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IFOM MCQs. OBSTETRICS AND GYNECOLOGY

Tutorial for practical lessons of obstetrics and gynecology for students of the 4th, 5th and 6th course of medical faculty

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PREFACE

Why **AMBOSS** is the only resource you need to ace the **IFOM®** exams.

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1. One day after a 4700-g male newborn is delivered to a 28-year-old primigravid woman, he has bluish discoloration of his lips and fingernails. Oxygen saturation on room air is 81%. Examination shows central cyanosis. A continuous machine-like murmur is heard over the left upper sternal border. A single S2 heart sound is present. Supplemental oxygen does not improve cyanosis. Echocardiography shows the pulmonary artery arising from the posterior left ventricle and aorta arising from the right ventricle with active blood flow between the right and left ventricles. Further evaluation of the mother is most likely to show which of the following?

Echocardiography showing a pulmonary artery arising from the left ventricle and aorta arising from the right ventricle confirms the diagnosis of transposition of the great arteries, which is an important cause of neonatal cyanosis that will not improve with supplemental oxygen. The continuous machine-like murmur indicates a coexistent patent ductus arteriosus, which is critical for life, as it allows mixing of oxygenated blood and its entry into systemic circulation. Patients may also have coexistent arterial or ventricular septal defects that allow mixing of blood between the two circuits.

A.Prenatal lithium intake

B. Elevated serum TSH

C.Prenatal alcohol use

D.Prenatal phenytoin intake

E.Positive rapid plasma reagin test

F.Elevated fasting blood glucose

(Transposition of the great arteries is a cyanotic heart condition that is associated with maternal diabetes, caused by abnormal rotation of the pulmonary artery and aorta during fetal development. Mothers with untreated diabetes will have an elevated fasting blood glucose levels. Other potential neonatal complications from maternal diabetes include fetal macrosomia (seen in thispatient), polycythemia, hypoglycemia, hypocalcemi a, and neonatal respiratory distress syndrome.)

2. A 29-year-old woman, gravida 1, para 0, at 33 weeks' gestation comes to her doctor for a routine visit. Her pregnancy has been uncomplicated. She has systemic lupus erythematosus and has had no flares during her

pregnancy. She does not smoke cigarettes, drink alcohol, or use illicit drugs. Current medications include iron, vitamin supplements, and hydroxychloroquine. Her temperature is 37.2°C (98.9°F), pulse is 70/min, respirations are 17/min, and blood pressure is 134/70 mm Hg. She appears well. Physical examination shows no abnormalities. Ultrasound demonstrates fetal rhythmic breathing for > 30 seconds, amniotic fluid with deepest vertical pocket of 1 cm, one distinct fetal body movement over 30 minutes, and no episodes of extremity extension over 30 minutes. Nonstress test is reactive and reassuring. Which of the following is the next best step in management?

» Feedback

While this fetus breathes rhythmically (2 points) and has a normal nonstress test (2 points), all other findings (movement, tone, amniotic fluid volume) are abnormal (0 points), resulting in a biophysical profile score of 4/10 points

A.Perform cesarean delivery

B.Discontinue hydroxychloroquine and continue close monitoring

C.Administer corticosteroids and continue close monitoring

D.Induction of labor

(Induction of labor with oxytocin is indicated in all patients with a total biophysical profile score ≤ 4 points and no contraindications to vaginal birth, as a low score indicates a high risk of fetal asphyxia within one week if the fetus remains undelivered. Vaginal birth is preferred over cesarean section, since it has less postoperative complications and a shorter recovery period.)

E.Reassurance with expectant management

3.A 34-year-old woman, gravida 1, para 0, at 16 weeks' gestation comes to the physician for a routine prenatal visit. She feels well. She has no history of serious illness. She has smoked one pack of cigarettes daily for 10 years but quit when she learned she was pregnant. She does not drink alcohol or use illicit drugs. Her mother has type 1 diabetes mellitus, and her father has asthma. Current medications include a prenatal multivitamin. She appears well. Her vital signs are within normal limits. Physical examination shows no abnormalities. Serum studies show:

Alpha-fetoprotein	decreased
Unconjugated estriol	decreased
Human chorionic gonadotropin	increased
Inhibin A	increased

During counseling regarding the potential for fetal abnormalities, the patient says that she would like a definitive diagnosis as quickly as

possible. Which of the following is the most appropriate next step in management?

» Feedback

On the second-trimester screening test (quadruple test), the combination of ↑ human chorionic gonadotropin (hCG), ↑ inhibin A, ↓ unconjugated estriol, and ↓ alpha-fetoprotein (AFP) indicates that the fetus may have Down syndrome.

A.Reassurance

B.Cell-free fetal DNA testing

C.Amniocentesis

(Amniocentesis is performed in the second trimester to obtain fetal DNA for karyotype or microarray analysis to confirm a diagnosis of aneuploidy. Because this procedure can increase the risk of miscarriage, premature rupture of the membranes, and infection, it is typically performed only after a positive second-trimester or integrated screening test)

D.Serum pregnancy-associated plasma protein-A

E.Chorionic villus sampling

F.Pelvic ultrasound

4. A 29-year-old woman, gravida 1, para 0, at 24 weeks' gestation comes to the physician for a prenatal visit. She reports some tiredness but has been otherwise well. Her quadruple screen results were normal. Her weight gain has been within normal limits. Current medications include prenatal vitamins. Her vital signs are within normal limits. Examination shows a fundal height consistent in size with a 24-week gestation. Cardiotocography shows a normal fetal heart rate. Blood is drawn for laboratory analysis and an oral glucose tolerance test is scheduled. Which of the following set of laboratory changes is most likely to be present in this patient?

	Hemoglobin (g/dL)	Arterial pH	$PaCO_2$ (mm Hg)	Bicarbonate (mEq/L)	Creatinine (mg/dL)
A	17.5	7.42	31	19	0.5
B	11.6	7.37	52	29	0.4
C	13.4	7.54	47	33	0.5
D	11.9	7.43	32	21	0.4
E	14.2	7.31	29	14	0.6
F	12.1	7.42	33	21	1.1

» Feedback

Consider the physiological changes that occur during pregnancy; and remember SMORE; If the pH changes in the Same direction as pCO2, the acid-base disorder is Metabolic; if pCO2 changes in the Opposite direction as pH, the disorder is Respiratory

A.A

B.B

C.C

D.D

(A pH of 7.43, a low pCO_2 of 32 mm Hg, and a bicarbonate of 21 mEq/L indicate chronic compensated respiratory alkalosis.
During pregnancy, progesterone indirectly increases minute ventilation by about 40% by increasing the sensitivity of the respiratory center to carbon dioxide. This physiological response results in a slightly higher pO_2 and a slightly lower pCO_2 to facilitate gaseous exchange between maternal blood and the fetoplacental unit. An additional effect of hyperventilation is chronic respiratory alkalosis, which is compensated by renal acidification. Furthermore, Hb concentration decreases by about 2 g/dL from the pre-pregnancy value due to a ~ 40–50% increase in plasma volume during pregnancy. The increase in plasma volume and cardiac output during pregnancy also increases the GFR by about 50%. As a result, maternal plasma levels of creatinine, blood urea nitrogen, and uric acid are usually decreased or borderline low.)

E.E

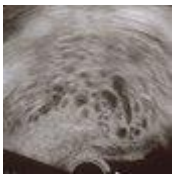
F.F

5. A 40-year-old, gravida 2, nulliparous woman, at 14 weeks' gestation comes to the physician because of a 6-hour history of light vaginal bleeding and lower abdominal discomfort. Eight months ago she had a spontaneous abortion at 10 weeks' gestation. Her pulse is 92/min, respirations are 18/min, and blood pressure is 134/76 mm Hg. Abdominal examination shows no tenderness or masses; bowel sounds are normal. On pelvic examination, there is old blood in the vaginal vault and at the closed cervical os. The uterus is larger than expected for the length of gestation and there are bilateral adnexal masses. Serum β-hCG concentration is 120,000 mIU/ml. Which of the following is the most appropriate next step in management?

The presence of a serum β-hCG concentration > 100,000 mIU/mL, fundal height greater than expected for gestational age, and bilateral adnexal masses on pelvic examination is highly suggestive of gestational trophoblastic disease.

A.Transvaginal ultrasound

(The best imaging modality to diagnose gestational trophoblastic disease (molar pregnancy or choriocarcinoma) is transvaginal ultrasound. In the case of a complete hydatidiform mole, a diffuse, echogenic, multicystic mass can often be seen ("snowstorm pattern"), whereas a partial hydatidiform mole may also include fetal tissue and increased placental thickness.)



Gestational trophoblastic disease

B.Chorionic villus sampling

C.Thyroid function tests

D.Fetal blood sampling

E.Serum progesterone levels

F.Fetal Doppler ultrasound

6. A transvaginal ultrasound shows an intrauterine heteroechoic mass with numerous anechoic spaces and no identifiable fetus or amniotic

fluid. Both the ovaries are enlarged and have multiple thin-walled, septated cysts with clear content. Which of the following is the most likely cause of the ovarian findings?

» Feedback

These cysts result from ovarian hyperstimulation due to high levels of hCG and prolactin in patients with molar pregnancy.

A.Serous cystadenomas

B.Chocolate cysts

C.Corpus luteum cysts

D.Yolk sac tumor

E.Luteoma of pregnancy

F.Theca leutein cysts

(Theca lutein cysts arise from increased gonadotropin levels, most commonly beta-hCG. They are a common finding in complete moles, as an increased beta-hCG level is a typical finding of gestational trophoblastic disease. Theca lutein cysts are also associated with multiple pregnancies, infertility treatment with gonadotropins, or PCOS. These benign cysts often occur bilaterally, have thin walls and clear content, and usually resolve spontaneously within 2–4 months.)

7. A 2400-g (5.29-lb) male newborn is delivered at term to a 26-year-old woman. Physical examination shows a sloping forehead, a flat nasal bridge, increased interocular distance, low-set ears, and a protruding tongue. There is a single palmar crease and an increased gap between the first and second toe. The abdomen is distended. An x-ray of the abdomen shows two large air-filled spaces in the upper quadrant. Karyotype analysis shows 46 chromosomes in all tested cells. Which of the following is the most likely underlying cause of this patient's findings?

» Feedback

The characteristic morphological features and the "double bubble" sign on abdominal x-ray (indicating duodenal atresia) are all suggestive of trisomy 21 (Down syndrome). Unlike the majority of individuals with Down syndrome, this patient has a normal total number of chromosomes in all cells.

A.Balanced translocation

B.Meiotic nondisjunction

C.Mitotic nondisjunction

D.Unbalanced translocation

(Unbalanced Robertsonian translocation is the pathomechanism underlying translocation trisomy 21, which accounts for approx. 4% of cases of Down syndrome. Translocation trisomy 21 can occur in offsprings of a translocation carrier with a balanced Robertsonian translocation that involves chromosome 21. Inheritance of a translocation chromosome 21 and a normal chromosome 21 leads to three copies of genetic material from chromosome 21 while maintaining the normal total number of 46 chromosomes.)

E.Uniparental disomy

8.A 25-year-old woman is brought to the emergency department because of

a 1-day history of lower abdominal pain and vaginal bleeding. Her last menstrual period was 7 weeks ago. A urine pregnancy test is positive. A pelvic ultrasound shows a normal appearing uterus with an empty intrauterine cavity and a minimal amount of free pelvic fluid. Treatment with a drug is begun. Which of the following is the most likely effect of this drug?

» Feedback

The medical treatment of choice for uncomplicated ectopic pregnancy is methotrexate (MTX).

A.Decrease in guanylate

B.Increase in thymidine monophosphate

C.Increase in deoxyuridine monophosphate

(MTX is a folate antimetabolite that competitively inhibits dihydrofolate reductase. Dihydrofolate reductase reduces dihydrofolate, enabling it to act as a methyl group shuttle for thymidylate synthase. Thymidylate synthase builds thymine bases, converting deoxyuridine monophosphate (dUMP) to deoxythymidine monophosphate (dTMP). Inhibition of dihydrofolate reductase by MTX, therefore, causes a buildup of dUMP and a decrease in dTMP, effectively halting the production of pyrimidine bases, which are essential precursors for DNA synthesis. In the case of ectopic pregnancy, as seen in this patient, ineffective DNA synthesis blocks growth and development of the fertilized egg, typically leading to a rapid decrease in β-hCG levels within one week).

D.Decrease in phosphoribosyl pyrophosphate

E.Increase in tetrahydrofolate polyglutamate

9. A 16-year-old girl comes to the physician with her mother because of intermittent abdominal cramps, fatigue, and increased urination over the past 3 months. She has no history of serious illness. She reports that she has not yet had her first menstrual period. Her mother states that she receives mostly A and B grades in school and is very active in school athletics. Her mother has type 2 diabetes mellitus and her maternal aunt has polycystic ovary syndrome. Her only medication is a daily multivitamin. The patient is 150 cm (4 ft 11 in) tall and weighs 50 kg (110 lb); BMI is 22.2 kg/m^2. Vital signs are within normal limits. A grade 2/6 early systolic murmur is heard best over the pulmonic area and increases with inspiration. The abdomen is diffusely tender to palpation and a firm mass is felt in the lower abdomen. Breast and pubic hair development are at Tanner stage 5. Which of the following is the most appropriate next step in management?

» Feedback

This patient presents with abdominal cramps, fatigue, polyuria, amenorrhea, and a lower abdominal mass. These symptoms suggest a possible pregnancy.

A.recommend protein-calorie supplementation

B.Pelvic ultrasound

C.Fasting glucose and lipid panel

D.Serum fT4

E.Echocardiography

F.Serum β-hCG

(In cases of suspected pregnancy, serum ß-hCG testing can be used to analyze a patient's serum.
A pregnancy is detectable 6–9 days after fertilization in serum (or ~ 14 days after fertilization in urine). Signs of pregnancy include amenorrhea, nausea, vomiting, breast enlargement and tenderness, edema, dyspnea, and polyuria. This 16-year-old girl's presentation raises suspicion for pregnancy, and although she reports that she has not had her first menstrual period yet, a pregnancy should be ruled out first before performing other diagnostic steps.)

G.Karyotyping

H.GnRH stimulation testing

10. A 30-year-old woman, gravida 2, para 1, at 12 weeks' gestation comes to the physician for a prenatal visit. She feels well. Pregnancy and vaginal delivery of her first child were uncomplicated. Five years ago, she was diagnosed with hypertension but reports that she has been noncompliant with her hypertension regimen. The patient does not smoke or drink alcohol. She does not use illicit drugs. Medications include methyldopa, folic acid, and a multivitamin. Her temperature is 37°C (98.6°F), pulse is 80/min, and blood pressure is 145/90 mm Hg. Physical examination shows no abnormalities. Laboratory studies, including serum glucose level, and thyroid-stimulating hormone concentration, are within normal limits. The patient is at increased risk of developing which of the following complications?

» Feedback

Think about complications associated with high blood pressure during pregnancy.

A.Uterine rupture

B.Spontaneous abortion

C.Polyhydramnios

D.Abruptio placentae

(Maternal hypertension, whether chronic or pregnancy-induced, is a strong predisposing factor for the development of abruptio placentae. Although the exact underlying mechanism for placental abruption is unknown, it is thought to result from a complication of a chronic placental disorder. Maternal hypertension is also known to cause functional and morphological placental changes, which additionally increases the risk of chronic placental insufficiency, that in turn, can cause oligohydramnios and intrauterine growth restriction of the fetus.)

E.Placenta previa

11. A 39-year-old woman, gravida 5, para 4, at 41 weeks' gestation is brought to the hospital because of

regular uterine contractions that started 2 hours ago. Pregnancy has been complicated by iron deficiency anemia treated with iron supplements. Pelvic examination shows the cervix is 90% effaced and 7-cm dilated; the vertex is at -1 station. Fetal heart tracing is shown. The patient is repositioned, O_2 therapy is initiated, and amnioinfusion is done. A repeat assessment after 20 minutes shows a similar cervical status, and no changes in the fetal heart tracing, and less than 5 contractions in a period of 10 minutes.What is the most appropriate next step in management?

» Feedback

This patient has a high-risk pregnancy (advanced age, anemic status) and is in active labor (> 6 cm cervical dilation) with a fetal heart tracing showing recurrent late decelerations that have not improved despite intrauterine resuscitation measures.
This infant is at high risk for impending fetal asphyxia

A.Begin active pushing

B.Retry maternal repositioning

C.Administer tocolytics

D.Begin oxytocin infusion

E.Monitor without intervention

F.Emergent cesarean delivery

(Despite several intrauterine resuscitation measures, this fetal heart rate tracing still shows recurrent late decelerations, suggesting continued fetal hypoxia. Therefore, emergent cesarean section is warranted to prevent fetal asphyxia and intrauterine death)

12. A male newborn delivered at 32 weeks' gestation to a 41-year-old woman dies shortly after birth. The mother did not receive prenatal care and consistently consumed alcohol during her pregnancy. At autopsy, examination shows microcephaly, an eye in the midline, a cleft lip, and a single basal ganglion. Failure of which of the following processes is the most likely cause of this condition?

» Feedback

This condition has been associated with disruption of the sonic hedgehog signaling pathway.

A.Fusion of the lateral palatine shelves

B.Disjunction of chromosome 18

C.Closure of the rostral neuropore

D.Formation of the 1st branchial arch

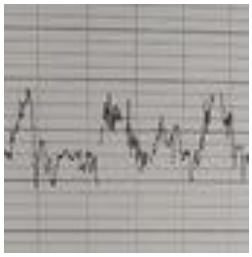
E.Development of the metencephalon

F.Cleavage of the forebrain

(Failed forebrain cleavage (i.e., the separation into a left and right hemisphere) leads to holoprosencephaly, which manifests with severe maxillofacial anomalies (e.g., cleft lip, nasal deformities, or cyclopia), a singular basal ganglion, and a singular ventricle (monoventricle), most of which can be seen on this newborn's autopsy. The separation of the two hemispheres usually occurs during the fifth or sixth week of pregnancy; failure to do so most typically results in a first trimester spontaneous abortion, but fetuses occasionally survive to the third trimester, as was the case here. Maternal alcohol consumption is a strong risk factor for holoprosencephaly as well as fetal alcohol syndrome.)

13.A 27-year-old woman, gravida 2, para 1, at 32 weeks' gestation comes to the physician for a prenatal visit.

She feels that her baby's movements have decreased recently. She says that she used to feel 10–12 movements/hour earlier, but that it has recently decreased to about 7–8/hour. Pregnancy and delivery of her first child were uncomplicated. Medications include folic acid and a multivitamin. Her temperature is 37.2°C (99°F), and blood pressure is 108/60 mm Hg. Pelvic examination shows a uterus consistent in size with a 32-week gestation. The fetus is in a transverse lie presentation. The fetal heart rate is 134/min. A 14-minute recording of the nonstress test is shown. Which of the following is the most appropriate next step in managing this patient?



The nonstress test shows a good beat to beat variability (a fluctuation > 5 beats/minute in the baseline fetal heart rate) and 4 FHR accelerations within 14 minutes. These findings along with a normal fetal heart rate (FHR) and the absence of FHR decelerations indicate a reassuring fetal heart tracing.

A.Repeat the nonstress test weekly

B.Reposition the mother

C.Provide reassurance to the mother

(A reassuring fetal heart tracing indicates fetal well-being. In a patient with a single episode of decreased fetal movements and an otherwise uncomplicated pregnancy, reassurance is all that is needed if the nonstress test shows a reassuring fetal heart tracing.)

D.Perform a biophysical profile test

E.Administer intravenous oxytocin

F.Perform vibroacoustic stimulation

G.Extend the nonstress test by 20 minutes

#

14. A 26-year-old primigravid woman at 25 weeks' gestation comes to the physician for a prenatal visit. She has no history of serious illness and her only medication is a daily prenatal vitamin. A 1-hour 50-g glucose challenge shows a glucose concentration of 167 mg/dL (N < 135). A 100-g oral glucose tolerance test shows glucose concentrations of 213 mg/dL (N < 180) and 165 mg/dL (N < 140) at 1 and 3 hours, respectively. If she does not receive adequate treatment for her condition, which of the following complications is her infant at greatest risk of developing?

» Feedback

Glucose readily crosses the placenta, meaning that elevated maternal glucose levels lead to elevated fetal blood glucose and, accordingly, cause physiologic changes that can lead to complications in the newborn infant.

A.Restricted growth

B.Elevated calcium levels

C.Islet cell hyperplasia

(Hyperplasia of islet cells, the pancreatic cells responsible for producing insulin, can occur in utero in response to elevated maternal blood glucose levels, e.g., due to in gestational diabetes. This can cause infantile hyperinsulinemia and put the infant at risk for hypoglycemia once the maternal placental transfer of glucose ceases after birth)

D.Decreased amniotic fluid production

E.Omphalocele

F.Decreased hematocrit

15. A 2400-g (5.29-lb) male newborn is delivered at term to a 38-year-old woman. The initial examination shows that the child is at the 5th percentile for head circumference and 10th percentile for weight and length. He has a sloping forehead, a flat nasal bridge, increased interocular distance, low-set ears, and a protruding tongue. An examination of the peripheries reveals a single palmar crease and an increased gap between the first and second toe. Ocular examination reveals small white and brown spots in the periphery of both irises. The abdomen is distended. An x-ray of the abdomen shows two large air-filled spaces in the upper quadrant. This child's condition is most likely associated with which of the following cardiac anomalies?

» Feedback

The characteristic morphological features, Brushfield spots in the eye, and the “double bubble” sign on abdominal x-ray (indicating duodenal atresia) are all suggestive of trisomy 21 (Down syndrome).

A.Atrial septal defects

B.Atrioventricular septal defect

(Atrioventricular septal defects (AVSD; also referred to as endocardial cushion defects) are the most common congenital heart defects in patients with Down syndrome, occurring in about 40% of newborns with trisomy 21. AVSDs are usually diagnosed in the prenatal period, and discovery of an AVSD should warrant prompt genetic testing, as there is a strong association with trisomy 21. Down syndrome is diagnosed in approx. 40–50% of children with AVSD).

C.Ventricular septal defect

D.Patent ductus arteriosus

E.Tetralogy of Fallot

F.Pulmonary valve stenosis

G.Transposition of the great arteries

16. A 37-year-old woman, gravida 3, para 2, at 28 weeks' gestation comes to the physician for a follow-up examination. One week ago, an oral glucose tolerance screening test showed elevated serum glucose levels. She has complied with the recommended diet and lifestyle modifications. Over the past week, home blood glucose monitoring showed elevated fasting and post-prandial blood glucose levels. Which of the following describes the mechanism of action of the most appropriate pharmacotherapy for this patient?

» Feedback

This woman has gestational diabetes that has not responded to diet and lifestyle modifications. If lifestyle changes alone are not sufficient to achieve proper glycemic control, insulin is the preferred antihyperglycemic medication in pregnant women.

A.Inhibition of dipeptidyl peptidase 4

B.Blockade of sodium-glucose cotransporter 2

C.Binding of tyrosine kinase receptors

(Binding of insulin to its transmembrane receptor, a member of the tyrosine kinase family, induces autophosphorylation of tyrosine residues on the intracellular domain of the protein. This activates downstream signaling cascades that mediate insulin's homeostatic and anabolic effects, e.g., enhanced glucose uptake and glycogen synthesis/storage. All women with gestational diabetes should first attempt lifestyle interventions with strict blood glucose monitoring (4x daily) to meet glycemic goals before initiating pharmacotherapy).

D.Inhibition of alpha-glucosidase

E.Activation of peroxisome proliferator-activated receptor-gamma

F.Opening of ATP-dependent K^+-channels

17A 26-year-old woman, gravida 2, para 1, at 26 weeks' gestation, comes to the emergency department because of pain and swelling in her right calf. Physical examination shows an increased circumference of the right calf. The leg is warm and tender on palpation. Dorsiflexion of the right foot elicits calf pain. An ultrasound of the right leg shows a noncompressible popliteal vein. Which of the following is the most appropriate pharmacotherapy for this patient's condition?

» Feedback

(In a pregnant woman, leg swelling and progressive tenderness, a positive Homans sign, and a noncompressible popliteal vein on ultrasound are sufficient to diagnose a deep vein thrombosis (DVT).

A.Aspirin

B.Clopidogrel

C.Heparin

(Heparin is the most appropriate pharmacotherapy in this pregnant patient with a deep vein thrombosis (DVT). During pregnancy, levels of clotting factors increase (fibrinogen, thrombin), while levels of anticoagulants (protein S) decrease, resulting in a hypercoagulable state. Pregnancy is also associated with decreased physical activity, a general risk factor for DVT. Moreover, the pressure of the gravid uterus on the inferior vena cava can impede venous return and predispose to DVT. Heparin is safe during pregnancy, as it does not cross the placental barrier).

D.Rivaroxaban

E.Alteplase

F.Warfarin

G.Argatroban

18. A 38-year-old woman, gravida 2, para 1, at 35 weeks' gestation comes to the emergency department because of an episode of vaginal bleeding that morning. The bleeding has subsided. She has had no prenatal care. Her previous child was delivered with a caesarean section because of a breech

presentation. Her temperature is 37.1°C (98.8°F), pulse is 88/min, respirations are 14/min, and blood pressure is 125/85 mm Hg. The abdomen is nontender and the size of the uterus is consistent with a 35-week gestation. No contractions are felt. The fetal heart rate is 145/min. Her hemoglobin concentration is 12 g/dL, leukocyte count is 13,000/mm^3, and platelet count is 350,000/mm^3. Transvaginal ultrasound shows that the placenta covers the internal os. Which of the following is the most appropriate next step in management?

» Feedback

This patient's painless vaginal bleeding in the third trimester and ultrasound findings suggest a complete placenta previa, which involves the full obstruction of the neck of the uterus.

