated without penicillins and cephalosporins, or be treated with a cephalosporin in the ED with the knowledge that there is only a 10% to 15% cross-allergic response. In patients with a history of anaphylaxis to penicillin, adequate coverage can be obtained with oral levofloxacin and clindamycin.

179. **E.** This patient is diagnosed with a ruptured ectopic pregnancy based on the fact that she has no identifiable intrauterine pregnancy at a GA where one should easily be found by US. Additionally, she has free fluid in the cul-de-sac suggestive of rupture and a history of PID, which is a known risk factor for ectopic pregnancy. The decision to take the patient emergently to the operating room is based on the high probability for a ruptured ectopic pregnancy and the fact that the patient has an acute abdomen and appears hemodynamically unstable.

A, B. Uterine curettage or culdocentesis is unnecessary as the diagnosis is highly likely given the US findings.

C, D. Although serial quantitative β-hCG levels would have been helpful in diagnosis prior to rupture, obtaining a value now does not affect the patient's management. Medical management is not appropriate once the ectopic pregnancy has ruptured.

180. **B.** The patient should be treated empirically for chlamydia and gonorrhea. Azithromycin 1 g PO covers *Chlamydia trachomatis*, and ceftriaxone 250 mg IM covers *Neisseria gonorrhoea*.

A. Simple initiation of OCPs at this time will not ensure pregnancy prevention. Instead, the patient should be tested for preexisting pregnancy and offered emergency contraception. If she does not have menses within 21 days, she is advised to see her gynecologist for follow-up.

C. Even if the patient objects to having this crime reported, it is nevertheless a reportable crime. Often, the nursing staff in the ED will already have done so, but it is important that the physician seeing the patient follows up and makes sure that the crime has been reported. Along these lines, evidence of the crime needs to be

collected as well. The patient can then decide whether to give a report to the police once they become involved.

D, E. Despite no initial visual evidence of sperm on a wet prep slide, it is still possible that intravaginal ejaculation did occur. As a consequence, the patient should be offered emergency contraception, baseline HIV testing, and AZT prophylaxis.

181. **D.** This patient has a presentation that is worrisome for TSS, which carries a high mortality rate; all patients with this condition should be hospitalized. In severe cases, pressors may be required to stabilize BPs. With aggressive supportive management, it is likely that mortality can be reduced.

A. TSS is caused by *Staphylococcus aureus* exotoxin. Its systemic absorption leads to fever, rash, and desquamation of palms and soles.

B. No data exist that support an association between PCOS and TSS. The other potential causes provide portals of entry for infection. One of the most commonly associated findings with TSS is a highly absorbent tampon.

C. Because the exotoxin is absorbed through the vaginal wall, blood cultures are usually negative.

E. Fewer than 300 cases of TSS have been reported annually since 1984.

182. **B.** Although the fetal heart tracing (FHT) is not reassuring because it is nonreactive, there is no evidence of acute fetal insult (FHT decelerations or absent variability) that would necessitate emergent delivery at this time. Attempts should be made to achieve reassuring fetal testing by alternative means—for example, by using vibroacoustic stimulation (VAS) to achieve a reactive tracing or by using US to obtain a biophysical profile (BPP). Another method that is used in labor to obtain fetal response as measured by fetal heart rate acceleration is the fetal scalp stimulation.

A. Although elevated, the patient's glucose level does not warrant administration of additional insulin at this time. There is no reason to react to a blood sugar less than 200 in this setting.

C. Assuming the GA is accurate, there is no evidence of fetal benefit from administration of betamethasone beyond 34 weeks GA.

D, E. Delivery is not indicated in this patient unless the FHT becomes nonreassuring. If that were the case, the decision regarding route of delivery would depend on the severity of the nonreassuring FHT as well as fetal presentation. If induction of labor were indicated rather than emergent cesarean section, a prostaglandin agent would be appropriate in this patient with an unfavorable cervix.

183. **D.** Because of her history of manual placenta extraction, this patient is at increased risk for development of endomyometritis, which is a polymicrobial infection of the uterine lining and wall. Diagnosis is made by the presence of fever, uterine tenderness, and elevated WBC count. Treatment consists of broad-spectrum antibiotics. D&C is indicated only if retained POCs is suspected, which is not the case in this patient whose lochia has decreased appropriately.