A. Perform emergency cesarean delivery

B. Administer oxytocin to induce labor

C. Observation only

D. Administer magnesium sulfate

E. Perform bimanual pelvic examination

F. Schedule elective cesarean delivery

(Observation and a scheduled elective C-section at 36–37 weeks' gestation is the right approach in a patient with placenta previa, as vaginal birth could cause severe hemorrhage due to rupture of placental vessels. Immediate delivery via emergency C-section is not necessary because labor has not started; there is no active bleeding or hemodynamic instability and no evidence of fetal distress (e.g., an abnormal fetal heart rate pattern). Amniocentesis may be performed to assess fetal lung maturity and should be considered when determining the scheduling of this patient's C-section. If this woman were already at 37 weeks' gestation, the fetus could be delivered immediately. Continuation of pregnancy beyond 37 weeks is associated with severe bleeding complications and unscheduled emergency deliveries. A vaginal birth in a patient with placenta previa is only possible if the mother and child are well and ultrasonography shows the placenta lying > 2 cm away from the internal os).

19. A 28-year-old woman comes to the physician because she had a positive pregnancy test at home. She reports feeling nauseated and has vomited several times over the past week. During this period, she has also had increased urinary frequency. She is sexually active with her boyfriend and they use condoms inconsistently. Her last menstrual period was 5 weeks ago. Physical examination shows no abnormalities. A urine pregnancy test is positive. A pap smear is positive for a high-grade squamous intraepithelial lesion. Colposcopy shows cervical intraepithelial neoplasia grade II and III. Which of the following is the most appropriate next step in the management of this patient?

» Feedback

This patient presents with a high-grade squamous intraepithelial lesion (HSIL) and signs of CIN 2, 3 on colposcopy. Since the patient is pregnant, management is different

A. Reevaluation with cytology and colposcopy 6 weeks after birth

(Reevaluation with cytology and colposcopy 6 weeks after birth is acceptable in this patient with a CIN 2+ (precancerous) lesion. High-grade lesions discovered during pregnancy have a high rate of regression in the postpartum period. Biopsy and

treatment can usually be safely delayed until after delivery if invasive disease has been excluded via colposcopy. An alternative approach consists of reevaluation with cytology and colposcopy not more often than every 12 weeks during pregnancy; biopsies, however, should only be taken during pregnancy if appearance of the lesion worsens (e.g., large confluent or multiple discrete lesions) or cytology suggests invasive cancer. Endocervical curettage and endometrial sampling are contraindicated in pregnant women).

B. Colposcopy and cytology at 6-month intervals for 12 months

C. Endocervical curettage

D. Perform loop electrosurgical excision

E. Diagnostic excisional procedure

20. A 36-year-old primigravid woman at 34 weeks' gestation comes to the physician because of a 1-week history of upper abdominal discomfort, nausea, and malaise. She had a mild upper respiratory tract infection a week ago. She has a 10-year history of polycystic ovarian syndrome and a 3-year history of hypertension. Her medications include metformin, labetalol, folic acid, and a multivitamin. Her pulse is 92/min, respirations are 18/min, and blood pressure is 147/84 mm Hg. Examination shows a nontender uterus consistent in size with a 34-week gestation. There is mild tenderness of the right upper quadrant of the abdomen. The fetal heart rate is reactive with no decelerations. Which of the following is the most appropriate next step in management?

» Feedback

A history of recent-onset abdominal pain or discomfort in a pregnant woman, especially in the third trimester of a woman with hypertension should arouse the suspicion of HELLP syndrome.

A. Serum bile acid levels

B. Serum amylase and lipase levels

C. Stool antigen assay for H. pylori

D. HBsAg and IgM anti-HBc serology

E. Reassurance and follow-up

F. Serum transaminase levels and platelet count

(Checking the serum transaminase levels and platelet count is a good diagnostic test when suspecting hypertensive pregnancy disorders, such as preeclampsia and HELLP syndrome. Even though the clinical findings in this patient are subtle, hypertension and abdominal pain in a women at ≥ 34 weeks of gestation should always prompt evaluation for hypertensive pregnancy disorders. Elevated transaminases (indicating impaired liver function) and reduced platelets would indicate HELLP syndrome. Other possible findings in both preeclampsia and HELLP are headache, visual disturbances, proteinuria, and severe hypertension (systolic ≥ 160 mmHg or diastolic BP ≥ 110 mmHg).

21. A 23-year-old primigravid woman at 8 weeks' gestation is brought to the emergency department by her husband because of increasing confusion and high-grade fever over the past 16 hours. Three days ago, she was prescribed metoclopramide by her physician for the treatment of nausea and vomiting. She has a history of depression. Current medications include fluoxetine. She is confused and not oriented to time, place, or person.

Her temperature is 39.8°C (103.6°F), pulse is 112/min, and blood pressure is 168/96 mm Hg. Examination shows profuse diaphoresis and flushed skin. Muscle rigidity is present. Her deep tendon reflexes are decreased bilaterally. Mental status examination shows psychomotor agitation. Laboratory studies show:

Hemoglobin	12.2 g/dL
Leukocyte count	17,500/mm^3
Creatinine	1.4 mg/dL
Total bilirubin	0.7 mg/dL
Alkaline phosphatase	45 U/L
AST	122 U/L
ALT	138 U/L
Creatine kinase	1070 U/L

Wich of following drugs is most likely also cause the condition that is responsible for this patients current symptoms?

» Feedback

This woman's clinical features of hyperthermia, muscle rigidity, bradyreflexia, altered mental status, autonomic instability (tachycardia, hypertension) in combination with laboratory studies showing leukocytosis, raised transaminases, and elevated creatine kinase, suggest neuroleptic malignant syndrome (NMS).

A.Atropine

B.Succinylcholine

C.Phenelzine

D.Haloperidol

(High-potency antipsychotics such as haloperidol are the most common cause of neuroleptic malignant syndrome (NMS), but low-potency or atypical antipsychotics, as well as antiemetics like metoclopramide have also been associated with NMS. While symptoms usually develop during the first 2 weeks of therapy, as seen in this patient, NMS may also develop after years of continuous therapy and without any associated increase of dose. Nonetheless, higher doses or switching antipsychotics are risk factors for the development of NMS).

E.Dextroamphetamine

F.Amitriptyline

22_ One day after giving birth to a 4050-g (8-lb 15-oz) male newborn, a 22-year-old woman experiences involuntary loss of urine. The urine loss occurs intermittently in the absence of an urge to urinate. It is not exacerbated by sneezing or coughing. Pregnancy was uncomplicated except for two urinary tract infections that were treated with nitrofurantoin. Delivery was complicated by prolonged labor and severe labor pains; the patient received epidural analgesia. Her temperature is 36.2°C (97.2°F), pulse is 70/min, and blood pressure is 118/70 mm Hg. The abdomen is distended and tender to deep palpation. Pelvic examination shows a uterus that extends to the umbilicus; there is copious thick, whitish-red vaginal discharge. Neurologic examination shows no

abnormalities. Which of the following is the most likely cause of this patient's urinary incontinence?

» Feedback

This patient's involuntary loss of urine, abdominal distention, and tenderness one day after the administration of epidural analgesia suggest overflow incontinence.

A.Prolonged labor

B.Current urinary tract infection

C.Damage to nerve fibers

D.Decrease in estrogen levels

E.Recurrent urinary tract infections

F.Spinal epidural hematoma

G.Inadequate intermittent catheterization

(This patient presents with overflow incontinence, a condition caused by overdistention of the bladder secondary to impaired detrusor contractility or bladder outlet obstruction. Since anesthetics reduce bladder and sphincter contractility as well as the micturition reflex, intermittent catheterization is performed while under the effects of epidural anesthesia to prevent overdistention of the bladder. Failure to catheterize adequately during anesthesia leads to overfilling of the bladder, which manifests as overflow incontinence after birth).

H.Pelvic floor damage

23. Two days after being admitted to the hospital because of severe peripartum vaginal bleeding during a home birth, a 40-year-old woman, gravida 3, para 3, has a 30-second generalized convulsive seizure followed by unconsciousness. Prior to the event she complained of acute onset of sweating and uncontrollable shivering. She was hemodynamically unstable and required several liters of intravenous fluids and 5 units of packed red blood cells in the intensive care unit. The patient's two prior pregnancies, at ages 33 and 35, were uncomplicated. She is otherwise healthy. Prior to admission, her only medication was a daily prenatal vitamin. Temperature is 37.5°C (99.5°F), pulse is 120/min, respirations are 18/min, blood pressure is 101/61 mm Hg. Pulse oximetry on room air shows an oxygen saturation of 96%. Examination shows very little milk expression from the breasts bilaterally. Finger-stick glucose level is 36 mg/dL. Which of the following is the most likely underlying cause of this patient's condition?

» Feedback

During pregnancy, a certain gland becomes significantly enlarged, making it prone to damage.

A.Adrenal hemorrhage

B.Lactotrophic adenoma

C.Hypoactive thyroid

D.Pituitary ischemia

(Pituitary ischemia is the underlying pathophysiology of Sheehan syndrome. The anterior pituitary gland receives its blood supply from a relatively low-pressure arterial system and is, therefore, vulnerable to ischemia and infarction.
During pregnancy, hypertrophy of prolactin-producing regions increases the size of the pituitary gland, making it very sensitive to ischemia, e.g., secondary to prolonged or severe postpartum bleeding,

as in this patient. Depending on the extent of pituitary necrosis, only one, several, or all pituitary hormones may be deficient; accordingly, symptoms may vary. Postdelivery failure to lactate adequately (deficiency in prolactin), as seen here, is a common presentation. Furthermore, this patient has evidence of acute secondary adrenal insufficiency, resulting from a deficiency in ACTH, presenting with hypotension, hypoglycemia and associated symptoms (seizure, loss of consciousness).

E.Hypothalamic infarction

24. Twenty minutes after delivery of a newborn infant, a 22-year-old woman starts breastfeeding. Initially, the expressed milk is thick and yellowish. Three days later, the mother's breasts swell and the expressed milk becomes thinner and whiter. A decrease in maternal serum concentration of which of the following is most likely responsible for the observed changes in milk production?

» Feedback

This hormone physiologically stimulates the endometrium to develop a secretory lining during the menstrual cycle.

A.Estrogen

B.Oxytocin

C.Human chorionic gonadotropin

D.Prolactin

E.Thyroxine

F.Progesterone

(Lactogenesis is the process of milk production during pregnancy and is comprised of two stages: secretory initiation (stage I) and secretory activation (stage II). Secretory initiation occurs during the second half of pregnancy, when high levels of circulating progesterone directly inhibit prolactin-induced milk production. Delivery of the placenta causes a rapid decline in progesterone. This decline triggers secretion of high levels of prolactin, cortisol, and insulin, which propel the second stage of lactogenesis. Secretory activation usually occurs on the second or third day post-partum and is marked by breast swelling and copious milk production).

25. A 29-year-old woman, gravida 1, para 0, at 36 weeks' gestation is brought to the emergency department after an episode of dizziness and vomiting followed by loss of consciousness lasting 1 minute. She reports that her symptoms started after lying down on her back to rest, as she felt tired during yoga class. Her pregnancy has been uncomplicated. On arrival, she is diaphoretic and pale. Her pulse is 115/min and blood pressure is 90/58 mm Hg. On examination, the patient is lying in the supine position with a fundal height of 36 cm. There is a prolonged fetal heart rate deceleration to 80/min. Which of the following is the most appropriate action to reverse this patient's symptoms in the future?

» Feedback

This patient's symptoms are consistent with supine hypotensive syndrome, which frequently occurs due to compression of the inferior vena cava associated with the anatomical changes involved in pregnancy.

A.Performing the Muller maneuver

B.Lying in the supine position and elevating legs

C.Gentle compression with an abdominal binder

D.Lying in the left lateral decubitus position

(The left lateral decubitus position is generally recommended for pregnant women when lying down, especially in the third trimester, because this position shifts the uterus away from and thus avoids compression of the inferior vena cava. Compression of the inferior vena cava is the cause of supine hypotensive syndrome, which results in compromised venous return and leads to decreased cardiac output, fetal hypoxia, and prolonged decelerations on cardiotocography, as seen here).

E.Performing the hand grip maneuver

F.Performing the Valsava maneuver

26. A 3000-g (6-lb 10-oz) male newborn delivered at 38 weeks' gestation develops respiratory distress shortly after birth. Physical examination shows low-set ears, retrognathia, and club feet. Within a few hours, the newborn dies. Examination of the liver at autopsy shows periportal fibrosis. Which of the following is the most likely underlying cause of the neonate's presentation?

» Feedback

Compression of the fetus secondary to maternal oligohydramnios results in club feet and craniofacial abnormalities such as retrognathia and low-set ears (Potter sequence). Insufficient amniotic fluid also causes pulmonary hypoplasia, which results in respiratory distress after birth.

A.Bilateral hypoplasia of kidneys

B.Mutation on the short arm of chromosome 16

C.Valvular obstruction of urine outflow

D.Nondisjunction of chromosome 18

E.Cystic dilation of collecting duct

(This neonate has autosomal recessive polycystic kidney disease (ARPKD), which is caused by a mutation in the fibrocystin (PKHD1) gene on the short arm of chromosome 6. This mutation leads to cystic dilation of the distal nephron and collecting duct. ARPKD can cause in-utero renal failure and subsequently maternal oligohydramnios. ARPKD is also associated with progressive hepatic fibrosis, which can cause portal hypertension and liver failure).

27. A 30-year-old primigravid woman at 14 weeks' gestation comes to the physician for her first prenatal visit. She reports some nausea and fatigue. She takes lithium for bipolar disorder and completed a course of clindamycin for bacterial vaginosis 12 weeks ago. She works as a teacher at a local school. She smoked a pack of cigarettes daily for 12 years but stopped after finding out that she was pregnant. She does not drink alcohol. Her temperature is 37°C (98.6°F), pulse is 80/min, and blood pressure is 125/80 mm Hg. Pelvic examination shows a uterus consistent in size with a 14-week gestation. There is mild lower extremity edema bilaterally. Urinalysis is within normal limits. The patient's child is at increased risk for developing which of the following complications?

» Feedback

This patient is taking lithium for bipolar disorder. Especially during the first trimester, lithium intake may influence fetal development

A.Intellectual disability

B.Ototoxicity and hearing loss

C.Caudal regression syndrome

D.Atrialized right ventricle

(This patient's history of lithium intake as treatment for bipolar disorder increases the risk of Ebstein anomaly in the fetus, which causes an atrialized right ventricle, tricuspid regurgitation, and right atrial enlargement. Lithium is thought to prevent physiological cardiac septation, leading to incomplete separation of the right atrioventricular valve from the ventricular myocardium (atrialization). The defect can either manifest with in utero heart failure (hydrops fetalis on ultrasound) or postnatal cyanosis, abnormal cardiac auscultation, and heart failure).

E.Fetal hydantoin syndrome

F.Bone damage

G.Chorioretinitis

28. A 28-year-old primigravid woman comes to the physician at 27 weeks' gestation with increased urinary frequency, a burning sensation when urinating, flank pain, and nausea. Her pregnancy has been uncomplicated. Glucose tolerance testing performed at 25 weeks' gestation was normal. She is sexually active with her husband. Her only medication is a prenatal vitamin. Her pulse is 90/min, respirations are 16/min, and blood pressure is 125/75 mm Hg. Physical examination shows marked tenderness in the right costovertebral area. Pelvic examination shows a uterus consistent with 27 weeks' gestation. Her urine dipstick is positive for leukocyte esterase and nitrites. The urine is sent for bacterial culture. Which of the following changes most likely contributed to this patient's condition?

» Feedback

Given her symptoms (increased urinary frequency, dysuria, flank pain) and urine findings (positive leukocyte esterase and nitrites), this patient most likely has an acute urinary tract infection (UTI). Hormonal changes during pregnancy affect the urinary tract, increasing the risk of asymptomatic bacteriuria, acute cystitis, and acute pyelonephritis.

A.Decreased ureteral smooth muscle tone

(Increased levels of progesterone during pregnancy result in ureteral smooth muscle relaxation and ureteral dilation. This process begins around the 6th week of pregnancy, peaks around 22–26 weeks, and persists until delivery. Pressure exerted by the expanding uterus on the bladder also contributes to ureteral dilation. Ureteral dilation can increase urinary stasis and ureterovesical reflux, leading to higher rates of ascending bacterial infections).

B.Increased body temperature

C.Increased urine concentration

D.Decreased urine volume

E.Increased urinary pH

F.Decreased urine glucose concentration

29. A 37-year-old primigravid woman at 12 weeks' gestation comes to the emergency department because

of vaginal bleeding and dull suprapubic pain for 3 hours. She has had spotting during the last 3 days. Her medications include folic acid and a multivitamin. She has smoked one pack of cigarettes daily for 15 years. Her temperature is 37°C (98.6°F), pulse is 110/min, and blood pressure is 89/65 mm Hg. Pelvic examination shows a dilated cervical os and a uterus consistent in size with an 11-week gestation. Ultrasonography shows an embryo of 4 cm in crown-rump length and no fetal cardiac activity. Which of the following is the most appropriate next step in management?

» Feedback

Vaginal bleeding, an open cervical os, and no fetal cardiac activity on ultrasonography are diagnostic of an inevitable abortion

A.Cervical cerclage

B.Misoprostol therapy

C.Serial serum β-HCG measurements

D.Follow-up ultrasonography

E.Methotrexate therapy

F.Dilation and curettage

(Dilation and curettage (D&C) is indicated in all cases of early pregnancy loss with heavy bleeding or intrauterine sepsis. This woman with an inevitable abortion presents with retained products of conception and hemodynamic instability (as evidenced by hypotension and tachycardia, in the setting of vaginal blood loss). Therefore, she requires immediate surgical evacuative therapy that minimizes further blood loss. D&C provides a controlled method of uterine evacuation in a hospital setting for this patient).

G.Complete bed rest

30. A 37-year-old woman, gravida 4, para 3, at 35 weeks' gestation is admitted to the hospital in active labor. Her three children were delivered by Cesarean section. One hour after vaginal delivery, the placenta is not delivered. Manual separation of the placenta leads to profuse vaginal bleeding. Her pulse is 122/min and blood pressure is 90/67 mm Hg. A firm, nontender uterine fundus is palpated at the level of the umbilicus. Hemoglobin is 8.3 g/dL and platelet count is 220,000/mm^3. Activated partial thromboplastin time and prothrombin time are within normal limits. Which of the following is the most likely underlying mechanism of this patient's postpartum bleeding?

» Feedback

Prior C-sections are an important risk factor for this condition.

A.Impaired uterine contractions

B.Consumption of intravascular clotting factors

C.Rupture of the uterine wall

D.Rupture of the fetal vessels

E.Defective decidual layer of the placenta

(Placenta accreta occurs when the placenta is directly adherent to the myometrium instead of the decidua basalis but does not invade or penetrate the myometrium (i.e., placenta increta). Although the exact etiology is unknown, previous C-sections are the most important risk factor. Clinically, patients present with delayed placental detachment and massive, life-threatening postpartum hemorrhage at the time of

attempted manual separation of the placenta, as seen in this patient).

31. An 18-year-old primigravid woman comes to the physician for her first prenatal visit at 20 weeks' gestation. There is no family history of serious illness. She appears healthy and well-nourished. The uterus is palpated up to the level of the umbilicus. Laboratory studies show a maternal serum α-fetoprotein concentration of 8.2 MoM (N = 0.5–2.0). Ultrasonography shows a defect in the fetal abdominal wall to the right of the umbilical cord. A part of the fetus' bowels herniates through the abdominal defect and is suspended freely in the amniotic fluid. This fetus's condition is most likely associated with which of the following?

» Feedback

This fetus has gastroschisis, a condition in which the intestines herniate freely through an abdominal defect in the paraumbilical area; unlike omphalocele, in which the intestines protrude in the midline through the navel but are contained in a hernia sac. Both abdominal wall defects are associated with an elevated second-trimester maternal serum α-fetoprotein (MSAFP) concentration.

A.Chromosomal trisomy

B.Spina bifida

C.Intestinal dysmotility

(Intestinal dysmotility (e.g., gastroparesis, ileus) is a complication seen in ~ 50% of patients with gastroschisis that can lead to impaired absorption of nutrients. Peristalsis is inhibited by bowel constriction at the abdominal wall opening and by an inflammatory reaction caused by exposure of the bowel to amniotic fluid. The dysmotility is typically transient, improving within a few months after birth. Although uncommon, gastroschisis may be associated with intestinal stenosis and vascular compromise or intestinal atresia, leading to short bowel syndrome. Treatment of both gastroschisis and omphalocele involves wrapping the bowel and securing it with plastic wrap immediately after birth until surgical closure of the abdominal wall can be performed).

D.Bladder exstrophy

E.Beckwith-Wiedemann syndrome

F.Ventricular septal defect

32. A 28-year-old primigravid woman comes to the emergency department because of a 12-hour history of lower abdominal pain and vaginal bleeding. She also had nausea and fatigue for the past 3 weeks. Her last menstrual period was 8 weeks ago. Prior to that, her menses occurred regularly at 30-day intervals and lasted for 4 days. There is no history of medical illness, and she takes no medications. Her temperature is 37°C (98.6°F), pulse is 95/min, and blood pressure is 100/70 mm Hg. Pelvic examination is painful and shows a uterus consistent in size with a 13-week gestation. A urine pregnancy test is positive. β-HCG level is 106,000 mIU/mL (N < 5 mIU/mL). Transvaginal ultrasonography shows unclear, amorphous fetal parts and a large placenta with multiple cystic spaces. Which of the following is the most likely cause of this patient's condition?

» Feedback

This embryo likely
has 69 chromosomes from fertilization by
two haploid sperm or fertilization by one diploid sperm.

A.Placenta implantation into myometrium

B.Malignant transformation of trophoblastic tissue

C.Trophoblastic proliferation with chorionic villi distention

(This patient likely has an incomplete hydatidiform mole, as evidenced by her clinical symptoms (abdominal pain, vaginal bleeding, nausea), uterine size (which is larger than expected for gestational age), markedly elevated β-HCG levels,
and ultrasound findings (cystic spaces within the placenta, amorphous fetal parts). Hydatidiform moles are characterized by abnormal proliferation of the trophoblastic tissue that surrounds edematous and distended chorionic villi. Unlike complete moles, incomplete moles may have some normal chorionic villi with evidence of fetal parts. Treatment for a hydatidiform mole consists of a D&C to remove the trophoblastic tissue and β-HCG level monitoring to ensure complete removal without malignant transformation).

D.Premature separation of the placenta from the uterine wall

E.Malpositioned placenta overlying the cervix

F.Embryonic death with cervical dilation

33. A 22-year-old primigravid woman at 41 weeks' gestation is admitted to the hospital in active labor. Pregnancy has been uncomplicated. She has asthma treated with theophylline and inhaled corticosteroids. She has had 2 surgeries in the past to repair multiple lower limb and pelvis fractures that were the result of a car accident. She is otherwise healthy. Her temperature is 37.2°C (99°F) and blood pressure is 108/70 mm Hg. Examination shows the cervix is 100% effaced and 10 cm dilated; the vertex is at -4 station, with the occiput in the anterior position. Uterine activity is measured at 275 MVUs. Maternal pushing occurs during the contractions. Fetal heart tracing is 166/min and reactive with no decelerations. Epidural anesthesia is initiated for pain relief. After 4 hours of pushing, the vertex is found to be at -4 station, with increasing strength and rate of uterine contractions; fetal heart tracing shows late decelerations. Which of the following is the most likely cause of this patient's prolonged labor?

» Feedback

This patient had adequate uterine contractions, but the fetal head failed to descend during the second stage of labor.

A.Inefficient maternal pushing

B.Epidural anesthesia

C.Insufficient uterine contraction

D.Muscular constriction of uterus

E.Fetal malposition

F.Shoulder dystocia

G.Cephalopelvic disproportion

(Failure of the fetus to descend further than -4 station despite adequate uterine contractions and pushing for over 4 hours suggests cephalopelvic disproportion. This patient's history of pelvic trauma and surgeries places her at high risk for pelvic deformities that could impede fetal descent through the birth canal. After 4 hours, she meets the criteria for a prolonged second stage of labor, and cesarean section is required for delivery of the fetus).

H.Deep transverse arrest

34. A 29-year-old woman, gravida 1, para 0, at 38 weeks' gestation comes to the emergency department for sudden leakage of clear fluid from her vagina. Her pregnancy has been uncomplicated. She has largely been compliant with her prenatal care but missed some appointments. She has a history of chronic hypertension. She drinks a glass of wine once per week. Current medications include labetalol, iron, and vitamin supplements. Her temperature is 37.9°C (100.2°F), pulse is 70/min, respirations are 18/min, and blood pressure is 128/82 mm Hg. Examination shows a soft and nontender abdomen on palpation. Speculum examination demonstrates clear fluid in the cervical canal. The fetal heart rate is reactive at 170/min with no decelerations. Tocometry shows no contractions. The vaginal fluid demonstrates a ferning pattern when placed onto a glass slide. Which of the following is the most likely cause of this patient's condition?

» Feedback

Arborization or ferning is indicative of the presence of amniotic fluid, confirming premature rupture of membranes (PROM).

A.Hypertension

B.Primiparity

C.Ascending infection

(Ascending infections of the genital tract are the most common identifiable risk factor for premature rupture of membranes (PROM). The local response to bacterial colonization or infection is associated with the release of inflammatory mediators which can weaken the fetal membranes. Other risk factors include smoking, previous PROM, and multiple pregnancies, which are absent in this patient.

D.Sexual intercourse during third trimester

E.β-blocker use

F.Alcohol use

G.Oligohydramnios

35. A 23-year-old woman, gravida 2, para 1, at 20 weeks of gestation comes to the physician for a routine prenatal exam. Her last pregnancy was unremarkable and she gave birth to a healthy rhesus (RhD) positive girl. Her past medical history is notable for a blood transfusion after a car accident with a complex femur fracture about 3 years ago. Her temperature is 37.2°C (99°F), pulse is 92/min, and blood pressure is 138/82 mm Hg. Examination shows that the uterus is at the umbilicus. Ultrasound examination reveals normal fetal heart rate, movement, and anatomy. Routine prenatal labs show the following:

Blood type	A Rh-
Leukocyte count	11,000/mm^3

Hemoglobin	12.5 g/dL
Platelet count	345,000/mm^3
Anti-D antibody screen	Negative
Rubella IgM	Negative
Rubella IgG	Negative
Varicella IgM	Negative
Varicella IgG	Positive
STD panel	Negative
Urine Protein	Trace
Cervical cytology	Normal

Which of the following is the best next step in management of this patient?

» Feedback

A Rh(D) negative mother who has previously given birth to a Rh(D) positive baby or who has otherwise been exposed to Rh(D) positive red blood cells is at risk for developing anti-D antibodies. Rh(D) positive fetuses of these mothers are in turn at risk for developing hemolytic disease of the fetus and newborn (HDFN). Therefore, prophylactic measures must be taken to protect the fetus of this particular patient.

A.Repeat antibody screening at 28 weeks. No anti-D immunoglobulin is needed unless the patient undergoes C-section.

B.Administer anti-D immunoglobulin now and repeat antibody screening shortly before delivery.

C.Repeat antibody screening at 28 weeks and at delivery. Administer anti-D immunoglobulin at 28 weeks and after delivery if the newborn is Rh(D) positive.

(Administration of anti-D immunoglobulin is used to prevent Rh(D) sensitization in the mother and to protect her future pregnancies from hemolytic disease of the newborn. However, since the anti-D immunoglobulins only work in unsensitized mothers, titers should be checked prior to administration of the medication. In the United States, federal guidelines recommend that all Rh(D) negative mothers who may be carrying potentially Rh(D) positive fetuses undergo Rh(D) blood typing and antibody testing at the first prenatal visit. If the first anti-D screen shows that the mother is unsensitized, guidelines recommend that she should undergo repeat screening between 24 and 28 weeks' gestation and at delivery, unless the father of the baby is Rh(D) negative. If the anti-D screen remains negative, anti-D immunoglobulin should be administered in the 28 week' gestation and within 72 hours following delivery of a Rh(D) positive child).

D.Repeat antibody screening at 28 weeks and administer anti-D immunoglobulin at 28 weeks. No further management is needed.

E.No further screening is needed. Administer anti-D immunoglobulin shortly after delivery

F.Repeat antibody screening at delivery. Administer anti-D immunoglobulin after delivery if the fetus is Rh(D) positive

G.No further management is needed

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37. A 33-year-old woman, gravida 2, para 1, at 26 weeks' gestation comes to the emergency department because of frequent contractions. The contractions are 40 seconds each, occurring every 2 minutes, and increasing in intensity. Her first child

was delivered by lower segment transverse cesarean section because of a nonreassuring fetal heart rate. Her current medications include folic acid and a multivitamin. Her temperature is 36.9°C (98.4°F), heart rate is 88/min, and blood pressure is 126/76 mm Hg. Contractions are felt on the abdomen. There is clear fluid in the vulva and the introitus. The cervix is dilated to 5 cm, 70% effaced, and station of the head is -2. A fetal ultrasound shows polyhydramnios, a median cleft lip, and fused thalami. The corpus callosum, 3rd ventricle, and lateral ventricles are absent. The spine shows no abnormalities and there is a four chamber heart. Which of the following is the most appropriate next step in management?

» Feedback

This fetus has alobar holoprosencephaly, a rare malformation where the cerebral hemispheres do not divide. This congenital anomaly will very likely lead to stillbirth

A.Perform cesarean delivery

B.Allow vaginal delivery

(Vaginal delivery is desirable in this case because it is generally safer for the mother than cesarean delivery (resulting in fewer postoperative complications and a shorter recovery period), even after a previous lower uterine segment cesarean delivery. However, some women in this situation may insist on cesarean delivery so they can avoid the experience of labor and giving birth to a stillborn fetus. Patients should be thoroughly counseled about the benefits and risks of vaginal versus cesarean delivery to ensure they are able to provide fully informed consent).

C.Initiate indomethacin therapy

D.Initiate misoprostol therapy

E.Perform dilation and evacuation

F.Initiate nifedipine therapy

38. A 25-year-old woman comes to the physician because of sadness that started 6 weeks after her 9-month-old daughter was born. Since then, she has not returned to work. Her daughter usually sleeps through the night, but the patient still has difficulty staying asleep. She is easily distracted from normal daily tasks. She used to enjoy cooking, but only orders delivery or take-out now. She says that she always feels too exhausted to do so and does not feel hungry much anyway. The pregnancy of the patient's child was complicated by gestational diabetes. The child was born at 36-weeks' gestation and has had no medical issues. The patient has no contact with the child's father. She is not sexually active. She does not smoke, drink alcohol, or use illicit drugs. She is 157 cm (5 ft 1 in) tall and weighs 47 kg (105 lb); BMI is 20 kg/m^2. Vital signs are within normal limits. She is alert and cooperative but makes little eye contact. Physical examination shows no abnormalities. Which of the following is the most likely diagnosis?

» Feedback

This patient might have also had difficulty making decisions for more than 2 weeks.

A.Persistent depressive disorder

B.Disruptive mood dysregulation disorder

C.Postpartum blues

D.Adjustment disorder

E.Depression with peripartum-onset

F.Major depressive disorder

(To meet the criteria for a major depressive disorder, a patient must have 5 or more symptoms of depression (SIGECAPS), one of which must be depressed mood or anhedonia, for at least 2 consecutive weeks. Symptoms must not be attributable to substance use or other medical condition. Bipolar disorder and psychosis must also be excluded. This patient meets the criteria because she has had 7.5 months of insomnia, anhedonia (used to enjoy cooking), exhaustion, poor concentration, and decreased appetite. She has never had an episode of hypomania or mania and her symptoms are not better explained by a psychotic disorder or substance use. The next best step in management for this patient is starting her on an antidepressant, such as an SSRI, and attempting lifestyle changes, possibly with the help of psychotherapy).

G.Normal behavior

39. A 34-year-old primigravid woman at 8 weeks' gestation comes to the emergency department 4 hours after the onset of vaginal bleeding and crampy lower abdominal pain. She has passed multiple large and small blood clots. The vaginal bleeding and pain have decreased since their onset. Her temperature is 37°C (98.6°F), pulse is 98/min, and blood pressure is 112/76 mm Hg. Pelvic examination shows mild vaginal bleeding and a closed cervical os. An ultrasound of the pelvis shows minimal fluid in the endometrial cavity and no gestational sac. Which of the following is the most likely diagnosis?

» Feedback

The ultrasound findings are critical for determining the correct answer here.

A.Missed abortion

B.Complete abortion

(Cramping and vaginal bleeding that improve after passing tissue (interpreted by this patient as blood clots) are typical in a complete abortion. A closed cervical os and an empty uterus support the diagnosis. Chromosomal abnormalities are the most common cause of spontaneous first trimester abortions).

C.Threatened abortion

D.Inevitable abortion

E.Incomplete abortion

F.Septic abortion

40. A 29-year-old primigravid woman at 35 weeks' gestation is admitted to the hospital in labor. She has no history of serious medical illness. She has had an uncomplicated pregnancy. Her last ultrasound at 22 weeks' gestation was normal. On admission, fetal heartbeats cannot be detected by fetal doppler monitor. Ultrasound shows decreased amniotic fluid levels and no evidence of fetal movement, respiration, or heart activity. The patient gives birth to a 2296 g (5 lb 1 oz) male infant. Physical examination shows no signs of life. There are no visible malformations. The placenta is unremarkable. Which of the following is the most appropriate next step in management?

» Feedback

This patient experienced a stillbirth. What is the most important component of the workup for fetal demise?

A.Perform karyotyping of amniotic fluid

B.Recommend autopsy of the infant

(An autopsy of the infant is recommended to all parents to investigate the cause of fetal demise and assess the risk for future pregnancies. Although the infant has no obvious malformations on exam, he may have internal organ malformations that could explain his cause of death. Congenital anomalies are one of the most common causes of fetal death in developed countries. Although they more commonly result in spontaneous abortion in the first trimester, fetal death may occur at any stage of pregnancy. Autopsy can also identify underlying infections, which account for ~ 2% of stillbirths).

C.Obtain photographs, x-ray imaging, and MRI

D.Obtain consent for fetal organ donation

E.Perform maternal antibody and thrombophilia testing

F.Obtain consent for parental genetic testing

G.Reassure parents of low risk of recurrent stillbirth

41. A 22-year-old woman, gravida 2, para 1, at 41 weeks' gestation is admitted to the hospital in active labor. Pregnancy has been uncomplicated. At the beginning of the second stage of labor, the cervix is 100% effaced and 10 cm dilated; the vertex is at -1 station. The fetal heart rate is reactive with no decelerations. As she pushes, it is noted that the fetal heart rate decreases, as seen on cardiotocography (CTG). Which of the following is the most likely cause of this finding?

This patient's CTG shows short-duration (< 3 min) decelerations (not < 100/min) that coincide with uterine contractions, characteristic of early decelerations.

A.Maternal hypotension

B.Placental insufficiency

C.Umbilical cord compression

D.Fetal myocardial depression

E.Fetal head compression

(Compression of the fetal head with each uterine contraction as it descends through the birth canal triggers an autonomic response that decreases the fetal heart rate (FHR). This decrease in FHR mirrors the uterine contractions, with the onset, nadir, and recovery of the deceleration coinciding respectively with the onset, peak, and end of a uterine contraction. This pattern is termed early decelerations. Early decelerations are a benign finding and not a sign of fetal distress).

42. A 39-year-old woman, gravida 3, para 2, at 32 weeks' gestation comes to the emergency department 1 hour after the sudden onset of severe abdominal pain and nausea. She has had one episode of nonbloody vomiting. Pregnancy has been uncomplicated, except for a blood pressure measurement of 150/90 mm Hg on her last prenatal visit. Her first

child was delivered vaginally; her second child was delivered by lower segment transverse cesarean section because of a nonreassuring fetal heart rate. She appears anxious and pale. Her temperature is 36.1°C (96°F), pulse is 115/min, and blood pressure is 92/65 mm Hg. Extremities are cool and clammy. Pelvic examination shows a rigid, tender uterus. The cervix is 30% effaced and 1 cm dilated; the vertex is at -1 station. The fetal heart rate is 100/min. Which of the following is the most likely diagnosis?

» Feedback

Hypertension during pregnancy is the most common cause of this patient's condition.

A.Ruptured uterus

B.Umbilical cord prolapse

C.Ruptured vasa previa

D.Chorioamnionitis

E.Abruptio placentae

(This patient presents with features of concealed placental abruption, a condition seen mainly in women with a history of hypertension, multiparity, and previous cesarean sections. Placental abruption is mainly a clinical diagnosis which presents with hypovolemic shock (maternal tachycardia, hypotension, and cool, clammy extremities), fetal distress (fetal bradycardia, in this case), and a rigid/woody, tender uterus on palpation. Vaginal bleeding is absent in concealed placental abruption since the blood forms a clot between the placenta and the uterus (retroplacental clot).

F.Placenta accreta

G.Placenta previa

H.Uterine atony

43. A clinical diagnosis of abruptio placentae is suspected. Which of the following is the most appropriate next step in the management of this patient?

» Feedback

The initial approach in the management of antepartum bleeding is the same for all underlying causes.

A.Administration of intravenous oxytocin

B.Administration of intravenous fluids

(Administration of IV fluids is the best initial step in the management of hemodynamically unstable patients with hypovolemic shock (tachycardia, hypotension, and cool, clammy extremities), regardless of the etiology, to prevent ischemic injury and multiorgan failure. This patient presents with placental abruption and requires simultaneous measures for an emergency C-section. Vaginal delivery is not imminent as evidenced by only 1 cm cervical dilation and -1 station of fetal vertex).

C.Emergency cesarean section

D.Vaginal delivery

E.Administration of intramuscular betamethasone

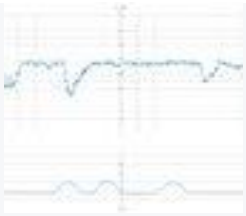
F.Transvaginal ultrasonography

G.Administration of intravenous tranexamic acid

H.Administration of magnesium sulfate

44. A 26-year-old primigravid woman at 39 weeks' gestation is admitted to the hospital in active labor. Pregnancy was complicated by mild oligohydramnios detected a week ago, which was managed with hydration. Her pulse is 92/min, respirations are 18/min, and blood pressure is 134/76 mm Hg. Pelvic examination shows 100%

cervical effacement and 10 cm cervical dilation; the vertex is at 0 station. Cardiotocography is shown. Which of the following is the most appropriate next step in management?



» Feedback

Decelerations occurring in ≥ 50 % of uterine contractions in a 20-minute time period are known as recurrent variable decelerations and are indicative of umbilical cord compression.

A. Elective cesarean section

B. Emergent cesarean section

C. Reassurance

D. Maternal repositioning and oxygen administration

(The recurrent variable decelerations seen in this infant are a sign of umbilical cord compression, a complication that is caused by the umbilical cord being compressed between the presenting part of the fetus and the pelvic wall. Common risk factors include abnormal fetal presentation and oligohydramnios. Initial management consists of maternal repositioning to ease compression of the umbilical cord, as well as administration of oxygen and IV fluids to improve blood flow to the fetus).

E. Administration of tocolytics

F. Elevation of the fetal head

G. Rapid amnioinfusion

45. A 19-year-old primigravid woman at 32 weeks' gestation comes to the physician because of a 2-day history of headache and blurred vision. She has had no prenatal care. She is diagnosed with pre-eclampsia. Amniocentesis shows a lecithin-sphingomyelin ratio of 0.7. If delivery is induced at this time, the newborn is most likely to show which of the following findings?

» Feedback

A low lecithin-sphingomyelin ratio in amniotic fluid (< 1.5) indicates fetal lung immaturity, placing the fetus at increased risk of neonatal respiratory distress syndrome. Other amniotic fluid markers of fetal lung immaturity include a low foam stability index (< 0.48) and a low surfactant-albumin ratio.

A. Decreased right ventricular afterload

B. Increased diffusion capacity for carbon monoxide

C. Decreased functional residual capacity

(Premature infants are at increased risk of neonatal respiratory distress syndrome (NRDS), which is characterized by low levels of surfactant (lecithin). As a result, alveolar surface tension is increased, causing alveolar atelectasis and decreased lung compliance. This alveolar atelectasis also increases work of breathing and decreases all lung volumes including functional residual capacity. Hypoxemia caused by NRDS would result in increased pulmonary vascular resistance and increased risk of persistent ductus arteriosus).

D. Increased lung compliance

E. Increased anatomical dead space

46. A 35-year-old woman, gravida 4, para 3, at 34 weeks' gestation comes to the physician for a prenatal visit. She feels well. She does not note any contractions or fluid from her vagina. Her third child was delivered spontaneously at 35 weeks' gestation; pregnancy and delivery of her other two children were uncomplicated. Vital signs are normal. The abdomen is nontender and no contractions are felt. Pelvic examination shows a uterus consistent in size with a 34-weeks' gestation. Ultrasonography shows the fetus in a breech presentation. The fetal heart rate is 148/min. Which of the following is the most appropriate next step in management?

» Feedback

Note that the patient is not in active labor and the gestational age is < 37 weeks.

A. Intravenous magnesium sulfate

B.Assisted vaginal breech delivery

C.Internal cephalic version

D.Cesarean section

E.External cephalic version

F.Observation

(The majority of breech presentations will resolve before 37 weeks' gestation, as the fetus is mobile with larger volumes of amniotic fluid. Since the patient is at 34 weeks' gestation, not in labor, and without fetal complications, there still is a chance for spontaneous conversion to the cephalic position. No intervention is required at this time).

G.Intramuscular dexamethasone

H.Intravenous penicillin

47. A 20-year-old primigravida woman comes to the physician in October for her first prenatal visit. She has delayed the visit because she wanted a “natural birth” but was recently convinced to get a checkup after feeling more tired than usual. She feels well. Menarche was at the age of 12 years and menses used to occur at regular 28-day intervals and last 3–7 days. The patient emigrated from Mexico 2 years ago. Her immunization records are unavailable. Pelvic examination shows a uterus consistent in size with a 28-week gestation. Laboratory studies show:

Hemoglobin	12.4 g/dL
Leukocyte count	8,000/mm^3
Blood group	B negative
Glucose	88 mg/dL
Creatinine	1.1 mg/dL

TSH	3.8 µU/mL
Rapid plasma reagin	negative
HIV antibody	negative
Hepatitis B surface antigen	negative

Urinalysis shows no abnormalities. Urine culture is negative. Chlamydia and gonorrhea testing are negative. A Pap smear is normal. Administration of which of the following vaccines is most appropriate at this time?

» Feedback

Live vaccinations are contraindicated during pregnancy.

A.Influenza and hepatitis B

B.Tdap and influenza

(All pregnant women should receive a single dose of Tdap between the 27th and 36th week of pregnancy. Tdap vaccine protects the mother from puerperal tetanus and the neonate from pertussis, diphtheria, and neonatal tetanus. The injectable form of the influenza vaccine is also indicated in pregnant women because an influenza infection during pregnancy is associated with more severe infection (e.g., pneumonia) and a higher risk of both preterm labor and fetal defects. The influenza vaccine should ideally be administered by the end of October (i.e., prior to the onset of the flu season, which lasts from October until May) and protects the mother and the neonate from influenza infection for up to several months after the delivery).

C.Tdap and MMR

D.Varicella and Tdap

E.Haemophilus influenzae B and HPV

F.Tdap and HPV

G.Varicella and influenza

H.Hepatitis B and MMR

I.MMR, Haemophilus influenzae B, and varicella

J.Influenza only

K.Varicella and hepatitis B

L.H. influenzae B and influenza

48. Two hours after delivery, a 1900-g (4-lb 3-oz) female newborn develops respiratory distress. She was born at 32 weeks' gestation. Pregnancy was complicated by pregnancy-induced hypertension. Her temperature is 36.8°C (98.2°F), pulse is 140/min and respirations are 64/min. Examination shows bluish extremities. Grunting and moderate subcostal retractions are present. There are decreased breath sounds bilaterally on auscultation. An x-ray of the chest shows reduced lung volume and diffuse reticulogranular densities. Supplemental oxygen is administered. Which of the following is the most appropriate next best step in management?

» Feedback

The development of dyspnea, grunting, subcostal retraction in a low birth weight preterm neonate with decreased breath sounds is suggestive of neonatal respiratory distress syndrome. The x-ray with diffuse reticulogranular densities confirms the diagnosis.

A.Nitric oxide therapy

B.Corticosteroid therapy

C.Endotracheal intubation

D.Partial exchange transfusion

E.Continous positive airway pressure ventilation

(The first step in management of neonatal respiratory distress syndrome is nasal CPAP to provide positive end-expiratory pressure. This neonate's lungs are immature without sufficient surfactant production, which causes an increased surface tension in the alveolar sacs that results in alveolar collapse, atelectasis, and ventilation-perfusion mismatch. PEEP helps prevent alveolar collapse by providing pressure at the end of expiration when alveoli are most prone to collapse. After initiation of CPAP, an ABG should be obtained to assess the effectiveness of this ventilatory method. If FiO2 > 0.4 or pH < 7.25, then intubation and surfactant therapy is warranted. The younger the gestational age, the increased risk for CPAP failure and worse outcomes).

F.Ampicillin and gentamicin therapy

G.Surfactant therapy

49. A 36-year-old woman, gravida 2, para 1, at 26 weeks' gestation comes to the emergency department because of a gush of clear fluid from her vagina that occurred 1 hour prior. She reports painful pelvic cramping at regular 5-minute intervals. She has missed most of her prenatal care visit because of financial problems from her recent divorce. Her first child was delivered vaginally at 27 weeks' gestation due to spontaneous preterm labor. She has smoked one pack of cigarettes daily for 15 years but has reduced her intake to 2–3 cigarettes per day since finding out she was pregnant. She continues to use cocaine once a week. Vital signs are within normal limits. Sterile speculum examination shows fluid pooling in the vagina, and nitrazine paper testing confirms the presence of amniotic fluid. Which of the following puts her at highest risk of preterm delivery?

» Feedback

This patient presents with several risk factors for preterm delivery; however, one of them is particularly strong, increasing the risk by 6-fold.

A.Low socioeconomic status

B.Lack of prenatal care

C.Smoking during pregnancy

D.Substance abuse during pregnancy

E.Psychosocial stress during pregnancy

F.Advanced maternal age

G.History of spontaneous preterm birth

(This patient presents with preterm premature rupture of membranes and possibly preterm labor (suggested by painful pelvic cramping at regular 5-minute intervals), which are both concerning for imminent preterm delivery. A history of spontaneous preterm birth (PTB) is the strongest predisposing factor for recurrence. The risk increases with the number of previous PTBs and decreases with the number of term deliveries between the PTB and the current pregnancy. The timing of the recurrent PTB is often similar to the previous one(s). This patient's first child was delivered at 27 weeks' gestation, and she does not have a history of a term delivery since then. Therefore, she is at increased risk for preterm delivery during this pregnancy, especially since the fetus is almost the same gestational age).

50. A 30-year-old woman, gravida 2, para 1, at 38 weeks' gestation comes to the hospital for regular, painful contractions that have been increasing

in frequency. Her pregnancy has been complicated by gestational diabetes treated with insulin. Pelvic examination shows the cervix is 50% effaced and 4 cm dilated; the vertex is at -1 station. Ultrasonography shows no abnormalities. A tocometer and Doppler fetal heart monitor are placed on the patient's abdomen. The fetal heart rate monitoring strip shows a baseline heart rate of 145/min with a variability of ≥ 15/min. Within a 20-minute recording, there are 7 uterine contractions, 4 accelerations, and 3 decelerations that have a nadir occurring within half a minute. The decelerations occur at differing intervals relative to the contractions. Which of the following is the most appropriate next step in the management of this patient?

» Feedback

This fetal heart rate tracing shows intermittent variable decelerations, which are the most common heart rate tracing abnormality seen during labor.

A.Routine monitoring

(Intermittent variable decelerations are not associated with worse perinatal outcomes, and therefore intervention is not required at this time. Continued monitoring is warranted to look for the development of recurrent variable decelerations or late decelerations, which can signal impending fetal acidemia).

B.Vibroacoustic stimulation

C.Amnioinfusion

D.Placement of fetal scalp electrode

E.Emergent cesarean delivery

F.Administer tocolytics

51. A 30-year-old woman, gravida 2, para 1, at 12 weeks' gestation comes to the physician for a prenatal visit. She feels well. Pregnancy and vaginal delivery of her first child were uncomplicated. Five years ago, she was diagnosed with hypertension but reports that she has been noncompliant with her hypertension regimen. The patient does not smoke or drink alcohol. She does not use illicit drugs. Medications include methyldopa, folic acid, and a multivitamin. Her temperature is 37°C (98.6°F), pulse is 80/min, and blood pressure is 145/90 mm Hg. Physical examination shows no abnormalities. Laboratory studies, including serum glucose level, and thyroid-stimulating hormone concentration, are within normal limits. The patient is at increased risk of developing which of the following complications?

» Feedback

Think about complications associated with high blood pressure during pregnancy.

A.Uterine rupture

B.Spontaneous abortion

C.Polyhydramnios

D.Abruptio placentae

(Maternal hypertension, whether chronic or pregnancy-induced, is a strong predisposing factor for the development of abruptio placentae. Although the exact

underlying mechanism for placental abruption is unknown, it is thought to result from a complication of a chronic placental disorder. Maternal hypertension is also known to cause functional and morphological placental changes, which additionally increases the risk of chronic placental insufficiency, that in turn, can cause oligohydramnios and intrauterine growth restriction of the fetus)

E.Placenta previa

52. A 29-year-old woman, gravida 3, para 2, at 24 weeks' gestation comes to the emergency department because of vaginal bleeding and mild pelvic pain for 2 hours. Her current pregnancy was achieved by means of in vitro fertilization due to azoospermia in her partner. Prenatal course has been uncomplicated with regular prenatal visits. After a period of having avoided sexual intercourse during her early pregnancy, she resumed sexual activity with her partner at week 22 of gestation. Her first child was delivered by lower segment transverse cesarean section because of a nonreassuring fetal heart rate; her other child was delivered vaginally. She has had abnormal Pap smears due to HPV in the past. Her pulse is 82/min, respirations are 18/min, and blood pressure is 134/76 mm Hg. The abdomen is nontender, the uterus is consistent with 24 weeks' gestation, and the fetus is in a cephalic presentation. There are traces of blood on the vulva and the introitus. Speculum examination shows a tender, bruised cervix, with a closed cervical os. Fetal heart rate is 166/min and CTG shows a reassuring fetal heart rate tracing. Ultrasound shows a uniformly echogenic placenta located at the fundal end of the posterior uterine wall. What is the most likely cause of this patient's antepartum bleeding?

» Feedback

This patient's recent resumption of sexual activity and cervical findings on speculum exam provide a clue to the diagnosis.

A.Pedunculated cervical growth

B.Inflammation of the cervix

C.Cervical trauma

(This patient has likely suffered cervical trauma, secondary to intercourse, as evidenced by her bruised and tender cervix without evidence of active bleeding. The cervix in pregnancy can become hypervascular, which increases the incidence of postcoital bleeding).

D.Placenta covers the internal cervical os

E.Fetal vessels overlying cervical os

F.Premature separation of the placenta

53. A 27-year-old woman, gravida 3, para 2, at 41 weeks' gestation is admitted to the hospital in active labor. Her pregnancy has been uncomplicated. Both of her prior children were delivered by vaginal birth. She has a history of asthma. Current medications include iron and vitamin supplements. After a prolonged labor, she undergoes vaginal delivery. Shortly afterwards, she begins to have heavy vaginal bleeding with clots.

Her temperature is 37.2°C (98.9°F), pulse is 90/min, respirations are 17/min, and blood pressure is 130/72 mm Hg. Examination shows a soft, enlarged, and boggy uterus on palpation. Laboratory studies show:

Hemoglobin	10.8 g/dL
Hematocrit	32.3%
Leukocyte Count	9,000/mm^3
Platelet Count	140,000/mm^3
Prothrombin time	14 seconds
Partial thromboplastin time	38 seconds

Her bleeding continues despite bimanual uterine massage and administration of oxytocin. Which of the following is the most appropriate next step in management?

» Feedback

Postpartum hemorrhage with a soft, boggy uterus on examination is suggestive of uterine atony, especially in a multiparous woman delivery late in pregnancy.

A.Perform hysterectomy

B.Perform uterine artery ligation

C.Perform curettage

D.Administer carboprost tromethamine

E.Perform uterine tamponade

F.Tranfuse blood

G.Administer tranexamic acid

(Uterine atony is the most common cause of postpartum hemorrhage (PPH) and can be managed with bimanual uterine massage in conjunction with prompt administration of the uterine stimulant (uterotonic) oxytocin and tranexamic acid. Tranexamic acid should be given as soon as possible after bleeding onset to stop fibrinolysis reduce mortality. Tranexamic acid is contraindicated in patients with subarachnoid hemorrhage. Invasive interventions (e.g., hysterectomy) usually become necessary if conservative therapy shows no effect within 30 minutes).

54.A 29-year-old, gravida 1 para 0, at 10 weeks' gestation comes to the physician for progressively worsening emesis, nausea, and a 2-kg (4.7-lb) weight loss over the past 2 weeks. The most recent bouts of vomiting occur around 3–4 times a day, and she is stressed that she had to take a sick leave from work the last 2 days. She is currently taking ginger and vitamin B6 with limited relief. Her pulse is 80/min, blood pressure is 100/60 mmHg, and respiratory rate is 13/min. Orthostatic vital signs are within normal limits. The patient is alert and oriented. Her abdomen is soft and nontender. Urinalysis shows no abnormalities. Her hematocrit is 40%. Venous blood gas shows:

pH	7.43
pO_2	42 mmHg
pCO_2	54 mmHg
HCO_3^-	31 mEq/L
SO_2	80%

In addition to oral fluid resuscitation, which of the following is the most appropriate next step in management?

» Feedback

(The lack of clinical signs of dehydration (e.g., severe weight loss, abnormal orthostatic vital signs) indicate a course of uncomplicated nausea and vomiting. Still, further steps of management should be offered that provides adequate symptom relief).

A.IV fluid resuscitation

B.Administration of supplemental oxygen

C.Scheduled meal times

D.Monitoring and stress counseling

E.PO bismuth subsalicylate

F.Trial of metoclopramide

G.Discontinuation of ginger and vitamin B6

H.Addition of doxylamine

(If vitamin B6 (pyridoxine) alone does not improve nausea and vomiting of pregnancy, doxylamine should be added for symptom relief. Also, dietary changes (e.g., avoidance of spicy, odorous, high-fat, or acidic foods) and avoidance of triggers, such as stuffy, noisy rooms, and odors, may improve nausea. If vomiting does not resolve after treatment with pyridoxine and doxylamine, antiemetics such as dimenhydrinate or diphenhydramine should be administered).

57. A 30-year-old woman, gravida 1, para 0, at 40 weeks' gestation is admitted to the hospital in active labor. Pregnancy was complicated by iron deficiency anemia treated with iron supplements. At the beginning of the first stage of labor, there are coordinated, regular, rhythmic contractions of high intensity that occur approximately every 10 minutes. Four hours later, the cervix is 100% effaced and 10 cm dilated; the vertex is at -1 station. Over the next two hours, there is minimal change in in fetal descent; vertex is still at -1 station. Fetal birth weight is estimated at the 75th percentile. The fetal heart rate is 145/min and is reactive with no decelerations. Contractions occurs approximately every 2 minutes with adequate pressure. Epidural anesthesia was not given, as the patient is coping well with pain. Which of the following is the most appropriate next step in management?

» Feedback

The second stage of labor begins once the cervix is completely dilated and ends with the birth of the infant. This stage lasts < 2 hours in multiparous women and is typically longer in primiparous women.

A.Administration of terbutaline

B.Cesarean section

C.Vacuum-assisted delivery

D.Observation for another hour

(This nulliparous woman has had full cervical dilation and effacement for 2 hours (second stage of labor), but the baby remains at -1 station. On average, labor progresses slower during the first delivery, and the second stage may take up to 3 hours in this patient. The fetal monitor shows no abnormalities, the patient's contractions are adequate, and she is tolerating the pain well, making observation the best option for this patient).

E.Forceps delivery

F.Epidural anesthesia

MCQs gynecology and breast deseases

1. A 27-year-old woman comes to the physician for the evaluation of infertility. She has been unable to conceive for the past 2 years. Menses occur at 45 to 80-day intervals. She is 168 cm (5 ft 6 in) tall and weighs 77 kg (170 lb); BMI is 26.6 kg/m^2. Physical examination shows facial acne and pigmented hair on the upper lip. Serum studies show elevated levels of testosterone and an LH:FSH ratio of 4:1. Treatment with the appropriate drug for this patient's infertility is begun. Which of the following is the primary mechanism of action of this drug?

» Feedback

This patient's obesity, oligomenorrhea, clinical and laboratory signs of hyperandrogenemia (facial acne, hirsutism, elevated serum testosterone), and the LH:FSH ratio > 2:1 suggests that her infertility is due to polycystic ovary syndrome (PCOS). A first-line treatment for women with PCOS pursuing pregnancy is clomiphene.

A.Activation of pituitary dopamine receptors

B.Inhibition of endometrial progesterone receptors

C.Activation of ovarian luteinizing hormone receptors

D.Activation of granulosa cell aromatase

E.Inhibition of hypothalamic estrogen receptors

(Inhibition of hypothalamic estrogen receptors is the mechanism of action of clomiphene, a first-line drug for ovulation induction in women with infertility from PCOS. Clomiphene is a selective estrogen receptor modulator that binds to the hypothalamic estrogen receptors, thereby blocking the negative feedback effect of circulating endogenous estradiol. This results in an increase in the pulsatile secretion of GnRH and subsequent increase in both FSH and LH, stimulating ovulation).

2. A 27-year-old nulligravid woman comes to the physician for evaluation of fertility. She has been unable to conceive for one year despite regular intercourse with her husband 1–2 times per week. Recent analysis of her husband's semen showed a normal sperm count. Two years ago, she had an episode of a febrile illness with lower abdominal pain, which resolved without treatment. Menarche was at age 12 and menses occur at regular 28-day intervals and last 4 to 5 days. Before her marriage, she was sexually active with 4 male partners and used a combined oral contraceptive pill with estrogen and progesterone consistently, as well as barrier protection inconsistently. One year ago, she stopped using the oral contraceptive pill in order to be able to conceive. She is 165 cm (5 ft 5 in) tall and weighs 84 kg (185 lb); BMI is 30.8 kg/m^2.

Physical examination shows no abnormalities. Which of the following is the most likely cause of this patient's infertility?

» Feedback

This woman, who previously engaged in high-risk sexual behavior, had an episode of lower abdominal pain and febrile illness, which might suggest pelvic inflammatory disease (PID)

A.Polycystic ovary syndrome

B.Long-term use of the oral contraceptive pill

C.Endometriosis

D.Primary ovarian insufficiency

E.Tubal scarring

(Infertility that occurs following PID is a result of tubal scarring (due to salpingitis) with consequent loss of ciliary action and tubal occlusion and/or a tubo-ovarian abscess. The risk of infertility increases with the number of episodes of PID and is around 12%, 25%, and 50% after one, two, and three attacks of PID, respectively. This patient would need further testing to evaluate her fallopian tubes and the degree of damage to them (e.g., hysterosalpingogram). She may also require either surgery or in vitro fertilization to become fertile again).

F.Cervical insufficiency

3. A 15-year-old girl comes to the physician because of a 2-week history of genital lesions. She has no history of serious illness. She is sexually active with 2 male partners and uses condoms inconsistently. Vital signs are within normal limits. Pelvic examination shows multiple hyperkeratotic exophytic papules over the vulva. The lesions turn white on application of 3% acetic acid. Which of the following is most likely to have prevented this patient's condition?

» Feedback

In a sexually active adolescent, the presence of multiple hyperkeratotic exophytic papules indicates HP V infection.

A. Condoms

B.Anti-HIV prophylaxis

C.Spermicidal foam

D.Famciclovir therapy

E.Vaccination

(This patient presents with condylomata acuminata, which are genital warts caused by the human papilloma virus. Anti-HPV vaccines are recommended by the CDC starting at the age of 11–12 years. The tetravalent and 9-valent vaccines provide ~ 99% coverage against the types of HPV most commonly implicated in genital warts (types 6, 11) and also in cervical cancer (especially types 16, 18) for at least 10 years after vaccination (likely longer, but data is only available for that time period). Considering the sexual history of this patient, one of these vaccines would have most likely prevented this condition).

4. A 22-year-old woman comes to the physician because of a 1-month history of a light greenish, milky discharge from both breasts. There is no mastalgia. She has hypothyroidism and migraine headaches. Her mother has breast cancer and is currently undergoing chemotherapy. Menses occur at regular 28-day intervals with moderate flow; her last menstrual

period was 1 week ago. Current medications include levothyroxine and propranolol. She appears anxious. Her temperature is 37.1°C (98.78F), pulse is 82/min, and blood pressure is 116/72 mm Hg. The lungs are clear to auscultation. Breast examination is unremarkable. Pelvic examination shows a normal vagina and cervix. Serum studies show:

Thyroid-stimulating hormone	3.5 µU/mL
Progesterone	0.7 ng/mL (Follicular phase: N < 3)
Prolactin	18 ng/mL
Follicle-stimulating hormone	20 mIU/mL

A urine pregnancy test is negative. Which of the following is the most appropriate next step in management?

» Feedback

Green, bilateral (!) discharge in a 22-year-old woman without any other abnormal findings is highly suggestive of a physiological discharge

A. Galactography of both breasts

B. Mammogram of both breasts

C. MRI of the head

D. Nipple discharge cytology

E. Ultrasound of both breasts

F. Reassurance and recommend avoidance of nipple stimulation

(Given this patient's presentation and normal prolactin, she most likely has physiological nipple discharge due to nipple stimulation, a rather common condition in women of reproductive age. The discharge is normally milky but can appear greenish or yellowish. Reassurance and having the patient avoid nipple stimulation would be the recommended intervention).

5. A 15-year-old girl is brought to the physician by her mother because of lower abdominal pain for the past 5 days. The pain is constant and she describes it as 7 out of 10 in intensity. Over the past 7 months, she has had multiple similar episodes of abdominal pain, each lasting for 4–5 days. She has not yet attained menarche. Examination shows suprapubic tenderness to palpation. Pubic hair and breast development are Tanner stage 4. Examination of the external genitalia shows no abnormalities. Pelvic examination shows bulging, bluish vaginal tissue. Rectal examination shows an anterior tender mass. Which of the following is the most effective intervention for this patient's condition?

» Feedback

(Cyclical lower abdominal pain in a 15-year-old girl with normal secondary sexual characteristics who has not attained menarche and has an anterior pelvic mass, is indicative of either an imperforate hymen or a transverse vaginal septum. Bulging, bluish vaginal tissue indicates hematocolpos caused by the former).

A. Perform exploratory laparoscopy

B. Administer oral contraceptives pills

C. Perform vaginal dilation

D. Administer ibuprofen

E.Perform hymenotomy

(Hymenotomy is the best definitive management for an imperforate hymen. This surgical intervention involves an incision at the hymen base and excision of the obstructing tissue. Menstrual products can then be drained from the upper vaginal canal and uterus. Patients' menses usually normalize and menstrual pain decreases after this procedure).

F.Administer gonadotropin-releasing hormone agonist therapy

6. A 28-year-old woman comes to the emergency department for a rash that began 3 days ago. She has low-grade fever and muscle aches. She has no history of serious illness and takes no medications. She has had 5 male sexual partners over the past year and uses condoms inconsistently. Her temperature is 38.1°C (100.6° F), pulse is 85/min, and blood pressure is 126/89 mm Hg. Examination shows a diffuse maculopapular rash that includes the palms and soles. The remainder of the examination shows no abnormalities. A venereal disease research laboratory (VDRL) test is positive. Which of the following is the next appropriate step in management?

» Feedback

This patient presents with a low-grade fever, myalgias, diffuse maculopapular rash involving the palms and soles, and a positive VDRL test, all of which suggest secondary syphilis due to an infection with *Treponema pallidum*. Following a positive VDRL test, confirmation is required to establish the definite diagnosis.

A.Rapid plasma reagin test

B.Treponemal culture

C.Intravenous penicillin G

D.Dark field microscopy

E.Intramuscular penicillin G

F.Oral doxycycline

G.Fluorescent treponemal antibody absorption test

(Fluorescent treponemal antibody absorption test (FTA-ABS) detects specific antibodies to treponemal antigens. It is a confirmatory test that is performed following a positive or equivocal nontreponemal test such as the venereal disease research laboratory (VDRL) or rapid plasma reagin (RPR) test. Because treponema antibody tests usually remain positive regardless of treatment or disease activity, positive FTA-ABS indicates either active syphilis infection or persistent antibodies from a prior infection. FTA-ABS tests become positive 2–3 weeks after infection and have a very high positive predictive value. An alternative test to confirm a syphilis infection is *Treponema pallidum* particle agglutination (TPPA). If a specimen can be taken from a chancre (in primary syphilis) or condylomata lata (in secondary syphilis), dark field microscopy or PCR allows direct detection of the pathogen).

7. A 45-year-old woman comes to the physician for the evaluation of a right breast mass that she noticed 3 weeks ago. It has rapidly increased in size during this period. She does not have pain. Vital signs are within normal limits. Examination shows large dense breasts; a 5-cm, nontender, multinodular mass is palpated in the right outer quadrant of the right breast. There are no changes in the skin or nipple. There is no palpable cervical or

axillary adenopathy. Mammography shows a smooth polylobulated mass. Biopsy of the mass shows papillary projections of epithelial-lined stroma with hyperplasia and atypia. Which of the following is the most likely diagnosis?

» Feedback

This 45-year-old woman has a rapidly growing 5-cm breast mass without any mastalgia, skin/nipple changes, or lymphadenopathy, indicating a benign condition. The mammogram also suggests a benign lesion (no spiculations or microcalcifications), and the biopsy confirms the diagnosis, showing a leaf-like microarchitecture.

A. Intraductal papilloma

B. Phyllodes tumor

(A large (> 3 cm), rapidly growing (i.e., progression over days-weeks) breast mass raises suspicion for phyllodes tumor. Phyllodes tumors are rare (< 1% of all breast tumors) and typically present as a painless breast lump, which can make differentiation from more common benign breast tumors (e.g., fibroadenoma) difficult. Phyllodes tumors may even appear similar to fibroadenoma on imaging. Therefore, biopsy is required to definitively diagnose phyllodes tumor; biopsy shows a leaf-like appearance under the microscope, for which the tumor is named).

C. Paget disease of the breast

D. Fibroadenoma

E. Fibrocystic disease of the breast

F. Invasive ductal carcinoma

G. Invasive lobular carcinoma

8. A 17-year-old girl is brought to the physician by her mother for the evaluation of irregular menstrual bleeding. Menses have occurred at 60- to 90-day intervals since menarche at the age of 12 years. Her last menstrual period was 4 weeks ago. She is sexually active with one male partner, and they use condoms consistently. She reports that she currently has no desire to have children. She is 165 cm (5 ft 5 in) tall and weighs 85 kg (187 lb); BMI is 31 kg/m^2. Examination shows scattered pustules on the forehead and oily skin. There is coarse hair on the chin and upper lip. Fingerstick blood glucose concentration is 190 mg/dL. A urine pregnancy test is negative. Which of the following is the most appropriate pharmacotherapy?

» Feedback

This patient presents with oligomenorrhea and symptoms of hyperandrogenism (hirsutism, acne vulgaris). These features together with obesity and elevated blood glucose levels suggest polycystic ovary syndrome (PCOS).

A. Letrozole

B. Danazol

C. Leuprolide

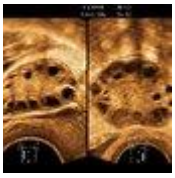
D. Clomiphene citrate

E. Metformin

F. Combination oral contraceptives

(A combination oral contraceptive (OCPs) containing ethinylestradiol and progestin is the first-line pharmacotherapy for PCOS.
Combination OCPs help regulate the menstrual cycle. Furthermore, because they have antiandrogenic effects, they can relieve symptoms of hyperandrogenism. In addition, progestin decreases the risk of endometrial hyperplasia and cancer, which are possible complications of PCOS (due to the increased levels

of estrogen from aromatization of androgens). Besides pharmacotherapy, weight loss is the mainstay of treatment, as obesity and the associated insulin resistance play an important role in the pathophysiology of PCOS).



9. A 36-year-old woman comes to the physician because of growths around her anus that developed over the past 4 weeks. They are not painful and she does not have blood in her stool. She is sexually active with two male partners and uses condoms inconsistently. She appears healthy. Vital signs are within normal limits. Examination shows nontender, irregular, hyperkeratotic sessile lesions in the perianal area around 4–7 mm in diameter. There is no lymphadenopathy. The application of a dilute solution of acetic acid turns the lesions white. Which of the following is the most likely cause of the lesions?

» Feedback

The cauliflower-like growths in the perianal area may be treated with cryotherapy or, in cases, curettage, laser surgery, or electrocoagulation.

A.Poxvirus

B.Treponema pallidum

C.Malignant transformation

D.Benign fibroepithelial growth

E.Human papilloma virus

(HPV strains 6 and 11 cause 90% of genital warts, or condylomata acuminata. These lesions are cauliflower-like in their appearance, with a flat, papular, or pedunculated shape and are commonly found on the mucosa or along the epithelium of the anogenital tract. They are usually asymptomatic but may be painful or pruritic in some cases. Application of 3–5% acetic acid will turn the lesion white, though this test has poor specificity for warts since polyps or leukoplakia can also appear white. Risk factors for HPV include multiple sexual partners and unprotected sexual intercourse).

10. A 17-year-old girl comes to the physician for an annual health maintenance examination. She feels well. She has no history of serious illness and her only medication is an oral contraceptive. Her mother was diagnosed with breast cancer at the age of 42 years. She is currently sexually active with 1 male partner and uses condoms inconsistently. Her immunizations are up-to-date. Her vital signs are within normal limits. Physical and pelvic examinations shows no abnormalities. An HIV test is negative. Which of the following is the most appropriate next step in management?

» Feedback

The United States Preventive Task force recommends chlamydia and gonorrhea screening in sexually active women age 25 years and younger and in older women who are at increased risk of infection

A. Complete blood count

B.Nucleic acid amplification testing

(Nucleic acid amplification testing (NAAT) is highly sensitive and specific for *C. trachomatis* and *N. gonorrhoeae* and is thus the gold standard for screening for these infections.
Genital chlamydia and gonorrhea may be asymptomatic but, if left untreated, can cause complications (e.g., infertility, pelvic inflammatory disease). Since the patient in this vignette is sexually active, it is recommended that she be screened for *C. trachomatis* and *N. gonorrhoeae*, even if she is asymptomatic).

C.PAP smear

D.Human papilloma virus vaccination

E.Rapid plasma reagin test

F.Herpes simplex virus 2 serology

G.Mammogram

11. A 57-year-old nulliparous woman comes to the physician 2 weeks after noticing a lump in her right breast. Her last mammogram was performed 4 years ago and showed no abnormalities. Menopause began 2 years ago, during which time the patient was prescribed hormone replacement therapy for severe hot flashes and vaginal dryness. Vital signs are within normal limits. Examination of the right breast shows a firm, nontender mass close to the nipple. There are no changes in the skin or nipple, and there is no palpable axillary adenopathy. The abdomen is soft and nontender; there is no organomegaly. Mammography shows a suspicious 2-cm mass adjacent to the nipple. Which of the following is the most appropriate next step in management?

» Feedback

The patient has a multiple risk factors for breast cancer, including nulliparity, late menopause, and hormone replacement therapy. What is the most appropriate next step in a patient with a high risk of breast cancer and suspicious findings on mammography?

A.Fine needle aspiration

B.Excisional biopsy

C.Bone scan

D.Measurement of serum CA 15–3

E.Mastectomy

F.Core needle biopsy

(In a patient with a palpable breast lump and suspicious findings on mammography, an ultrasound-guided core needle biopsy is the next best step to evaluate the extent of the tumor, confirm the diagnosis of breast cancer, and describe the histology of the tumor and its receptor profile. This test is essential for determining the most appropriate next step).

12. A 53-year-old woman comes to the physician for evaluation of a 5-month history of painful sexual intercourse. She also reports vaginal dryness and occasional spotting. She has no pain with urination. She has hypertension, type 2 diabetes mellitus, and hypercholesterolemia. Her last menstrual period was 8 months ago. She is sexually active with her husband and has two children. Current medications include ramipril, metformin, atorvastatin, and aspirin. Her temperature is 37°C (98.6°F), pulse is 85/min, and blood pressure is 140/82 mm Hg. Pelvic examination

shows decreasing labial fat pad, receding pubic hair, and clear vaginal discharge. Which of the following is the most appropriate pharmacotherapy?

» Feedback

Receding pubic hair and a decreasing labial fat pad are typical in atrophic vaginitis, which is most commonly caused by decreased estrogen levels after menopause.

A.Oral fluconazole

B.Topical nystatin

C.Topical estrogen cream

(Topical estrogen creams are an effective way to alleviate symptoms of atrophic vaginitis. Moisturizers and lubricants are an effective alternative for mild cases and can also be used as an adjunct to hormone treatment).

D.Oral metronidazole

E.Topical corticosteroids

13.A 61-year-old nulliparous woman comes to the physician for a follow-up examination. Her last Pap smear 3 years ago showed atypical squamous cells of undetermined significance. HPV testing was negative at that time. On questioning, she has had fatigue and an increasein abdominal girth despite a 5-kg (11.0-lb) weight loss over the past 6 months. She has gastroesophageal reflux disease and Hashimoto's thyroiditis. Menarche was at the age of 10 years and her last menstrual period was 2 years ago. Current medications include omeprazole and levothyroxine. Abdominal examination shows shifting dullness. There is tenderness to palpation of the right lower quadrant but no guarding or rebound. Bimanual palpation shows a small uterus and a right adnexal mass. Further evaluation of this patient is most likely to show which of the following findings?

» Feedback

This patient presents with fatigue, ascites, weight loss, and a right adnexal mass, all of which are suggestive of a diagnosis of ovarian cancer. Which of the following is associated with ovarian cancer?

A.Proliferation of endometrial glands

B.Elevated serum CA-125 level

(An elevated CA-125 is highly suspicious for ovarian malignancy in a post-menopausal woman with an adnexal mass. Although serum CA-125 levels are not used as a screening modality in asymptomatic women at average risk for ovarian cancer given its limited sensitivity and specificity, this patient is symptomatic and has several risk factors for ovarian cancer, such as nulliparity, early menarche, and late menopause. Given her symptoms and her risk factors, it is very likely that this patient's CA-125 is elevated).

C.Elevated serum beta-hCG level

D.Prolonged prothrombin time

E.Chocolate cyst of the right ovary

F.Cervical dysplasia on Pap smear

14. A 16-year-old girl comes to the physician with a 4-day history of painful vulvar lesions, generalized fatigue, and malaise. During this period, she has also had dysuria. She is sexually active with 2 male partners

and uses condoms inconsistently. Her immunizations are up-to-date; she completed the vaccination course for human papilloma virus 2 months ago. Her temperature is 38.1°C (100.6°F), pulse is 100/min, respirations are 12/min, and blood pressure is 110/70 mm Hg. Pelvic examination shows several shallow ulcers on an erythematous base over the labia majora and minora. There is bilateral, tender inguinal lymphadenopathy. Which of the following is the most appropriate treatment for this patient's condition?

» Feedback

The presence of several shallow ulcers on an erythematous base and bilateral tender inguinal lymphadenopathy in an individual with high-risk sexual behavior is indicative of genital herpes.

A.cyclovir therapy

(Acyclovir is the treatment for genital herpes, which is caused by herpes simplex virus (typically type 2). If initial therapy is unsuccessful (due to resistance), topical imiquimod may be considered. (See table in "Genital lesions" for differentials.)

B.Curettage

C.Azithromycin therapy

D.Doxycycline therapy

E.Penicillin therapy

15. A 22-year-old woman comes to the physician because of yellow vaginal discharge, pruritus, and pain with urination for the past 6 days. Three weeks ago, she had an episode of acute bacterial rhinosinusitis that was treated with a 10-day course of amoxicillin. She has been sexually active with multiple male partners over the past year and uses condoms inconsistently; she has been taking an oral contraceptive for the past 2 years. She has no previous history of serious illness or sexually transmitted diseases. Her temperature is 37°C (98.6°F), pulse is 75/min, respirations are 12/min, and blood pressure is 122/82 mm Hg. Pelvic examination shows erythema of the vulva and vagina and foul-smelling, frothy, yellow-green vaginal discharge. The pH of the discharge is 5.8. Bimanual examination is unremarkable. Further evaluation of this patient's vaginal discharge is most likely to show which of the following findings?

» Feedback

Based on the prior antibiotic use, multiple sexual partners, and the characteristic description of the vaginal discharge with an elevated pH value, this patient most likely has trichomoniasis.

A.Obligate intracellular organisms

B.Gram-negative diplococci

C.Positive whiff test

D.Pseudohyphae

E.Flagellated protozoa

(*Trichomonas vaginalis* is an anaerobic, motile protozoan with flagella. Patients typically have foul-smelling, frothy, yellow-green, purulent vaginal discharge with a pH > 4.5. Transmission of this disease occurs through unprotected sex. Most patients remain asymptomatic. (See table “Differential diagnoses of infectious vulvovaginitis”)

16. A 56-year-old woman, gravida 3, para 3, comes to the physician because her left breast has become larger, hot, and itchy over the past 2 months. The patient felt a small lump in her left breast 1 year ago but did not seek medical attention at that time. She has hypertension and hyperlipidemia. Menarche was at the age of 11 years and menopause at the age of 46 years. Her mother died of breast cancer at the age of 45 years. The patient does not smoke or drink alcohol. Current medications include labetalol, simvastatin, and daily low-dose aspirin. She is 170 cm (5 ft 7 in) tall and weighs 78 kg (172 lb); BMI is 27 kg/m^2. Her temperature is 37.7°C (99.9°F), pulse is 78/min, and blood pressure is 138/88 mm Hg. Examination shows large dense breasts. There is widespread erythema and edematous skin plaques over a breast mass in the left breast. The left breast is tender to touch and left-sided axillary lymphadenopathy is noted. Which of the following is the most likely diagnosis?

» Feedback

The combination of a painful breast lump and erythematous overlying skin in a postmenopausal woman should be taken to indicate a malignancy until proven otherwise!

A.Paget'sdisease of the breast

B.Mastitis

C.Breast fibroadenoma

D.Breast abscess

E.Inflammatory breast cancer

This patient has characteristic findings of inflammatory breast cancer, including breast tenderness, erythematous and edematous skin plaques overlying a breast mass, and axillary lymphadenopathy. There are several features that further support this diagnosis, such as the patient's age, the history of a breast mass that the patient already noticed 1 year ago, and the positive family history of breast cancer.

17. A previously healthy 19-year-old woman comes to the physician because of vaginal discharge for 3 days. She describes the discharge as yellow and mucopurulent with a foul odor. She has also noticed vaginal bleeding after sexual activity. She has not had any itching or irritation. Her last menstrual period was 2 weeks ago. She is sexually active with one male partner, and they use condoms inconsistently. A rapid urine hCG test is negative. Her temperature is 37.3°C (99.1°F), pulse is 88/min, and blood

pressure is 108/62 mm Hg. Pelvic examination shows a friable cervix. Speculum examination is unremarkable. A wet mount shows no abnormalities. Which of the following is the most appropriate diagnostic test?

» Feedback

Yellow mucopurulent discharge with a foul scent, bleeding after sexual activity, and a friable cervix on pelvic examination are all suggestive of bacterial cervicitis. The most common causes of bacterial cervicitis are *Chlamydia trachomatis* and *Neisseria gonorrhoeae*.

A.Tzanck smear

B.Gram stain of cervical swab

C.Colposcopy

D.Pap smear

E.Nucleic acid amplification test

(NAAT of vaginal fluid is the test of choice in the diagnosis of *Chlamydia trachomatis* and *Neisseria gonorrhoeae*. NAAT provides a rapid result, has a high sensitivity, and can differentiate between *C. trachomatis* and *N. gonorrhoeae* infection. It has therefore widely replaced tests such as cultures and Gram staining).

18.A 42-year-old woman comes to the physician because of vaginal discharge for 3 days. She has no dysuria, dyspareunia, pruritus, or burning. The patient is sexually active with two male partners and uses condoms inconsistently. She often douches between sexual intercourse. Pelvic examination shows thin and off-white vaginal discharge. The pH of the discharge is 5.1. Wet mount exam shows a quarter of her vaginal epithelial cells are covered with small coccobacilli. Which of the following is the most appropriate next step in management?

» Feedback

Based on the color and pH value of the vaginal discharge and the wet mount showing clue cells, this patient most likely has bacterial vaginosis caused by *Gardnerella vaginalis*.

A.Treat the patient with ceftriaxone and azithromycin

B.Treat the patient and partners with metronidazole

C.Treat patient with topical ketoconazole

D.Treat the patient and partners with ceftriaxone and azithromycin

E.Reassurance and follow-up in one week

F.Treat the patient with metronidazole

(Metronidazole is prescribed for anaerobic infections such as *Gardnerella vaginalis*, the cause of bacterial vaginosis (BV). Although sexual intercourse is the primary risk factor, this condition is not a sexually transmitted disease (STD), as it is caused by an imbalance of the vaginal flora resulting in overgrowth of *Gardnerella* bacteria (and a relative lack of the normally dominant lactobacilli). Another risk factor for this imbalance is vaginal douching, which this woman reports she does regularly. BV is commonly asymptomatic. When symptomatic, individuals should receive treatment with either oral or topical metronidazole. As it is not an STD, there is no need for partner treatment).

19. A 25-year-old woman comes to the physician because of vaginal discharge for 4 days. She has no pain or pruritus.

Menses occur at regular 27-day intervals and last 5 days. Her last menstrual period was 2 weeks ago. She is sexually active with two male partners and uses a diaphragm for contraception. She had a normal pap smear 3 months ago. She has no history of serious illness and takes no medications. Her temperature is 37.3°C (99°F), pulse is 75/min, and blood pressure is 115/75 mm Hg. Pelvic examination shows a malodorous gray vaginal discharge. The pH of the discharge is 5.0. Microscopic examination of the vaginal discharge is shown. Which of the following is the most likely causal organism?

» Feedback

Based on the description of the vaginal discharge, its elevated pH value, and the microscopic finding of clue cells, this patient most likely has bacterial vaginosis.

A.Escherichia coli

B.Neisseria gonorrhoeae

C.Gardnerella vaginalis

(Gardnerella vaginalis is an anaerobic bacterium that causes bacterial vaginosis. The condition is usually asymptomatic, but may present with vaginal discharge as seen in this patient. There are two characteristic diagnostic findings: Clue cells (epithelial cells covered with bacteria) seen on a wet mount preparation and a positive Whiff test. The Whiff test consists of applying potassium hydroxide to a slide with vaginal discharge, and is positive if this causes a fishy or amine odor).

D.Chlamydia trachomatis

E.Candida albicans

F.Trichomonas vaginalis

20. A previously healthy 25-year-old woman is brought to the emergency department because of a 1-hour history of sudden severe lower abdominal pain. The pain started shortly after having sexual intercourse. The pain is worse with movement and urination. The patient had several urinary tract infections as a child. She is sexually active with her boyfriend and uses condoms inconsistently. She cannot remember when her last menstrual period was. She appears uncomfortable and pale. Her temperature is 37.5°C (99.5°F), pulse is 110/min, and blood pressure is 90/60 mm Hg. Abdominal examination shows a palpable, tender right adnexal mass. Her hemoglobin concentration is 10 g/dL and her hematocrit is 30%. A urine pregnancy test is negative. Pelvic ultrasound shows a 5 x 3-cm right ovarian sac-like structure with surrounding echogenic fluid around the structure and the uterus. Which of the following is the most appropriate management for this patient's condition?

» Feedback

This patient's sudden onset of severe lower abdominal pain, negative pregnancy test, and findings on pelvic ultrasound are consistent with a ovarian cyst. The constellation of tachycardia, hypotension, and anemia raises suspicion of severe intraabdominal bleeding from the cyst.

A.Intravenous ketorolac administration and close observation

B.CT scan of the abdomen

C.Oral doxycycline and metronidazole administration

D.Uterine artery embolization

E.Intravenous methotrexate administration

F.Emergency exploratory laparotomy

(This patient has signs of shock, likely secondary to intraabdominal bleeding from a ruptured ovarian cyst. In addition to supportive measures such as fluid resuscitation, she needs to undergo emergency exploratory laparotomy to control hemorrhaging).

21. A 17-year-old girl is brought to the physician because she has not had a menstrual period. There is no personal or family history of serious illness. Examination shows normal breast development. Pubic hair is coarse and extends to the inner surface of the thighs. Pelvic examination shows a blind vaginal pouch. Ultrasonography shows ovaries, but no uterus. Which of the following is the most likely underlying cause of this patient's symptoms?

» Feedback

Renal agenesis or pelvic kidney are commonly associated with this condition.

A.17-alpha-hydroxylase enzyme deficiency

B.Mullerian duct agenesis

(Mullerian duct agenesis is a rare congenital defect in which the Mullerian ducts fail to fuse. As a result, the uterus, cervix, and upper third of the vagina are atretic. Patients are asymptomatic until puberty, when they present with primary amenorrhea. Development of secondary sexual characteristics occurs normally since the gonads are functional and the patient has a normal female karyotype. The treatment is primarily surgical, involving uterine transplantation and vaginoplasty).

C.5-alpha reductase enzyme deficiency

D.Androgen insensitivity

E.Sex chromosomal monosomy

F.Pure gonadal dysgenesis

G.Failure of Mullerian duct recanalization

22.A 17-year-old girl comes to the emergency department with a 5-day history of severe abdominal pain, cramping, nausea, and vomiting. She also has pain with urination. She is sexually active with one male partner, and they use condoms inconsistently. She experienced a burning pain when she last had sexual intercourse 3 days ago. Menses occur at regular 28-day intervals and last 5 days. Her last menstrual period was 3 weeks ago. Her temperature is 38.5°C (101.3°F), pulse is 83/min, and blood pressure is 110/70 mm Hg. Physical examination shows abdominal tenderness in the lower quadrants. Pelvic examination shows cervical motion tenderness and purulent cervical discharge. Laboratory studies show a leukocyte count of 15,000/mm^3 and an erythrocyte sedimentation rate of 100 mm/h. Which of the following is the most likely diagnosis?

» Feedback

Cervical motion tenderness and purulent cervical discharge in a young, sexually active girl should point you toward the correct diagnosis.

A.Pyelonephritis

B.Ectopic pregnancy

C.Ovarian cyst rupture

D.Appendicitis

E.Vulvovaginitis

F.Cystitis

G.Pelvic inflammatory disease

(This patient has a classic presentation of pelvic inflammatory disease (PID), which consists of lower abdominal pain (generally bilateral), cervical motion tenderness, and purulent vaginal discharge in a young, sexually active patient. Other associations include dyspareunia, dysuria, leukocytosis, and an elevated ESR, which are also present. All cases of PID require antibiotic treatment because it can cause permanent damage to the fallopian tubes, even resulting in infertility. As it is a polymicrobial disease, treatment usually includes).

23. A 23-year-old woman comes to the physician for a routine health maintenance examination. She feels well. Menses have occured at regular 30-day intervals and last for 5 days with normal flow. She has a history of gonorrhea that was treated at 20 years of age. She has smoked one pack of cigarettes daily for 3 years. She drinks one glass of wine daily. Her only medication is an oral contraceptive. Vital signs are within normal limits. Physical examination including pelvic examination shows no abnormalities. A Pap smear shows high-grade squamous epithelial lesion. Which of the following is the most appropriate next step in management?

A.Colposcopy

(Colposcopy should be performed if a Pap smear shows a HSIL, or if atypical squamous cells are seen but HSIL (ASC-H) cannot be ruled out. if the patient shows premalignant cervical changes such as leukoplakia, punctated/mosaic capillaries (or other atypical blood vessels), an irregular surface contour, ulceration, or regions that stain white with acetoacetic acid, a directed surface biopsy should be performed from these sites. If the patient is older than 24 years of age and not pregnant, a LEEP, rather than a colposcopy-directed biopsy, can be performed to excise the transformational zone and obtain a diagnostic specimen).

B.Cervical biopsy

C.Endometrial sampling

D.Repeat cytology in 6 months

E.Loop electrosurgical excision

24. A 36-year-old nulligravid woman comes to the physician because of a 1-year history of pelvic discomfort and heavy menstrual bleeding. The pain is dull and pressure-like and occurs intermittently; the patient is asymptomatic between episodes. Menses occur at regular 30-day intervals and last 8 days with heavy flow. Her last menstrual period ended 5 days ago. She is sexually active and does not use contraception. Her temperature is 36.8°C (98.8°F), pulse is 76/min, and blood pressure is 106/68 mm Hg. Pelvic examination shows white cervical mucus and a firm, irregularly-shaped uterus consistent in size with a 5-week gestation. A spot urine pregnancy test is negative. Which of the following

is the most appropriate next step in diagnosis?

» Feedback

This patient presents with an irregularly enlarged uterus, hypermenorrhea-menorrhagia, pelvic pain, and, presumably, infertility (no prior pregnancy despite being sexually active and not using contraception). This constellation of signs suggests uterine leiomyomas.

A.Pelvic radiograph

B.Colposcopy with cervical cultures

C.Laparoscopy

D.Non-contrast pelvic CT scan

E.Pelvic MRI

F.Dilation and curettage

G.Pelvic ultrasound

(Pelvic ultrasound is the best initial test to confirm the diagnosis of uterine leiomyomas. Leiomyomas appear as concentric, hypoechoic, heterogeneous masses on ultrasound. The presence of calcifications or cystic areas suggests necrosis. Submucosal leiomyomas are most frequently associated with significantly prolonged or heavy menstrual bleeding, which is believed to be due to the increased total surface area as a result of the bulging uterine wall, impaired endometrial wall contractility, and/or vascular abnormalities. Pelvic discomfort may be due to the increased menstrual bleeding (manifesting as dysmenorrhea) or the mass effect of the tumors (manifesting as pelvic discomfort). In addition, uterine leiomyomas may cause obstruction of the uterine cavity, resulting in difficulty conceiving).

25.A 22-year-old woman comes to the physician because of a 1-week history of nausea and vomiting. She has not had fever, abdominal pain, diarrhea, or vaginal bleeding. She does not remember the date of her last menstrual period. She uses oral contraceptive pills but occasionally forgot to take them. She had pelvic inflammatory disease 2 years ago and was treated with antibiotics. Her temperature is 37°C (98.6°F), pulse is 110/min, respirations are 16/min, and blood pressure is 118/75 mm Hg. Physical examination shows no abnormalities. Pelvic examination shows a normal appearing vagina, cervix, uterus, and adnexa. A urine pregnancy test is positive. Her serum β-human chorionic gonadotropin concentration is 805 mIU/mL. Which of the following is the most appropriate next step in diagnosis?

» Feedback

A single positive urine and serum β-hCG does not confirm a viable intrauterine pregnancy.

A.Abdominal ultrasound now

B.Diagnostic laparoscopy now

C.Administer misoprostol now

D.Transvaginal ultrasound in 4 days

(After positive β-hCG testing, the location of the fertilized egg should be confirmed via vaginal ultrasound. However, serum β-hCG must be > 1,500–2,000 mIU/mL to reliably determine an intrauterine pregnancy via this method. Since this patient's serum β-hCG is only 805 mIU/mL, vaginal ultrasound would yield a false negative result. The gestational sac should be detectable in 4 days via transvaginal ultrasound, as serum β-hCG doubles every ~ 2.5 days the first 10 days of normal pregnancy. β-hCG should also be repeated during the same visit to confirm an appropriate rise in serum β-hCG. A slow rise in β-hCG can indicate an ectopic pregnancy or abortion, whereas a fast rise in the value may indicate a β-hCG-secreting tumor (e.g., hydatidiform mole, choriocarcinoma) or twin pregnancy).

E.Schedule dilation and evacuation

F.Referral to obstetrics

G.Repeat a urine β-hCG in 4 days

H.Administer methotrexate now

This patient presents with secondary amenorrhea, very low estrogen levels, and elevated FSH and LH levels. These features are suggestive of ovarian insufficiency.

A.Primary hypothyroidism

B.Hyperprolactinemia

C.Pregnancy

D.Premature ovarian failure

(POF refers to primary ovarian insufficiency occurring in women before the age of 40. Due to an idiopathic disorder in the ovary, the duration and frequency of menstruation decreases, leading to hypergonadotropic hypogonadism with high FSH and LH levels and low estrogen levels. Women typically present with climacteric features (headache, impaired sleep, increased sweating), followed by a cessation of menstruation. POF also explains why this woman likely has infertility issues considering that she does not use contraception).

E.Polycystic ovary syndrome

F.Major depressive disorder

26. A 36-year-old woman comes to the physician because she has not had her menstrual period for the past 4 months. During this period, she has had frequent headaches, difficulty sleeping, and increased sweating. She has not had any weight changes. Over the past year, menses occurred at irregular 30- to 45-day intervals with light flow. The patient underwent two successful cesarean sections at the ages of 28 and 32. She has two healthy children. She is sexually active with her husband and does not use condoms. Her vital signs are within normal limits. Physical examination shows no abnormalities. Laboratory studies show:

Estradiol	8 pg/mL (mid-follicular phase: N=27–123 pg/mL)
Follicle-stimulating hormone	200 mIU/mL
Luteinizing hormone	180 mIU/mL
Prolactin	16 ng/mL

Which of the following is the most likely diagnosis?

» Feedback

27. A 14-year-old girl is brought to the physician because of a 10-day history of vaginal bleeding. The flow is heavy with the passage of clots.
Since menarche 1 year ago, menses have occurred at irregular 26- to 32-day intervals and last 3 to 6 days. Her last menstrual period was 4 weeks ago. She has no history of serious illness and takes no medications. Her temperature is 37.1°C (98.8°F), pulse is 98/min, and blood pressure is 106/70 mm Hg. Pelvic examination shows vaginal bleeding. The remainder of the

examination shows no abnormalities. Her hemoglobin is 13.1 g/dL. A urine pregnancy test is negative. Which of the following is the most appropriate next step in management?

» Feedback

Acute abnormal uterine bleeding (AUB) in a girl who attained menarche only one year ago is most likely caused by anovulation due to an immature hypothalamic-pituitary-gonadal axis. Anovulation leads to a deficit in progesterone production, while unopposed estrogen continues to cause abnormal growth of the endometrial lining and vessels. Spontaneous bleeding may result from sloughing of the endometrial lining. If increasing estrogen triggers a negative feedback in the hypothalamic-pituitary-gonadal axis, a drop in FSH/LH and estrogen levels leads to a sudden loss of endometrium that can cause heavy and prolonged bleeding.

A.Tranexamic acid

B.Endometrial ablation

C.Uterine artery embolization

D.Uterine curretage

E.Conjugated estrogen therapy

(Administration of high-dose oral conjugated estrogen is the treatment of choice in hemodynamically stable women with acute AUB, irrespective of the underlying cause. High levels of estrogen trigger rapid growth of the endometrium and thereby stop sudden, heavy bleeding from the uterine surface. Surgical treatment is needed if the patient does not respond to medical treatment or is hemodynamically unstable, bleeding is severe, medical management is contraindicated, or the underlying medical condition requires surgical repair).

F.Intrauterine tamponade

28. A 55-year-old postmenopausal woman comes to the physician for a screening Pap smear. She has no history of serious illness. Her last Pap smear was 10 years ago and showed no abnormalities. She has smoked one-half pack of cigarettes daily for 20 years and drinks 3 bottles of wine per week. She is sexually active with multiple male partners and uses condoms inconsistently. Her paternal grandmother had ovarian cancer and her maternal aunt had breast cancer. Pelvic examination shows multiple red, fleshy polypoid masses on the anterior vaginal wall. A biopsy is obtained and histology shows large cells with abundant clear cytoplasm. Which of the following is the most significant risk factor for this diagnosis?

» Feedback

Large cells with abundant clear cytoplasm are consistent with clear cell adenocarcinoma of the vagina.

A.Alcohol consumption

B.Cigarette smoking

C.Family history of breast and ovarian cancer

D.Human papillomavirus infection

E.Diethylstilbestrol exposure in utero

(Diethylstilbestrol (DES) is a synthetic estrogen that was introduced in the 1940s as it was believed to prevent miscarriage in pregnant women. In the 1971, DES was discontinued because studies found that it is a potent transplacental carcinogen. It significantly increases the life-time risk of vaginal clear cell adenocarcinoma, a rare form of vaginal cancer, in

daughters of the women who received DES. Therefore, women with a history of intrauterine DES exposure should be monitored closely).

28. A 53-year-old woman comes to the physician for a follow-up examination. One month ago, she was diagnosed with carcinoma of the left breast. She underwent a lumpectomy for a 2.1-cm mass and sentinel lymph node biopsy 2 weeks ago. The biopsy of the breast mass showed margin-free invasive ductal carcinoma; immunohistochemistry showed the carcinoma is estrogen-receptor and progesterone-receptor negative, and HER2-receptor positive. The lymph node biopsy was negative for metastases. Examination shows a healing surgical incision over the left breast. There is no palpable axillary lymphadenopathy. Her physician decides to initiate treatment with appropriate pharmacotherapy. Which of the following is the most appropriate next step in management?

» Feedback

HER2-receptor-positive breast carcinomas require treatment with trastuzumab in addition to systemic chemotherapy.

A.Echocardiography

(HER2-positive tumors respond well to targeted therapy with trastuzumab and chemotherapeutic agents such as anthracyclines and taxanes. Before initiating treatment, an echocardiogram should be performed to evaluate cardiac function, since trastuzumab, anthracyclines, and taxanes are cardiotoxic (e.g., dilated cardiomyopathy with systolic CHF). The cardiotoxic effects may be limited with dexrazoxane, an iron chelating agent).

B.Fundoscopy

C.Dual energy x-ray absorptiometry scan

D.X-ray of the chest

E.Endometrial biopsy

29. A 36-year-old woman comes to the physician because of painless lesions on the vulva that she first noticed 2 days ago. She does not have any urinary symptoms. She has gastroesophageal reflux disease for which she takes omeprazole. She has smoked one pack of cigarettes daily for 10 years. She is sexually active with multiple partners and uses condoms inconsistently. Examination shows clusters of several 3- to 5-mm raised lesions with a rough texture on the vulva. Application of a dilute acetic acid solution turns the lesions white. An HIV test is negative. Which of the following is the most appropriate next step in management?

» Feedback

Clusters of nonpainful raised, rough-textured genital lesions that whiten after application of acetic acid suggests condylomata acuminata, which is caused by human papillomavirus (HPV).

A.Parenteral benzathine penicillin

B.Cryotherapy

(Cryotherapy is used for the treatment of benign skin lesions such as condylomata acuminata. Cryotherapy has a good rate of success for ablation of condylomata acuminata, but recurrence is high. Alternative treatment options include curettage, laser surgery, or electrocoagulation, especially in cases involving numerous warts).

C.Topical mometasone

D.Radiotherapy

E.Oral acyclovir

30. A 19-year-old nulligravid woman comes to the physician because of irregular heavy menstrual bleeding since menarche at age 16 years. Menses occur at irregular 15- to 45-day intervals and last 7 to 10 days. She has also noted increased hair growth on her face. She has not been sexually active since she started taking isotretinoin for acne vulgaris 4 months ago. Her 70-year-old grandmother has breast cancer. She is 163 cm (5 ft 4 in) tall and weighs 74 kg (163 lb); BMI is 28 kg/m^2. Pelvic examination shows copious cervical mucus and slightly enlarged irregular ovaries. If left untreated, this patient is at an increased risk for which of the following complications?

» Feedback

Hyperandrogenic anovulation (as evidenced by delayed menarche, irregular menses, hirsutism, and cystic acne) and obesity are characteristic of polycystic ovarian syndrome.

A.Choriocarcinoma

B.Endometrial cancer

(This patient most likely has polycystic ovarian syndrome (PCOS), which is characterized by hyperandrogenism, oligoovulation/anovulation, and the presence of polycystic ovaries on ultrasound. Chronic anovulation results in prolonged unopposed (by progesterone) estrogen exposure of the endometrium, which increases the risk of endometrial hyperplasia and endometrial carcinoma).

C.Thyroid lymphoma

D.Cervical cancer

E.Osteoporosis

F.Proximal myopathy

G.Diplopia and headaches

H.Breast cancer

31. A 33-year-old nulliparous woman comes to the physician because of a 5-month history of increased flow and duration of her menses. Menses previously occurred at regular 32-day intervals and lasted 4 days with normal flow. They now last 10 days and the flow is heavy with the passage of clots. During this period, she has also had dyspareunia and cyclical lower abdominal pain. Her mother died of cervical cancer at the age of 58 years. Her BMI is 31 kg/m^2. Her

temperature is 37°C (98.6°F), pulse is 86/min, and blood pressure is 110/70 mm Hg. Pelvic examination shows an asymmetrically enlarged, nodular uterus consistent in size with a 12-week gestation. A urine pregnancy test is negative. Which of the following is the most likely cause of this patient's findings?

» Feedback

This condition is also more common in black women and those who experienced early menarche (e.g., < 10 years of age).

A.Endometrial tissue within the ovaries

B.Endometrial tissue within the uterine wall

C.Excessive serum androgen levels

D.Benign tumor of the myometrium

(Menorrhagia, dyspareunia, and dysmenorrhea in an obese nulliparous woman with an asymmetrically enlarged nodular uterus on examination is suggestive of uterine fibroids, which are benign smooth muscle tumors that arise in the myometrium. The presence of an asymmetrically enlarged uterus with a negative urine pregnancy test further affirms the diagnosis. The diagnosis can be confirmed by vaginal ultrasound, based on which fibroids can be classified).

E.Malignant transformation of endometrial tissue

F.Inflammation of the endometrium

G.Abnormal thickening of endometrial tissue

H.Pedunculated endometrial mass

I.Malignant proliferation of trophoblasts

32. An otherwise healthy 23-year-old newly-married woman comes to the physician because of a 6-day history of discomfort in her vaginal area during and after sexual intercourse. Her last menstrual period was 3 weeks ago. Two years ago, she was diagnosed with genital herpes which was treated with acyclovir. She has been in a monogamous relationship for the past year and has been using an intrauterine device for contraception for the past month. Examination shows a 4-cm, mildly tender mass in the inferior aspect of the left labium minus with no signs of inflammation. Speculum examination causes her discomfort but shows no abnormalities. Which of the following is the most likely cause of these findings?

» Feedback

This patient presents with a mass that is characteristically found only at the junction of the anterior second third and posterior first third of the vulva.

A.Obstructed orifice of the Bartholin duct

(Obstruction of the orifice of Bartholin gland duct by inflammation or trauma results in the formation of a palpable mass in the posterior vaginal introitus (Bartholin gland cyst), which can cause

mild dyspareunia. Bartholin gland cysts are quite common and have a peak incidence between 20 and 30 years. Treatment of Bartholin gland cyst primarily involves Sitz baths to facilitate rupture of the cyst. Surgery can be considered for recurrent or infected cysts).

B.Obstructed orifice of a sebaceous gland

C.Reactivation of the genital herpes

D.Squamous cell carcinoma of the vulva

E.Allergic reaction to the intrauterine device

F.Genito-pelvic pain disorder

G.Obstructed orifice of the Skene gland

H.Prolapse of the distal urethral mucosa

33. A 25-year-old woman comes to the physician because of an acute, painful swelling of the left labia that she first noticed that morning. She also reports some pain while sitting and walking. She is sexually active with her boyfriend and states that she has been having pain during vaginal intercourse lately. She has no history of serious illness. She appears uncomfortable. Her temperature is 38°C (100.4°F), pulse is 90/min, and blood pressure 120/80 mm Hg. Pelvic examination shows a left-sided, tender mass surrounded by edema and erythema in the left inner labia. The remainder of the examination shows no abnormalities.

Which of the following is the most appropriate next step in management?

» Feedback

This patient presents with a left-sided, tender mass in the left inner labia that is causing pain with movement and dyspareunia. These features are consistent with a Bartholin gland abscess.

A.Sitz baths

B.Cryotherapy

C.Incision and drainage

(Incision and drainage followed by irrigation and packing is indicated for a first-time Bartholin gland abscess. The packing should be changed regularly and removed 2 days after the procedure. Alternatively, fistulization with a Word catheter is also an appropriate treatment option).

D.Valacyclovir

E.Biopsy

F.Marsupialization

G.Ketoconazole cream

H.Trimethoprim-sulfamethoxazole

34. A 16-year-old girl comes to the physician because of episodic lower abdominal pain for 5 months. The pain starts to occur a few hours before her menses and lasts for 2–3 days. Ibuprofen helped reduce the pain in the first months but has no effect now. She has missed a couple of days at school because of severe pain. Menarche was at the age of 14 years, and menses occur at regular 29-day intervals. She is sexually active with one male partner

and uses condoms inconsistently. Her temperature is 37.1°C (98.8°F), pulse is 88/min, and blood pressure is 110/70 mm Hg. Physical and pelvic examination show no abnormalities. A urine pregnancy test is negative. Which of the following is the most appropriate next step in management?

» Feedback

Pain just before the onset of or during menses that lasts for 1–3 days without any clinical findings of pelvic pathology is suggestive of primary dysmenorrhea.

A.Diagnostic laparoscopy

B.Ceftriaxone and doxycycline therapy

C.Pelvic ultrasonography

D.Oral contraceptive pill

(Primary dysmenorrhea occurs in up to 90% of adolescent females. As there is no organic cause, no further investigations are necessary in this patient and treatment with NSAIDs and/or a combined estrogen-progestin contraceptive should be initiated to keep hormone levels steady and relieve pain. Given this patient's history of unprotected sex, she should also be counseled on safe sex practices and offered testing for sexually transmitted infections. (See table "Differential diagnosis of dysmenorrhea and menorrhagia")

E.Urinalysis

35. A 24-year-old woman comes to the physician for an annual routine examination. Menses occur at regular 28-day intervals and last for 4 days with normal flow. Her last menstrual period was 3 weeks ago. She is sexually active with one male partner and they use condoms inconsistently. The patient is 160 cm (5 ft 3 in) tall and weighs 72 kg (150 lb); BMI is 28.1 kg/m^2. She feels well. Pelvic examination shows a smooth, mobile right adnexal mass. A subsequent ultrasound of the pelvis shows a single, 2-cm large, round, hypoechoic mass with a thin, smooth wall in the right ovary. The mass has an acoustic shadow, and there are no signs of blood flow or septae within the mass. Which of the following is the most appropriate next step in management?

» Feedback

This woman most likely has an ovarian cyst.

A.Diagnostic laparoscopy

B.CA-125 level

C.CT scan of the pelvis

D.Oral contraceptive

E.Clindamycin and gentamicin therapy

F.Follow-up examination

(This patient's presentation is suggestive of a benign ovarian cyst. Management consists of follow-up examinations to monitor possible growth of the cyst, of which the majority resolve spontaneously. Treatment is only required if complications occur (e.g., ovarian torsion, ovarian cyst rupture). In this case, symptoms would include sudden onset of lower abdominal pain, nausea and vomiting, and possibly signs of shock in the event of significant blood loss).

36. A 15-year-old girl comes to the physician because of episodic pelvic pain radiating to her back and thighs for 4 months. The pain occurs a few

hours before her menstrual period and lasts for 2 days. She has been taking ibuprofen, which has provided some relief. Menses have occurred at regular 28-day intervals since menarche at the age of 12 years and last for 5 to 6 days. She is sexually active with two male partners and uses condoms inconsistently. Vital signs are within normal limits. Physical examination shows no abnormalities. Which of the following is the most likely cause of this patient's symptoms?

» Feedback

Episodic lower abdominal pain shortly before menstruation in an adolescent with a normal physical exam suggests primary dysmenorrhea.

A.Endometrial sloughing and uterine contractions mediated by prostaglandin

(Primary dysmenorrhea is the most common gynecological complaint among adolescent females. The condition is most likely caused by an increased production of endometrial prostaglandin (PG) F2α. PGF2α causes dysrhythmic uterine contractions and consequently abdominal pain and uterine ischemia (which leads to endometrial sloughing). The accompanying symptoms of primary dysmenorrhea (e.g., headache, diarrhea, fatigue, nausea) are also believed to be mediated by PGF2α. NSAIDs such as ibuprofen are the first-line treatment for primary dysmenorrhea since they inhibit PG synthesis. Patients that do not respond to NSAIDs should be treated with oral contraceptive pills, which decrease PG levels by suppressing ovulation).

B.Endometriotic cell implants in the ovaries, fallopian tubes, or cervix

C.Activation of lymphatic cells in the intestinal walls and local tissue damage

D.Ascending infection of the uterus, fallopian tubes, ovaries, or surrounding tissue

E.Fluid-filled sac within the ovary

F.Pregnancy

G.Endometrial tissue within the uterine wall

H.Ascending infection of the urinary tract

I.Hormone-sensitive smooth muscle tumor of the myometrium

37. A 57-year-old post-menopausal woman comes to the physician because of intermittent, bloody post-coital vaginal discharge for the past month. She does not have pain with intercourse. Eleven years ago, she had LSIL on a routine Pap smear and testing for high-risk HPV strains was positive. Colposcopy showed CIN 1. She has not returned for follow-up Pap smears since then. She is sexually active with her husband only, and they do not use condoms. She has smoked half a pack of cigarettes per day for the past 25 years and does not drink alcohol. On speculum exam, a 1.4 cm, erythematous exophytic mass with ulceration is noted on the posterior wall of the upper third of the vagina. Which of the following is the most probable histopathology of this mass?

» Feedback

The patient has a primary vaginal cancer, likely secondary to HPV (the most common cause of vaginal cancer). What is the most common type of vaginal cancer?

A.Squamous cell carcinoma

(A squamous cell carcinoma is the most common type of vaginal carcinoma (~75% of cases). Most cases are caused by infection with HPV type 16 or 18. Other symptoms of a vaginal carcinoma include vaginal ulceration and a malodorous discharge. The next best step in the management of this patient is a biopsy to confirm the diagnosis, followed by cystourethroscopy, rectosigmoidoscopy, and pelvic imaging to assess the extent of growth and lymph node spread. In the case of carcinomas that are limited to the vaginal wall (stage I), the treatment is primarily surgical. For more advanced cancer, radiotherapy is the primary treatment).

B.Basal cell carcinoma

C.Melanoma

D.Sarcoma botryoides

E.Adenocarcinoma

38. A 64-year-old woman comes to the physician because of a 4-month history of vulvar itching and dryness. During this period, she has also had pain during sexual intercourse but no postcoital bleeding. Her last menstrual period was at the age of 51 years. She has type 2 diabetes mellitus and her only medication is metformin. Pelvic examination shows atrophic labial folds. There are excoriation marks and a well-demarcated, white plaque on the vulva. The remainder of the examination shows no abnormalities. The results of biopsy rule out cancer. Which of the following is the most appropriate next step in treatment for this patient's lesions?

» Feedback

Dyspareunia and pruritus in a postmenopausal woman with a white vulvar plaque on pelvic examination indicates a diagnosis of lichen sclerosus.

A.Topical fluconazole

B.Topical clobetasol

(After ruling out squamous cell carcinoma (that lichen sclerosus increases the risk of) and confirming the diagnosis via biopsy, topical glucocorticoids, such as betamethasone or clobetasol, should be applied for lichen sclerosus to help reduce the inflammation and itching).

C.Topical tacrolimus

D.Topical progesterone

E.Topical estrogen

F.Phototherapy

39. A 55-year-old nulligravid woman comes to the physician because of a 3-day history of heavy vaginal bleeding, requiring more than 5 pads per day. Menopause occurred 1 year ago. She attained menarche at 10 years of age. She has a history of hypothyroidism and type 2 diabetes mellitus. She has smoked 1 pack of cigarettes daily for 20 years but quit 5

years ago. Current medications include levothyroxine and metformin. She is 165 cm (5 ft 5 in) tall and weighs 86 kg (190 lb); BMI is 32 kg/m^2. Physical examination shows mild vaginal atrophy and a normal cervix. The uterus and adnexa are nontender to palpation. Transvaginal ultrasonography shows an endometrial thickness of 6 mm. Endometrial biopsy shows non-invasive proliferation of endometrial glands with no nuclear or cytological atypia. Which of the following is the most appropriate next step in management?

» Feedback

In postmenopausal women, endometrial thickness > 5 mm with no evidence of atypia or invasion on endometrial biopsy, is diagnostic of endometrial hyperplasia.

A.Total hysterectomy

B.Estrogen vaginal cream

C.Reassurance and follow-up

D.Progestin therapy

Obese postmenopausal women with early menarche, late menopause, and nulliparity, as is the case in this patient, are at an increased risk of developing endometrial hyperplasia. Biopsy confirmed the absence of atypia, so the treatment of choice in this patient is progestin therapy. Progestin opposes the stimulating effect of estrogen on the endometrium, thereby preventing hyperplasia and the occurrence of heavy vaginal bleeding. Good regression rates have been reported in > 98% of women after 3–6 months of progestin therapy. Follow-up with ultrasound after 3–6 months of conservative treatment is recommended to rule out progression to endometrial hyperplasia with aplasia or endometrial carcinoma).

E.Surgical endometrial ablation

F.Anastrozole therapy

40. A 27-year-old woman comes to the physician for a routine health maintenance examination. She feels well. She had a chlamydia infection at the age of 22 years that was treated. Her only medication is an oral contraceptive. She has smoked one pack of cigarettes daily for 6 years. She has recently been sexually active with 3 male partners and uses condoms inconsistently. Her last Pap test was 4 years ago and results were normal. Physical examination shows no abnormalities. A Pap test shows atypical squamous cells of undetermined significance. Which of the following is the most appropriate next step in management?

A.Perform cervical biopsy

B.Perform loop electrosurgical excision procedure

C.Perform HPV testing

(In a patient > 24 years old with atypical squamous cells of undetermined significance (ASC-US) detected on Pap smear, HPV testing is the recommended next step in management. Since active HPV infections are detected in almost all cases of cervical cancer, a positive HPV test and pathological findings on a Pap test are associated with a significantly increased risk of developing a malignancy. Colposcopy is recommended if the HPV test is positive. In patients who are HPV-negative with ASC-US, a repeated test and HPV test after 3 years suffice).

D.Repeat cytology in 6 months

E.Perform colposcopy

F.Perform laser ablation

41. A 24-year-old woman comes to her primary care physician because she has not had a menstrual period for 6 months. She is a competitive runner and has been training heavily for the past year in preparation for upcoming races. She has no family or personal history of serious illness. She has not been sexually active for the past 9 months. Her temperature is 36.9°C (98.4° F), pulse is 51/min, respirations are 12/min, and blood pressure is 106/67 mm Hg. Her BMI is 18.1 kg/m^2. Which of the following is the most likely cause of her amenorrhea?

» Feedback

In underweight women of reproductive age (often competitive athletes), hypothalamic hypogonadism is a common cause of amenorrhea.

A.Autoimmune destruction of thyroid cells

B.Poor synthetic response of ovarian cells to circulating LH and FSH

C.Increased prolactin secretion

D.Decreased frequency of GnRH release from the hypothalamus

(Functional hypothalamic amenorrhea can be caused by a variety of factors such as excessive exercise, reduced caloric intake, or stress. In response to the decreased energy availability in these states, the body regulates the reproductive potential down by decreasing the frequency of GnRH release from the hypothalamus. This leads to decreased secretion of gonadotropins (FSH and LH) and subsequent anovulation as well as secondary amenorrhea).

E.Intrauterine adhesions

F.Increased LH release and increased ovarian androgen production

42. A 35-year-old woman comes to the physician because of swelling of her right breast for the past 4 days. She also reports malaise and some pain with breastfeeding. Three weeks ago, she delivered a healthy 3500-g (7.7-lb) girl. She has no history of serious illness. Her mother died of breast cancer at the age of 55 years. Her only medication is a multivitamin. Her temperature is 38°C (100.4°F). Examination shows a tender, firm, swollen, erythematous right breast. Examination of the left breast shows no abnormalities. Which of the following is the most appropriate next step in management?

» Feedback

This patient presents with a tender, firm, swollen, erythematous breast, pain during breastfeeding, fever, and malaise. These symptoms started 2–4 weeks after birth, which suggests mastitis.

A.Dicloxacillin and continued breastfeeding

(Mastitis may arise in the postpartum period from overproduction of milk or insufficient drainage. The stagnant milk in breast ducts is then infected by bacteria in the infant's nostrils and throat. Treatment

involves antibiotics with strong activity against *Staphylococcus aureus* (the most common cause) and are safe during breastfeeding, such as dicloxacillin or cephalexin. Mothers should be encouraged to continue breastfeeding to empty milk reserves and prevent a breast abscess from developing).

B.Trimethoprim-sulfamethoxazole and continued breastfeeding

C.Continued breastfeeding, cold compresses, and ibuprofen

D.Stop breastfeeding and perform mammography

E.Stop breastfeeding and perform surgical drainage

F.Continued unilateral left-sided breastfeeding

G.Stop breastfeeding and perform breast biopsy

H.Stop breastfeeding and switch to formula

43. A 34-year-old woman comes to the physician requesting prenatal care. For the past 2 months, she has had increasing breast tenderness, nausea, 3-kg (6.6-lb) weight gain, and urinary frequency. She is not sure about the date of her last menstrual period. She has been trying to conceive with her husband since she stopped taking oral contraceptives 6 months ago; she was happy to tell him last week that she is pregnant. Her temperature is 37.2°C (99°F), pulse is 100/min, and blood pressure is 110/60 mm Hg. Physical examination shows mild, nontender abdominal enlargement. The cervical os is closed. Urine β-hCG is negative. Transvaginal ultrasonography shows no abnormalities. Which of the following is the most likely diagnosis?

» Feedback

Urine β-hCG tests have > 99% sensitivity from 14-days after the egg is implanted.

A.Delusion of pregnancy

B.Pseudocyesis

(Pseudocyesis is more common among women who want to get pregnant and have a history of several prior failed attempts. The combination of this patient's belief that she is pregnant with physical signs of early pregnancy (breast tenderness, nausea, weight gain, urinary frequency, mild abdominal enlargement), along with negative confirmatory testing (undetectable β-hCG, empty uterus on ultrasound) is consistent with this diagnosis. She should be gently informed that she is not pregnant and provided with counseling and therapy if needed).

C.Malingering

D.Pregnancy

E.Couvade syndrome

F.Incomplete abortion

G.Ectopic pregnancy

44. A 15-year-old girl is brought to the physician because of a 2-week history of vaginal discharge. She has type 1 diabetes mellitus and her only medication is insulin. Menses occur at

28- to 29-day intervals, and her last menstrual period was 3 weeks ago. She does not want to share information regarding sexual activity. She is at the 60th percentile for height and weight. Vital signs are within normal limits. Examination shows Tanner stage II breast development. Pelvic examination shows white, thin, odorless vaginal discharge. A wet mount of the discharge shows no abnormalities. Which of the following is the most likely diagnosis?

» Feedback

The cause of this patient's vaginal discharge is estrogen stimulation of the vaginal mucosa.

A.Bacterial vaginosis

B.Vaginal foreign body

C.Trichomoniasis

D.Physiologic leukorrhea

(Physiologic leukorrhea is non-purulent and does not have a strong odor. It is not irritating and therefore does not cause pruritus. Physiologic leukorrhea is typically seen at the onset of puberty (due to a surge in the levels of estrogen), around the time of ovulation (due to a peak in estrogen levels), prior to menstruation (due to pelvic congestion), and during pregnancy. Occasionally, physiologic leukorrhea can occur during the early neonatal period (due to the influence of maternal hormones).

E.Vaginal candidiasis

45. A 7-year-old girl is brought to the physician for a well-child examination. She is at 95th percentile for height and 70th percentile for weight. Examination shows elevated breast buds that extend beyond the areola. Coarse pubic and axillary hair is present. The external genitalia appear normal. An x-ray of the left wrist shows a bone age of 10 years. Serum luteinizing hormone levels do not increase following GnRH agonist stimulation. Which of the following is the most likely cause of these findings?

» Feedback

The development of secondary sexual characteristics in a 7-year-old girl indicates precocious puberty. The lack of elevation of LH levels following GnRH agonist stimulation indicates peripheral precocious puberty.

A.Granulosa cell tumor

(In girls, estrogen secreting ovarian tumors like granulosa cell tumors can cause isosexual peripheral precocious puberty. Due to the high levels of estrogen produced by these tumors, GnRH production is suppressed and there is no LH response to GnRH. The bone age in these patients is typically above their chronological age so that patients are taller than their peers but tend to have a short stature as adults if they remain untreated due to early closure of the epiphyseal plate. Patients with granulosa cell tumors often have a palpable mass in the lower abdomen and pelvic imaging shows enlarged ovaries. Regression of symptoms is expected after resection of the tumor (e.g., unilateral salpingo-oophorectomy).

B.Ovarian fibroma

C.McCune-Albright syndrome

D.Hypothalamic glioma

E.Congenital adrenal hyperplasia

46. A 42-year-old woman, gravida 3, para 3 comes to the physician because of a 14-month history of

prolonged and heavy menstrual bleeding. Menses occur at regular 28-day intervals and last 7 days with heavy flow. She also feels fatigued. She is sexually active with her husband and does not use contraception. Vital signs are within normal limits. Pelvic examination shows a firm, irregularly-shaped uterus consistent in size with a 16-week gestation. Her hemoglobin concentration is 9 g/dL, hematocrit is 30%, and mean corpuscular volume is 92 μm^3. Pelvic ultrasound shows multiple intramural masses in an irregularly enlarged uterus. The ovaries appear normal bilaterally. The patient has completed childbearing and would like definitive treatment for her symptoms. Operative treatment is scheduled. Which of the following is the most appropriate next step in management?

» Feedback

This patient's menorrhagia is likely caused by the multiple intramural masses, or leiomyomata, which are visualized on ultrasound. The goal of preoperative therapy in a patient with a leiomyoma is to decrease the size of the leiomyomatous uterus and to correct anemia by decreasing blood loss.

A.Progestin-only contraceptive pills

B.Red cell concentrates

C.Danazol

D.Leuprolide

(A GnRH agonist (e.g., leuprolide) is prescribed for patients with large and/or multiple uterine leiomyomas 2–3 months prior to surgery. GnRH agonists can reduce the size of leiomyomas by inducing hypoestrogenism and hypoprogesteronism. A reduction in the size of leiomyomatous uterus decreases surgical time, speeds up postoperative recovery, and may even enable a vaginal hysterectomy (which causes less blood loss than an abdominal hysterectomy). GnRH agonists also treat menorrhagia by inducing amenorrhea, which improves hematocrit levels before surgery).

E.Levonorgestrel-releasing intrauterine device

F.Tranexamic acid

G.Methotrexate

H.Estrogen-progestin contraceptive pills

47. A 3-year-old girl is brought to the physician by her parents for the evaluation of vaginal discharge for one month. The discharge is foul-smelling and contains some blood. The patient sometimes has pain with urination. She has not had increased urinary frequency or abdominal pain. Topical vaginal cream application did not improve the patient's symptoms. There is no personal or family history of serious illness. She lives with her parents and attends a local daycare center. Vital signs are within normal limits. Examination of the vulva and vaginal entrance shows an intact hymen, vaginal erythema with blood-tinged, foul-smelling discharge, and the tip of a white object. The remainder of the examination shows no abnormalities. Which of the following is the most appropriate next step in the management of this patient?

» Feedback

This toddler's presents with treatment-resistant, blood-tinged, foul-smelling vaginal discharge, and vaginal erythema, which suggest vulvovaginitis that appears to be caused by a vaginal foreign body.

A.Vaginal irrigation with warm saline

(In cases of a vaginal foreign body, the object must be removed to avoid further genitourinary inflammation, superinfection, or complications like fistula formation. Toilet paper is a typical cause in toddlers who are still being potty trained, and is likely the white object seen in this patient. Gentle irrigation of the vagina with saline solution or water in the outpatient setting is usually sufficient to dislodge the foreign body and is thus the first step in management).

B.Wet mount test

C.Colposcopy

D.Vacuum suction

E.Alert Child Protective Services

F.Administration of oral metronidazole

48. A 39-year-old woman comes to the physician because of a 6-month history of vaginal bleeding for 2 to 5 days every 2 to 3 weeks. The flow is heavy with passage of clots. Menarche occurred at the age of 10 years, and menses previously occurred at regular 28- to 32- day intervals and lasted for 5 days with normal flow. Her only medication is a multivitamin. She has no children. Her mother was diagnosed with ovarian cancer at age 60. She is 158 cm (5 ft 2 in) tall and weighs 86 kg (190 lb); BMI is 34 kg/m^2. Her temperature is 36.6°C (97.8°F), pulse is 86/min and blood pressure is 110/70 mm Hg. Pelvic examination shows a normal sized uterus. Laboratory studies, including a complete blood count, thyroid function tests, and coagulation studies are within the reference ranges. A urine pregnancy test is negative. The remainder of the examination shows no abnormalities. Which of the following is the most appropriate next step in management?

» Feedback

Obesity is associated with unopposed estrogen stimulation, which is a risk factor for endometrial hyperplasia.

A.Endometrial ablation

B.Endometrial biopsy

(Endometrial biopsy is indicated as a first-line test in the diagnostic workup of patients with abnormal uterine bleeding who are more than 45 years old, or in patients younger than age 45 who have risk factors for endometrial cancer (obesity, polycystic ovary syndrome, nulliparity, early menarche, diabetes mellitus, tamoxifen therapy) or do not respond to medical management. Assessment of the biopsy pathology provides a definitive diagnosis of any underlying cause of endometrial neoplasia, including endometrial carcinoma (with 97% sensitivity), making this the appropriate next step for this patient).

C.Abdominal ultrasonography

D.Combined oral contraceptives

E.Diagnostic laparoscopy

49. A 55-year-old woman comes to the physician 10 days after noticing a mass in her left breast while bathing. She is concerned that it is breast cancer because her sister was diagnosed with breast cancer 3 years ago at 61 years of age. Menopause occurred 6 months ago. She has smoked 2 packs of cigarettes daily for 30 years. She took an oral contraceptive for 20 years. Current medications include hormone replacement therapy and a calcium supplement. Examination shows a 2.5-cm, palpable, hard, nontender, mass in the upper outer quadrant of the left breast; there is tethering of the skin over the lump. Examination of the right breast and axillae shows no abnormalities. Mammography shows an irregular mass with microcalcifications and oil cysts. A core biopsy shows foam cells and multinucleated giant cells. Which of the following is the most appropriate next step in management?

» Feedback

Ultrasonography would also show oil cysts.

A.Neoadjuvant chemotherapy

B.Trastuzumab for 1 year

C.Reassurance

(The presence of oil cysts on mammography is usually pathognomonic for fat necrosis of the breast, which is usually related to trauma or after biopsy or surgery. If oil cysts are initially seen on ultrasonography, mammography should be performed. If mammography findings are suspicious or inconclusive, a biopsy should be done to confirm the diagnosis and rule out potential cancer. Biopsy findings of foam cells and multinucleated giant cells confirms the diagnosis. Since fat necrosis is a benign condition without increased risk of cancer, no further treatment is required).

D.Lumpectomy with axillary staging

E.Anastrozole for 5 years

F.Tamoxifen for 5 years

G.Modified radical mastectomy

H.Wide excision of the lump

I.Simple mastectomy

50. A 14-year-old girl comes to the physician because of excessive flow and duration of her menses. Since menarche a year ago, menses have occurred at irregular intervals and lasted 8–9 days. Her last menstrual period was 5 weeks ago with passage of clots. She has no family or personal history of serious illness and takes no medications. She is at the 50^{th} percentile for height and 20^{th} percentile for weight. Physical examination shows no abnormalities. A urine pregnancy test is negative. Which of the following is the most likely cause of this patient's symptoms?

» Feedback

The most common cause of menorrhagia in postmenarchal adolescents are alternating ovulatory and anovulatory cycles due to an immature hypothalamic–pituitary–ovarian axis.

A.Embryonal rhabdomyosarcoma

B.Endometrial polyp

C.Decreased thyroxine production

D.Inadequate gonadotropin production

(Most cases of menorrhagia within the first two years post menarche are due to an immature hypothalamic-pituitary-ovarian axis and subsequent lack of cyclic endometrial stimulation. As a result, there are constant, non-cyclical levels of estrogen that stimulate endometrial proliferation leading to painless, irregular bleeding, usually including periods of both amenorrhea and prolonged and/or heavy bleeding. Treatment usually includes oral contraceptives or NSAIDs. Other causes for menorrhagia in adolescents include pregnancy and miscarriage, coagulation disorders, PID, IUDs, or underlying structural pelvic pathologies, for which there are no signs in this patient).

E.Inflammation of the endometrium

F.Defective von Willebrand factor

G.Excessive androgen production

H.Uterine fibroid

51. A 33-year-old woman comes to the physician for recurrent 1-week episodes of headaches that occur every few weeks for the last year. During these episodes she also has bouts of lower abdominal pain and breast tenderness. She is often irritable at these times. Her menses occur at regular 28-day intervals with moderate flow. Her last menstrual period was 3 weeks ago. She drinks two to five beers on social occasions and used to smoke a pack of cigarettes daily, but stopped 6 months ago. Her mother and sister have hypothyroidism. Physical examination shows no abnormalities. Which of the following is most likely to confirm the diagnosis?

» Feedback

This patient presents with recurrent episodes of headaches and mood disturbances. These symptoms occurring in combination with lower abdominal pain and breast tenderness every 3 weeks are highly suspicious of premenstrual syndrome.

A.Screening neuroimaging

B.Detailed psychosocial assessment

C.Therapeutic trial with nicotine gum

D.Assessment of thyroid hormones

E.Serial measurements of gonadotropin levels

F.Maintaining a menstrual diary

(The diagnosis of premenstrual syndrome requires a clear pattern of symptoms (e.g., headache, irritability, abdominal pain) associated with menstrual periods. A menstrual diary would provide evidence that the patient's symptoms occur concurrently with her menstrual period).

52. An otherwise healthy 45-year-old woman comes to the physician because of a 2-week history of an itchy rash on her left nipple. The rash began as small vesicles on the nipple and spread to the areola. It has become a painful ulcer with yellow, watery discharge that is occasionally blood-tinged. She has asthma treated with theophylline and inhaled salbutamol. Her younger sister was diagnosed with endometrial cancer a year ago.

Examination shows a weeping, ulcerated lesion involving the entire left nipple-areolar complex. There are no breast masses, dimpling, or axillary lymphadenopathy. The remainder of the examination shows no abnormalities. Which of the following is the most likely diagnosis?

» Feedback

Cytology of this lesion would show intraepithelial adenocarcinoma cells within the epidermis of the nipple.

A.Inflammatory breast cancer

B.Mastitis

C.Breast abscess

D.Breast fibroadenoma

E.Paget disease of the breast

(Paget disease of the breast is a ductal carcinoma that infiltrates the nipple-areola complex causing an erythematous, scaly or vesicular rash that is accompanied by pruritus, burning, and/or nipple retraction. The rash eventually ulcerates and causes blood-tinged nipple discharge).

53. A 16-year-old girl is brought to the physician by her mother because she has not attained menarche. She has no history of serious illness. She is at 50th percentile for height and weight. Examination shows no breast glandular tissue and no pubic hair development. The remainder of the examination shows no abnormalities. A urine pregnancy test is negative.
An ultrasound of the pelvis shows no abnormalities. Which of the following is the most appropriate next step in management?

» Feedback

In adolescents with primary amenorrhea despite normal uterine development, gonadotropin levels should be tested.

A.GnRH stimulation test

B.Reassurance

C.Progesterone challenge test

D.MRI of the brain

E.Serum FSH level

(Evaluation of primary amenorrhea includes measurement of FSH and LH levels and examination of the uterus and secondary sexual characteristics (as a marker of ovary function and estrogen production). In all cases, pregnancy should be excluded first. A high serum FSH level is indicative of gonadal dysgenesis, most commonly due to chromosomal aberrations such as Turner syndrome (45, XO). Other common causes of primary amenorrhea include hypogonadotropic hypogonadism (low FSH) and Müllerian agenesis (absence of the vagina and, in some cases, the uterus). Young women may also have hypothalamic amenorrhea with low FSH due to poor nutrition, weight loss, and excessive exercise, as seen in anorexia nervosa).

F.Serum testosterone level

54. A 43-year-old woman comes to the physician because of a 3-month history of increased flow and duration of her menses. Menses previously occurred at regular 28-day intervals and lasted 5

days with normal flow. They now last 8–9 days and the flow is heavy with the passage of clots. During this period, she has also had lower abdominal pain that begins 2–3 days prior to onset of her menses and lasts for 2 days after the end of her menses. She has three children. Her mother died of endometrial cancer at the age of 61 years. Her temperature is 37°C (98.6°F), pulse is 86/min, and blood pressure is 110/70 mm Hg. Pelvic examination shows a uniformly enlarged, boggy uterus consistent in size with an 8-week gestation that is tender on palpation. A urine pregnancy test is negative. Which of the following is the most likely cause of this patient's findings?

» Feedback

Menorrhagia and dysmenorrhea in a multiparous woman with a diffusely enlarged and tender uterus is suggestive of adenomyosis.

A.Benign tumor of the myometrium

B.Pedunculated endometrial mass

C.Malignant proliferation of trophoblasts

D.Endometrial tissue within the uterine wall

(Ectopic endometrial glandular tissue within the uterine wall (myometrium) is characteristic for uterine adenomyosis, which has a peak incidence between 35–50 years of age. The ectopic endometrial tissue induces hypertrophy and hyperplasia of the surrounding myometrium and results in a symmetrically enlarged uterus similar to a uterus in pregnancy. Secretions from ectopic glands within the myometrium cause pain and cramping, which become worse during menses. Hysterectomy is the treatment of choice in severe disease. The definitive diagnosis of adenomyosis requires histological examination of a hysterectomy specimen, and although the diagnosis could be further supported by MRI and uterine biopsy, these tools would not provide any extra benefits for treatment).

E.Malignant transformation of endometrial tissue

F.Abnormal thickening of endometrial tissue

G.Inflammation of the endometrium

H.Endometrial tissue within the ovaries

55. A 54-year-old woman comes to the physician because she has not had her menstrual period for the last 5 months. Menarche occurred at the age of 11 years, and menses occurred at regular 28-day intervals until they became irregular at 30- to 45-day intervals with light flow 2 years ago. She does not have vaginal dryness or decreased libido. She had four successful pregnancies and breastfed all her children until the age of 2 years. There is no personal or family history of serious illness. Except when she was pregnant, she has smoked one pack of cigarettes daily for 30 years. She does not drink alcohol. She is 167 cm (5 ft 5 in) tall and weighs 92 kg (203 lb); BMI is 33 kg/m^2. Her vital signs are within normal limits. Physical examination shows no abnormalities. Which of the following best explains this patient's

lack of symptoms other than amenorrhea?

» Feedback

This 54-year-old patient presents with secondary amenorrhea for 5 months, which is suggestive of menopause.

A.Breastfeeding

B.Early menarche

C.Obesity

(Increased adipose tissue is the most likely explanation for this patient's lack of symptoms.
In menopausal women, estrogens are mainly produced by peripheral aromatase conversion
of adrenal androgens in adipose tissue, and therefore symptoms of menopause are often milder
in obese women).

D.Smoking

E.Multiparity

56. A 25-year-old woman comes to the physician because of headache and difficulty sleeping for the past 2 days. She states that she has had similar symptoms over the past several months and that they occur every month around the same time. The episodes are also frequently accompanied by decreased concentration, angry feelings, and cravings for sweet foods. She says that during these episodes she is unable to work efficiently, and often has many arguments with her colleagues and friends. Menses occur at regular 26-day intervals and last 5 days. Her last menstrual period started about 3 weeks ago. She has smoked one pack of cigarettes daily for the last 8 years. She takes no medications. She appears irritable. The patient is oriented to person, place, and time. Physical examination shows no abnormalities. Which of the following is the most appropriate treatment?

» Feedback

This patient presents with recurrent episodes of headaches, sleeping and concentration problems, and mood swings. These symptoms occur every month around the same time, preceding her menstrual period, which indicates premenstrual syndrome. Behavioral changes severe enough to cause a disturbance of her daily functional capacity suggests a diagnosis of premenstrual dysphoric disorder (PMDD).

A.Cognitive behavioral therapy

B.Oral contraceptives

C.Bilateral oophorectomy

D.Avoidance of nicotine

E.Naproxen

F.Fluoxetine

(Fluoxetine and other SSRIs are recommended by the ACOG as first-line therapy for PMDD, the severe form of premenstrual syndrome, as they have been shown to be effective in alleviating physical and behavioral symptoms with minimal side effects. The monthly recurrence of this patient's symptoms around the time of her menses impairs her daily functional capacity, which is the criteria for premenstrual syndrome and an indication for pharmacological treatment. Because nicotine is a known triggering

factor for PMS, the patient may also be advised to stop smoking).

57. A 22-year-old woman comes to the physician for the evaluation of irregular menstrual bleeding. Menses have occurred at 45- to 90-day intervals since menarche at the age of 15 years. Her last menstrual period was 5 weeks ago. The patient reports that she was too embarrassed to discuss this issue with anyone until now. Over the past two years, she was unable to become pregnant despite having unprotected sexual intercourse with her husband on a regular basis. There is no personal or family history of serious illness. She is 170 cm (5 ft 7 in) tall and weighs 85 kg (187 lb); BMI is 29.4 kg/m^2. Her vital signs are within normal limits. Examination shows oily skin and severe facial acne. There is abnormal pigmented hair on the upper lip and around both nipples. The patient wishes to have children. In addition to recommending lifestyle modifications, which of the following is the most appropriate step in management?

» Feedback

This patient presents with oligomenorrhea, symptoms of hyperandrogenism (hirsutism, acne vulgaris), and infertility. Together with obesity, these features suggest polycystic ovary syndrome (PCOS).

A.In vitro fertilization with patient's egg

B.In vitro fertilization with donor egg

C.Progesterone therapy

D.Bromocriptine therapy

E.Clomiphene therapy

(Clomiphene citrate is considered a first-line treatment for women with PCOS who wish to conceive. While lifestyle modification should be encouraged in this patient (and may indeed allow her to conceive), clomiphene citrate will stimulate ovulation and further increase her chances. Around 80% of all women with PCOS ovulate after taking clomiphene citrate, with 50% going on to conceive).

58. A 36-year-old woman comes to the physician to discuss contraceptive options. She is currently sexually active with one male partner, and they have not been using any contraception. She has no significant past medical history and takes no medications. She has smoked one pack of cigarettes daily for 15 years. She is allergic to latex and copper. A urine pregnancy test is negative. Which of the following contraceptive methods is contraindicated in this patient?

» Feedback

This patient's age and smoking history increase her risk of thromboembolism if she uses a particular form of contraception.

A.Progestin injection

B.Diaphragm with spermicide

C.Progestin-only pill

D.Intrauterine device

E.Condoms

F.Combined oral contraceptive pill

(Combined oral contraceptive pills (those containing both estrogen and progestin) are contraindicated in

women over 35 years who smoke due to an increased risk of venous thromboembolism. Estrogen is associated with coagulopathy because it increases the plasma concentrations of several clotting factors and fibrinogen. Advancing age and smoking also affect blood clotting and circulation. Other absolute contraindications for the use of estrogen-containing OCPs include cardiovascular diseases (e.g., CAD, DVT, stroke, HTN), metabolic disorders (e.g., of the liver, insulin-dependent diabetes), estrogen-dependent tumors, SLE, and/or vasculitis).

59. A 70-year-old woman, gravida 5, para 5, comes to the physician for the evaluation of sensation of vaginal fullness for the last six months. During this period, she has had lower back and pelvic pain that is worse with prolonged standing or walking. The patient underwent a hysterectomy at the age of 35 years because of severe dysmenorrhea. She has type 2 diabetes mellitus and hypercholesterolemia. Medications include metformin and atorvastatin. Vital signs are within normal limits. Pelvic examination elicits a feeling of pressure on the perineum. Pelvic floor muscle and anal sphincter tone are decreased. Pelvic examination shows protrusion of posterior vaginal wall with Valsalva maneuver and vaginal discharge. Which of the following is the most likely diagnosis?

» Feedback

This patient presents with a disorder that is especially common among elderly women. Risk factors include postmenopausal status, multiparity, prior pelvic surgery, and diabetes mellitus.

A. Bartholin gland cyst

B. Atrophic vaginitis

C. Infectious vulvovaginitis

D. Enterocele

(Pelvic pain and/or pressure, which worsens on standing or walking, in the presence of posterior vaginal wall protrusion and lax sphincter tone on pelvic examination, is diagnostic of enterocele. Posterior vaginal wall prolapse can either be an enterocele (upper 1/3rd of the posterior vaginal wall) or rectocele (middle 1/3rd of the posterior vaginal wall). Both can occur concurrently).

E. Vaginal cancer

60. A 24-year-old woman comes to the physician for a routine health maintenance examination. She feels well. Menses occur at regular 28-day intervals and last for 3–5 days, with normal flow. They are occasionally accompanied by pain. Three years ago, she was diagnosed with chlamydial cervicitis and treated with doxycycline. She has been sexually active with multiple partners since the age of 18 years. She regularly uses condoms for contraception. She drinks 2–3 beers on weekends and smokes half a pack of cigarettes daily. Vital signs are within normal limits. Physical examination including a complete pelvic exam shows no abnormalities. A Pap smear shows a low-grade squamous epithelial lesion (LSIL). Which of the following

is the most appropriate next step in management?

» Feedback

The type of lesion and this patient's age play the biggest role in determining how best to proceed in this situation.

A.Colposcopy with endocervical sampling

B.Colposcopy with endocervical and endometrial sampling

C.Repeat Pap smear in 12 months

(Pap smear should be repeated twice at 12-month intervals in patients 21–24 years of age whose previous Pap smear has shown LSIL. The lesion usually spontaneously resolves over time and the risk of malignant transformation into invasive cervical cancer is low. If repeat testing is negative twice, the patient may return to routine screening. If the repeat Pap smear shows ASC-H , HSIL, or AGC, colposcopy should be performed).

D.Repeat Pap smear in 3 years

E.Loop electrosurgical excision procedure

F.Repeat Pap smear in 3 months

61. A 23-year-old woman comes to the emergency department because of increasing abdominal pain with associated nausea and vomiting. The symptoms began suddenly after having intercourse with her partner six hours ago. There is no associated fever, diarrhea, vaginal bleeding, or discharge. Menarche was at the age of 13 years and her last menstrual period was 4 weeks ago. She uses combination contraceptive pills. She had an appendectomy at the age of 12. Her temperature is 37.5°C (99.5°F), pulse is 100/min, respirations are 22/min, and blood pressure is 110/70 mm Hg. Abdominal examination shows severe right lower quadrant tenderness with associated rebound and guarding. Pelvic examination shows scant, clear vaginal discharge and right adnexal tenderness. There is no cervical wall motion tenderness. Her hemoglobin concentration is 10.5 g/dL, leukocyte count is 9,000/mm^3, and platelet count is 250,000/mm^3. A urine pregnancy test is negative. Which of the following imaging findings is most likely?

» Feedback

Localized adnexal tenderness that started suddenly is typical for ovarian torsion.

A.Echogenic tubal ring

B.Decreased ovarian blood flow on doppler

(Ovarian torsion is a common gynecologic emergency. It typically presents with enlarged, edematous ovaries on pelvic ultrasound and decreased ovarian blood flow on Doppler ultrasound because rotation of the ovary occludes the ovarian artery and/or vein. The main risk factor for ovarian torsion is ovarian enlargement due to ectopic pregnancy, tumors, or cysts. Women of reproductive age are most commonly affected. Laparoscopic evaluation confirms the diagnosis. Surgical detorsion with ovarian conservation is recommended if ovaries are viable. If the ovaries are necrotic or malignancy is suspected, salpingo-oophorectomy should be performed).

C.Complex, echogenic intrauterine mass

D.Distended fallopian tube with incomplete septations

E.Increased ovarian blood flow on doppler

62. A 30-year-old woman comes to the physician with her husband because they have been trying to conceive for 15 months with no success. They have been sexually active at least twice a week. The husband sometimes has difficulties maintaining erection during sexual activity. During attempted vaginal penetration, the patient has discomfort and her pelvic floor muscles tighten up. Three years ago, the patient was diagnosed with body dysmorphic disorder. There is no family history of serious illness. She does not smoke or drink alcohol. She takes no medications. Vital signs are within normal limits. Pelvic examination shows normal appearing vulva without redness; there is no vaginal discharge. An initial attempt at speculum examination is aborted after the patient's pelvic floor muscles tense up and she experiences discomfort. Which of the following is the most likely diagnosis?

» Feedback

The best initial management of this patient's condition is pelvic floor physical therapy.

A.Vulvodynia

B.Inadequate lubrication

C.Vulvovaginitis

D.Psychogenic dyspareunia

E.Painful bladder syndrome

F.Genitopelvic pain disorder

(This patient's symptoms are suggestive of genitopelvic pain/penetration disorder (penetration disorder), a condition that is characterized by persistent or recurrent difficulties during sexual intercourse. Characteristic symptoms include difficulty with vaginal penetration, vulvovaginal or pelvic pain during intercourse, anticipatory anxiety, and pronounced tightening of the pelvic floor muscles during attempted vaginal penetration. The disorder often presents in individuals with relationship issues (e.g., sexual problems also present in the partner), poor body image (e.g., body dysmorphic disorder), and psychiatric disorders (e.g., depression, anxiety).

G.Endometriosis

63. A 26-year-old woman comes to the physician because of progressively worsening episodic pelvic pain for 2 years. The pain starts a few days before her menstrual period and lasts about 10 days. She has tried taking ibuprofen, but her symptoms do not improve. Menses have occurred at regular 29-day intervals since menarche at the age of 11 years and last for 5–7 days. The first day of her last menstrual period

was 2 weeks ago. She is sexually active with her boyfriend and has noticed that intercourse is often painful; they use condoms inconsistently. Vital signs are within normal limits. Pelvic examination shows a normal vagina and cervix. Bimanual examination shows a normal-sized uterus and no palpable adnexal masses. Urine pregnancy test is negative. Which of the following is the most appropriate next step in management?

» Feedback

In a woman of childbearing age, chronic dysmenorrhea and dyspareunia with no evidence of pelvic pathology on examination (e.g., enlarged irregular uterus, adnexal mass, cervical discharge, cervical motion tenderness) is highly suggestive of endometriosis.

A.Perform cervical and urethral swab

B.Perform MRI of the pelvis

C.Schedule hysterectomy

D.Prescribe gonadotropin-releasing hormone agonists

E.Perform transabdominal ultrasound

F.Prescribe androgenic steroids

G.Prescribe estrogen-progestin contraceptives

(The patient most likely suffers from endometriosis and has already tried NSAIDs that did not relieve her symptoms. The next step is empirical treatment with combined contraceptives. Combined oral contraceptives decrease pelvic pain, the size of endometriotic lesions, and the recurrence of lesions. If the patient's primary complaint was infertility or examination revealed adnexal masses or an enlarged irregular uterus, pelvic ultrasound would have been indicated. A pelvic ultrasound should also be performed if treatment does not relieve symptoms).

H.Schedule laparoscopy

64. A 15-year-old girl comes to the physician because she has not had menstrual bleeding for the past 3 months. Menses had previously occurred at irregular 15–45 day intervals with moderate to heavy flow. Menarche was at the age of 14 years. She started having sexual intercourse with her boyfriend about 3 months ago. Six months ago she had a manic episode, which was treated with risperidone. Her mother has PCOS and her father has diabetes mellitus. She is very conscious of her weight and appearance. She is 171 cm (5 ft 6 in) tall and weighs 79 kg (174 lb); BMI is 27.02 kg/m^2. Her temperature is 37°C (98.6°F), pulse is 60/min, and blood pressure is 116/70 mm Hg. The abdomen is soft and nontender. Pelvic examination shows a normal vagina and cervix. Serum hormone studies show:

Prolactin	16 ng/mL
Thyroid-stimulating hormone	3.8 µU/mL
Follicle-stimulating hormone	6 mIU/mL
Luteinizing hormone	5.1 mIU/mL

Progesterone	0.8 ng/mL (follicular N <3; luteal N >3–5)
Testosterone	2.2 nmol/L (N <3.5)

A urine pregnancy test is negative. Which of the following is the most likely cause of her symptoms?

» Feedback

Oligomenorrhea, which is preceded by irregular menstrual cycles and menorrhagia, is a common occurence in adolescents during the first few months/years after menarche.

A.Uterine fibroids

B.Congenital defect of the Mullerian ducts

C.Purging behavior

D.Polycystic ovaries

E.Anovulation

(Oligomenorrhea combined with low progesterone levels is highly suggestive of anovulation. These anovulatory cycles are characterized by the absence of ovulation and a luteal phase. It is a common, physiological finding in adolescent girls during the first few months or year after menarche and is caused by immaturity of the hypothalamic-pituitary-gonadal axis. Patients should be reassured that their menstrual cycle will become more regular and no further treatment is required at this time. Other causes of anovulation include polycystic ovarian syndrome, hyperprolactinemia, premature ovarian failure, hyperthyroidism, obesity, anorexia, and stress).

F.Drug-induced hypogonadism

G.Primary ovarian insufficiency

65. A 50-year-old woman, gravida 5, para 5, comes to the physician for the evaluation of decreased sexual desire for approximately 6 months. She has been sexually active with her husband but reports that she has no desire in having sexual intercourse anymore. She states that she feels guilty and is worried about losing her husband if this problem goes on for a longer period of time. She also reports that they have had several fights recently due to financial problems. She has problems going to sleep and wakes up often, and is tired throughout the day. One year ago, the patient underwent hysterectomy with bilateral salpingo-oophorectomy due to uterine prolapse. Her last menstrual period was 2 years ago. She does not smoke. She drinks 3–4 glasses of wine daily. Vital signs are within normal limits. Physical examination shows no abnormalities except for an enlarged liver. Which of the following most likely explains this patient's loss of libido?

A.Chronic alcohol intake

B.Major depressive disorder

C.Normal aging

D.Decreased testosterone

(Testosterone is the hormone responsible for sexual desire in both men and women. Because testosterone in women is partially produced in the ovaries, a hysterectomy with bilateral salpingo-oophorectomy leads to surgical menopause with decreased testosterone levels, loss of libido, and an increased risk of osteoporosis. Testosterone is also produced in the adrenal glands. Therefore, levels do not subside completely).

E.Elevated prolactin

F.Decreased estrogen

G.Stress

66. A 32-year-old nulligravid woman comes to the physician because of 2 weeks of postcoital pain and blood-tinged vaginal discharge. She has been sexually active with one male partner for the past 3 months. They do not use condoms. Her only medication is a combined oral contraceptive that she has been taking for the past 2 years. She states that she takes the medication fairly consistently, but may forget a pill 2–3 days per month. One year ago, her Pap smear was normal. She has not received the HPV vaccine. The cervix is tender to motion on bimanual exam. There is bleeding when the cervix is touched with a cotton swab during speculum exam. Which of the following is the most likely diagnosis?

» Feedback

The cervical motion tenderness and friable cervix in this patient suggest cervicitis.

A.Endometriosis

B.Cervix trauma

C.Ectopic pregnancy

D.Uterine leiomyomas

E.Breakthrough bleeding

F.Early uterine pregnancy

G.Cervical dysplasia

H.Chlamydia infection

(Infections with *Chlamydia trachomatis* and/or *Neisseria gonorrhea* are the most common causes of cervicitis. Clinical features include purulent, potentially bloody, vaginal discharge, dyspareunia, and postcoital bleeding. Bimanual examination shows motion tenderness of the cervix, while pelvic examination reveals an erythematous, edematous, friable cervix that bleeds upon contact. This patient's history and increased risk of STIs (unprotected intercourse, new sexual partner) make cervicitis due to a chlamydial infection the most likely diagnosis).

67. A 24-year-old woman comes to the physician for a routine pelvic examination. She feels well. Menses occur at 30-day intervals and last 7 days. Her last menstrual period was 6 days ago. She has no history of abnormal Pap smears; her last Pap smear was 13 months ago. She is sexually active with three male partners and uses condoms consistently. She has never been tested for sexually transmitted infections. Her 54-year-old mother has breast cancer. She is up-to-date on her Tdap, MMR, and varicella vaccinations. Her temperature is 37.1°C (98.8°F), pulse is 68/min, and blood pressure is 108/68 mm Hg. Physical examination shows no abnormalities. In addition to HIV, gonorrhea, and chlamydia testing, which of the following is the most appropriate recommendation at this time?

» Feedback

This patient's current age is crucial to determine the most appropriate recommendation at this time.

A.HPV vaccination

(As a part of the routine immunization schedule, 2 doses of HPV vaccine should be administered 6 months apart to all individuals 11–12 years of age. Current guidelines also recommend vaccination with 3 doses of nine-valent HPV vaccine for all unvaccinated female patients 13–26 years of age. Although the FDA has approved the HPV vaccine for patients up to age 45, it is not routinely recommended for patients > 26 years old by the CDC).

B.Pap smear

C.Syphilis testing

D.Mammography

E.Pregnancy test

F.Co-testing in 2 years

G.HPV testing

68. A 28-year-old woman comes to the physician because she had a positive pregnancy test at home. She reports feeling nauseated and has vomited several times over the past week. During this period, she has also had increased urinary frequency. She is sexually active with her boyfriend and they use condoms inconsistently. Her last menstrual period was 5 weeks ago. Physical examination shows no abnormalities. A urine pregnancy test is positive. A pap smear is positive for a high-grade squamous intraepithelial lesion. Colposcopy shows cervical intraepithelial neoplasia grade II and III. Which of the following is the most appropriate next step in the management of this patient?

Fedback

This patient presents with a high-grade squamous intraepithelial lesion (HSIL) and signs of CIN 2, 3 on colposcopy. Since the patient is pregnant, management is different.

A.Reevaluation with cytology and colposcopy 6 weeks after birth

(Reevaluation with cytology and colposcopy 6 weeks after birth is acceptable in this patient with a CIN 2+ (precancerous) lesion. High-grade lesions discovered during pregnancy have a high rate of regression in the postpartum period. Biopsy and treatment can usually be safely delayed until after delivery if invasive disease has been excluded via colposcopy. An alternative approach consists of reevaluation with cytology and colposcopy not more often than every 12 weeks during pregnancy; biopsies, however, should only be taken during pregnancy if appearance of the lesion worsens (e.g., large confluent or multiple discrete lesions) or cytology suggests invasive cancer. Endocervical curettage and endometrial sampling are contraindicated in pregnant women).

B.Colposcopy and cytology at 6-month intervals for 12 months

C.Endocervical curettage

D.Perform loop electrosurgical excision

E.Diagnostic excisional procedure

69. A 62-year old female comes to the physician because of vaginal spotting and urinary urgency for the past 4 days. She has had no fever, abdominal pain, or diarrhea. Menopause occurred at 52 years of age. Her last Pap smear 1 year ago was normal. She has hypertension,

hypercholesterolemia, and diabetes. Medications include atorvastatin, hydrochlorothiazide, metformin, and aspirin. She is sexually active with her husband. Her temperature is 37°C (98.6°F), pulse is 95/min, respirations are 12/min, and blood pressure is 155/65 mm Hg. Pelvic exam demonstrates a 4 x 3 cm firm, immobile erythematous mass on the right inner vaginal wall. Which of the following is the most appropriate next step in management?

» Feedback

Vaginal bleeding in a postmenopausal woman is a malignancy until proven otherwise!

A.Vulvectomy

B.Transvaginal ultrasound

C.Pap smear

D.Biopsy of the mass

(Vaginal cancer most commonly presents as postmenopausal bleeding, and pelvic exam will usually show a mass (or plaque) on the vaginal wall, as seen in this patient. Some patients will have symptoms related to local extension of the disease, such as urinary frequency. Definitive diagnosis requires a biopsy of the suspicious lesion and histological confirmation. The majority of vaginal cancers will be carcinomas, related to high-risk HPV. If biopsy is positive, she will require clinical staging with cystoscopy, proctoscopy, and chest and skeletal radiography. Treatment requires surgical excision with or without radiation and chemotherapy, depending on the stage of the cancer).

E.Vaginal colposcopy

F.Loop electrosurgical excision procedure

G.Incision and drainage

H.Urine gonorrhea and chlamydia testing

70. A 35-year-old woman comes to the physician for sleeping problems and the inability to concentrate for 3 months. She says she is worried because she and her husband have been trying to conceive for more than a year with no success. Conception by in vitro fertilization was attempted once 3 months ago but was unsuccessful. Analysis of her husband's semen has shown normal sperm counts and morphology. She has a 6-year-old daughter who was born at term after an uncomplicated pregnancy. She has no history of severe illness and tries to stay healthy by going to the gym an hour per day. Her menses occur at regular 28-day intervals and last 5 to 6 days; her last menstrual period started 2 days ago. Physical examination shows no abnormalities. Which of the following is the most likely cause of this patient's inability to conceive?

A.Polycystic ovarian syndrome

B.Pelvic inflammatory disease

C.Asherman's syndrome

D.Diminished ovarian reserve

(Diminished ovarian reserve (DOR) is characterized by a decline in functioning oocytes and is most often a normal part of aging, although it can also be the result of an underlying disease or injury to the ovaries. DOR is present in about 10% of women who undergo IVF and does not cause any symptoms, although a shortening of the menstrual cycle is sometimes observed).

E.Hypogonadotropic hypogonadism

F.Premature ovarian failure

71. A 22-year-old primigravid woman at 12 weeks' gestation comes to the physician because of several hours of abdominal cramping and passing of large vaginal blood clots. Her temperature is 36.8°C (98.3°F), pulse is 75/min, and blood pressure is 110/65 mmHg. The uterus is consistent in size with a 12-week gestation. Speculum exam shows an open cervical os and blood clots within the vaginal vault. Transvaginal ultrasound shows an empty gestational sac. The patient is worried about undergoing invasive procedures. Which of the following is the most appropriate next step in management?

» Feedback

This patient's history of passing large blood clots suggests expulsion of products of conception. A retained gestational sac and an open cervical os indicate incomplete abortion.

A.Dilation and curettage

B.Expectant management

(Expectant management is a reasonable treatment option in patients with an incomplete abortion at < 14 weeks' gestation that are hemodynamically stable, show no signs of infection, and do not want to undergo invasive procedures such as this patient. If expulsion of the remaining products of conception does not occur within four weeks or if signs of infection occur, surgical treatment is indicated. Medical evacuation (e.g., with misoprostol) is another option in patients that do not want to undergo surgical treatment).

C.Methotrexate therapy

D.Cervical cerclage

E.Serial beta-hCG measurement

F.Oxytocin therapy

72. A 21-year-old female college student comes to the physician because of a two-week history of vaginal itching and burning. She also noticed white vaginal discharge despite cleaning her genital area daily using a "soap-free, natural" vaginal douche. She is worried that she might have contracted a sexually transmitted disease after meeting her new boyfriend around one month ago. She has type 1 diabetes mellitus. The patient swims for the college swimming team. She had an intrauterine device implanted 3 months ago and does not use barrier protection. She smokes one pack of cigarettes per day and does not drink alcohol. Speculum examination shows an erythematous vagina covered in copious white discharge. Her vaginal pH is 4.4 and the microscopic image of a KOH preparation shows multiple pseudohyphae. Which of the following is the greatest predisposing factor for this patient's condition?

» Feedback

Multiple pseudohyphae on wet mount preparation are characteristic of *Candida* infection.

A.Smoking history

B.Regular use of swimming pools

C.Frequent vaginal douching

D.Unprotected sexual intercourse

E.Intrauterine device

F.Diabetes mellitus

73. A 17-year-old girl comes to the physician because of left lower abdominal pain for 1 day. She describes the pain as 6 out of 10 in intensity. Over the past 5 months, she has had similar episodes of pain that occur once a month and last 1 to 2 days. Menses occur at regular 28-day intervals and last 5 to 6 days. Menarche was at the age of 13 years, and her last menstrual period was 2 weeks ago. She has been sexually active with 1 male partner in the past and has used condoms inconsistently. She tested negative for sexually transmitted infections on her last visit 6 months ago. Abdominal and pelvic examination shows no abnormalities. A urine pregnancy test is negative. Which of the following is the most appropriate next step in the management of this patient's symptoms?

» Feedback

Recurrent midcycle, unilateral, lower abdominal pain in an adolescent girl is suggestive of mittelschmerz.

A.Progestin-only contraceptive pill

B.CT scan of the pelvis

C.Diagnostic laparoscopy

D.Reassurance

(Mittelschmerz is a common, benign phenomenon in women of reproductive age that is caused by follicular enlargement or rupture of the follicular cyst during ovulation, which leads to the release of small amounts of intraperitoneal fluid and subsequent peritoneal irritation. The pain is self-limited and usually subsides within hours to two days. Patients should be reassured and receive symptomatic treatment with NSAIDs as needed).

E.Nucleic acid amplification testing

F.Combined oral contraceptive pill

G.Pelvic ultrasonography

74. A 24-year-old woman comes to the physician because she had unprotected intercourse with her boyfriend the previous day. She has had regular menses since menarche at the age of 12. Her last menstrual period was 3 weeks ago. She has no history of serious illness but is allergic to certain jewelry and metal alloys. She takes no medications. A urine pregnancy test is

negative. She does not wish to become pregnant until she finishes college in six months. Which of the following is the most appropriate next step in management?

A.Insert copper-containing intra-uterine device

B.Insert progestin-containing intra-uterine device

C.Administer mifepristone

D.Administer ulipristal acetate

(Ulipristal acetate is an effective emergency contraception option if administered within five days of unprotected intercourse. Studies have shown that it is up to 99% effective in preventing pregnancy. In patients that may want to become pregnant in the near future such as this patient, ulipristal acetate is an appropriate choice).

E.Administer depot medroxyprogesterone acetate

F.Administer combined oral contraceptive

75. A 30-year-old woman comes to the physician for a pelvic examination and Pap smear. Menses have occurred at regular 28-day intervals since menarche at the age of 11 years and last for 5 days. The first day of her last menstrual period was 3 weeks ago. She is sexually active with her husband and takes oral contraceptive pills. Her last Pap smear was 3 years ago. She has never had a mammography. Her mother and maternal aunt died of breast cancer. Pelvic examination shows a normal vagina and cervix. Bimanual examination shows a normal-sized uterus and no palpable adnexal masses. Which of the following health maintenance recommendations is most appropriate at this time?

» Feedback

This patient is healthy and requires the standard screening tests for her age group and risk stratification.

A.Pap smear only every 3 years, mammography at age 50

B.Pap smear and human papillomavirus testing now and every year, mammography at age 40

C.Pap smear and human papillomavirus testing now and every year, mammography at age 65

D.Pap smear every 5 years, mammography at age 40

E.Pap smear and human papillomavirus testing now and every 3 years, mammography at age 40

F.Pap smear only every year, mammography at age 50

G.Pap smear and human papillomavirus testing now and every 5 years, mammography at age 40

(Women aged 21–65 years should undergo cervical cancer screening with a solitary Pap smear every three years, or cotesting (HPV testing and Pap smear) every five years in women aged 30–65 years. Mammography is rarely useful in younger women, who have naturally denser breast tissue. According to the USPSTF, women should start breast cancer screening at the age of 50 with a mammogram every 2 years until the age of 74. However, women who have several risk factors for breast cancer (e.g., early menarche, nulliparity) or

a first-degree relative who has had breast cancer, mammography should be recommended at the age of 40).

H.Pap smear and human papillomavirus testing now and every 5 years, mammography at age 65

I.Pap smear and human papillomavirus testing now and every 3 years, mammography at age 50

76. A 22-year-old woman comes to the physician for a follow-up examination. She had a spontaneous abortion 3 months ago. Her last menstrual period was 3 weeks ago. She reports feeling sad occasionally but has continued working and attending social events. She does not have any suicidal ideation or tendencies. She does not smoke. Vital signs are within normal limits. Physical examination including pelvic examination show no abnormalities. A urine pregnancy test is negative. She wants to avoid becoming pregnant for the foreseeable future and is started on combined oral contraceptive pills. Which of the following is the patient at risk of developing?

A.Functional ovarian cysts

B.Acne

C.Endometrial carcinoma

D.Endometriosis

E.Benign breast cysts

F.Premenstrual syndrome

G.Hypertension

(The use of estrogen-containing oral contraceptives increases the risk of cardiovascular side effects such as hypertension and thromboembolism. Estrogen containing oral-contraceptives also cause hyperlipidemia and a mild increase in the incidence of hepatic adenomas).

77. A previously healthy 30-year-old woman comes to the physician for the evaluation of pain during sexual intercourse for 6 months. She also reports frequent episodes of crampy pelvic pain that starts one day before menses and lasts for 7 days. Her symptoms are not relieved with pain medication. Menses occur at regular 28-day intervals and last 5 days. Her last menstrual period was 2 weeks ago. She is sexually active with her husband. She uses a combined oral contraceptive pill. Her vital signs are within normal limits. Physical examination shows rectovaginal tenderness. Cervical and urethral swabs are negative.
Transvaginal ultrasonography shows no abnormalities. Which of the following is the most appropriate next step in management?

» Feedback

This patient presents with chronic dysmenorrhea, dyspareunia, and rectovaginal tenderness, which are features suggestive of endometriosis or chronic PID. The absence of cervical discharge as well as negative cervical swabs rule out PID. What is the next best step for this patient

who has not obtained symptomatic relief despite the use of combined oral contraceptive pills?

A.Measurement of CA-125 levels

B.Hysterectomy

C.Laparoscopy

(In a patient with dysmenorrhea that has not been relieved by oral contraceptive therapy, and an inconclusive ultrasound, laparoscopy is indicated for the definitive diagnosis of endometriosis. A diagnosis of endometriosis is confirmed by the presence of small, bluish endometriotic lesions on the peritoneum ("powder-burn" appearance) and histological examination of these lesions. Furthermore, laparoscopy enables treatment of endometriosis by excision of the endometriotic lesion or laser ablation).

D.Hysteroscopy

E.CT scan of the abdomen and pelvis

78. A 56-year-old woman comes to the physician because she palpated a mass in her right breast during self-examination a week ago. Menarche was at the age of 14, and her last menstrual period was at the age of 51. Vital signs are within normal limits. Examination shows a nontender, firm and hard mass in the upper outer quadrant of the right breast. Mammography shows large, dense breasts, with a 1.7-cm mass in the right upper outer quadrant. The patient undergoes right upper outer quadrant lumpectomy with subsequent sentinel node biopsy, which reveals moderately differentiated invasive ductal carcinoma and micrometastasis to one axillary lymph node. There is no evidence of extranodal metastasis. The tumor tests positive for both estrogen and progesterone receptors and does not show human epidermal growth factor receptor 2 (HER2) over-expression. Flow-cytometry reveals aneuploid tumor cells. Which of the following factors has the greatest effect on this patient's prognosis?

A.Age

B.DNA ploidy status

C.Mammography findings

D.Tumor size

E.Nodal status

(The status of axillary lymph nodes in patients with breast cancer is considered the most important prognostic factor for disease outcome. If involvement of axillary lymph nodes has occurred, metastatic spread to other organs is likely and survival rates are lower. Detection of metastases in the lymph nodes is also associated with higher recurrence rates of cancer).

F.Histologic grade

G.HER2 receptor status

H.Hormone receptor status

79. A 29-year-old woman, gravida 1, para 1, comes to the physician because of difficulty conceiving for one year. She is sexually active with her husband 4–5 times a week. Pregnancy and delivery of her first child 3 years ago were uncomplicated. She returned to work as an event coordinator 12 months ago and has found the transition stressful. Menses previously occurred at 30-day intervals and lasted for 3–4 days with moderate flow. Her last menstrual period was

three months ago. She has occasional vaginal dryness. The patient runs 5 to 10 miles every day. Her BMI is 19.0 kg/m^2. Her pulse is 73/min and blood pressure is 125/70 mm Hg. Abdominal examination shows no abnormalities. Pelvic examination shows dry vaginal mucosa. A serum pregnancy test is negative. Serum studies show:

Prolactin	18 µg/L
Thyroid-stimulating hormone	2.5 mU/L
Follicle-stimulating hormone	3.6 U/L
Luteinizing hormone	2.3 U/L

Ultrasound of the pelvis shows no abnormalities. In addition to dietary and exercise counseling, which of the following is the most appropriate next step in management?

» Feedback

This patient's history and low levels of FSH and LH suggest a diagnosis of functional hypothalamic amenorrhea (FHA), most likely due to stress and excessive exercise.

A.Offer clomiphene citrate therapy

B.Offer in vitro fertilization

C.Offer combined estrogen and progestin therapy

D.Offer pulsatile gonadotropin-releasing hormone therapy

(Functional hypothalamic amenorrhea, a cause of hypogonadotropic hypogonadism, is the most likely cause of this patient's menstrual cycle irregularities and infertility given her low BMI, excessive exercise, and history of stress. The most important aspect of treatment is normalization of energy balance, and this patient should be counseled on making both dietary and exercise regimen changes to increase her BMI. In women who desire pregnancy and have a BMI over 18.5 kg/m^2, pulsatile GnRH injections can be administered to increase FSH and LH levels and thereby stimulate ovulation).

E.Offer human chorionic gonadotropin therapy

F.Reassess serum beta human chorionic gonadotropin in one week

G.Obtain MRI of the pituitary gland

80. A 30-year-old woman, gravida 2, para 1, abortus 1, comes to the physician because of failure to conceive for 12 months. She is sexually active with her husband 2–3 times per week. Her first child was born at term after vaginal delivery 2 years ago. At that time, the postpartum course was complicated by hemorrhage from retained placental products, and the patient underwent dilation and curettage. Menses occur at regular 28-day intervals and previously lasted for 5 days with normal flow, but now last for 2 days with significantly reduced flow. She stopped taking oral contraceptives 1 year after the birth of her son. Her vital signs are within normal limits. Speculum examination shows a normal vagina and cervix. The uterus is normal in size, and no adnexal masses are palpated. Which of the following is the most appropriate next step in management?

» Feedback

This patient most likely developed a complication of dilation and curettage that caused her infertility.

A.Measurement of mid-luteal progesterone concentration

B.Measurement of antisperm antibody concentration

C.Estrogen/progestin withdrawal test

D.Measurement of serum FSH and LH concentrations

E.Hysteroscopy with potential adhesiolysis

(This patient presents with secondary infertility that is most likely due to the formation of intrauterine adhesions, also known as Asherman syndrome. The condition should be suspected in women with a history of infertility following dilation and curettage. If there is high suspicion for this condition, then the patient should receive endometrial evaluation by hysteroscopy, which enables direct visualization of intrauterine adhesions and simultaneous adhesiolysis).

F.Dilation and curettage

81. A 19-year-old woman comes to the physician because of recent weight gain. She started a combined oral contraceptive for dysmenorrhea and acne six months ago. She has been taking the medication consistently and experiences withdrawal bleeding on the 4th week of each pill pack. Her acne and dysmenorrhea have improved significantly. The patient increased her daily exercise regimen to 60 minutes of running and weight training three months ago. She started college six months ago. She has not had any changes in her sleep or energy levels. Her height is 162 cm and she weighs 62 kg; six months ago she weighed 55 kg. Examination shows clear skin and no other abnormalities. A urine pregnancy test is negative. Which of the following is the most appropriate next step in management?

» Feedback

Consider the causes of this patient's weight gain.

A.Reassure the patient

(This woman started gaining weight around the time she started treatment with combined oral contraceptives (COC) but, despite popular belief, weight gain has not been proven to be a side effect of COC. Since the patient also started college 6 months ago and has recently intensified her training routine, her weight gain is most likely attributable to changes in eating habits and an increase in muscle mass. As the current treatment has also proven to be beneficial for her previous dysmenorrhea and acne, reassurance and advice on maintaining a healthy weight are the most appropriate steps in management).

B.Measure serum TSH level

C.Measure serum testosterone concentration

D.Perform a low-dose dexamethasone suppression test

E.Perform a pelvic ultrasound

F.Switch contraceptive to a non-hormonal contraceptive method

G.Switch contraceptive to a progestin-only pill

82. A previously healthy 20-year-old woman comes to her physician because of pain during sexual intercourse. She recently became sexually active with her boyfriend. She has had no other sexual partners. She is frustrated because she has consistently been experiencing a severe, sharp vaginal pain on penetration. She has tried lubricants without significant relief. She has not been able to use tampons in the past due to similar pain with tampon insertion. External vulvar examination shows no abnormalities. She is unable to undergo a bimanual or speculum exam due to intracoital pain with attempted digit or speculum insertion. Testing for *Chlamydia trachomatis* and *Neisseria gonorrhoeae* is negative. Which of the following is the best next step in management?

» Feedback

Sharp intracoital pain on attempted penetration (e.g., intercourse, tampon insertion) in an otherwise healthy young female suggests genito-pelvic pain disorder (vaginismus).

A.Pelvic floor physical therapy

(Pelvic floor physical therapy is the recommended initial treatment for patients with vaginismus. Components of physical therapy such as internal manual techniques, patient education, dilatation exercises, local tissue desensitization, and home exercises have been shown to improve vaginal muscle mobility and help patients overcome vaginal penetration anxiety).

B.Vaginal Botox injections

C.Sex psychotherapy

D.Lorazepam

E.Vaginal estrogen cream

83. A 21-year-old woman comes to the physician because of multiple painful, purulent ulcers she noticed on her vulva 2 days ago. The patient has not had fever or burning with urination. She has no history of similar lesions. She had a chlamydial infection at 17 years of age that was treated with antibiotics. Her immunizations are up-to-date. She is sexually active with her boyfriend of 2 months and uses an oral contraceptive; they use condoms inconsistently. Her temperature is 37.2°C (99.0°F), pulse is 94/min, and blood pressure is 120/76 mm Hg. Examination shows tender inguinal lymphadenopathy. There are 4 tender, purulent 1.5-cm ulcers with a necrotic base along the labia majora. Which of the following is the most likely diagnosis?

» Feedback

The painful necrotic ulcers and lymphadenopathy suggest a sexually transmitted infection with a gram-negative organism.

A.Chancroid

(Chancroid is a sexually transmitted infection caused by the gram-negative bacillus *Haemophilus ducreyi*. In women, it presents with multiple purulent lesions that are 1–2 cm in size, clearly demarcated with a

greyish necrotic base, and typically very painful. (In men, a single lesion is common.) In addition, it is often accompanied by painful inguinal lymphadenopathy. All of the findings in this patient are consistent with chancroid infection. Treatment of chancroid is with single dose oral azithromycin or intramuscular ceftriaxone).

B.Granuloma inguinale

C.Genital herpes

D.Chancre

E.Lymphogranuloma venereum

84. A 28-year-old woman comes to the physician because she is unable to conceive for 3 years. She and her partner are sexually active and do not use contraception. They were partially assessed for this complaint 6 months ago. Analysis of her husband's semen has shown normal sperm counts and hormonal assays for both partners were normal. Her menses occur at regular 28-day intervals and last 5 to 6 days. Her last menstrual period was 2 weeks ago. She had a single episode of urinary tract infection 4 years ago and was treated with oral antibiotics. Vaginal examination shows no abnormalities. Bimanual examination shows a normal-sized uterus and no palpable adnexal masses. Rectal examination shows no abnormalities. Which of the following is the most appropriate next step in diagnosis?

» Feedback

This couple exhibits an inability to conceive after 1 year of regular unprotected intercourse, which is indicative of infertility. Preliminary assessment reveals no male factor or hormonal disturbances.

A.Psychological counseling only

B.Postcoital testing

C.Hysteroscopy

D.Hysterosalpingogram

(If the initial work-up does not reveal any abnormalities and the patient has no history suggestive of tubal obstruction, the most appropriate next step in the evaluation of infertility would be hysterosalpingography or sonohysterosalpingography to screen for tubal occlusion and structural uterine abnormalities (e.g., septate uterus, submucous fibroids, intrauterine adhesions).

E.Chromosomal karyotyping

F.Endometrial biopsy

85. A 49-year-old woman, gravida 1, para 1, comes to the physician because of shorter and less frequent menstrual periods over the past year. During this time, she has also had frequent mood swings and a 2.5-kg (5-lb) weight loss. She occasionally wakes up at night because she is too warm and sweating profusely. These episodes are followed by chills and anxiety that subside within minutes. She has no history of abnormal Pap smears. She is sexually active with her husband, who had a vasectomy 10 years prior. She is 163

cm (5 ft 3 in) tall and weighs 70 kg (154 lb); BMI is 26 kg/m^2. Her temperature is 37°C (98.6°F), pulse is 103/min, respirations are 16/min, and blood pressure is 129/84 mm Hg. Abdominal and genitourinary examination shows no abnormalities. Which of the following is the most appropriate next step in management?

» Feedback

This 49-year-old woman has features of perimenopause, including menstrual cycle irregularities and symptoms of estrogen withdrawal (hot flashes, sleep disturbances, and mood swings). However, prior to making a clinical diagnosis of perimenopause, another condition that could also explain her symptoms should be ruled out.

A.Offer hormone replacement therapy

B.Perform transvaginal ultrasound

C.Measure serum β-hCG concentration

D.Obtain endometrial biopsy

E.Measure serum TSH concentration

(In a 49-year-old woman, menstrual irregularities are likely to be caused by perimenopause, especially when symptoms of estrogen withdrawal (e.g., hot flashes, sleep disturbances, and mood swings) are also present. However, all of the symptoms described in this patient could also be explained by hyperthyroidism. Moreover, while weight gain is a common symptom during perimenopause, this patient presents with weight loss, which is classically seen in hyperthyroidism. Since hyperthyroidism can be easily diagnosed (↓ TSH serum concentration) and effectively treated, this condition should be ruled out before diagnosing perimenopause).

F.Perform DEXA scan

86. A 30-year-old woman comes to the physician because she has been unable to conceive for 3 years. Analysis of her husband's semen has shown normal sperm counts during this time. The patient also reports episodic pelvic and back pain accompanied by painful diarrhea for 5 years. She has about one such episode on average per month for 4–6 days. She has taken ibuprofen for the pain, which has provided some relief. Menses have occurred at regular 29-day intervals since menarche at the age of 14 years and last for 7 days. She is sexually active with her husband and does not use contraception. Vital signs are within normal limits. Pelvic and bimanual examinations are normal; rectal examination is unremarkable. A hysterosalpingogram 6 months prior showed normal results. Which of the following is the most likely underlying mechanism of this patient's symptoms?

» Feedback

It is likely that this patient's menstrual cycle and episodes of diarrhea and pelvic and back pain coincide.

A.Activation of lymphatic cells and tissue damage in the intestinal walls

B.Decreased secretion of gonadotropin-releasing hormone

C.Loss of fallopian tube function following infection

D.Smooth muscle tumor arising from the myometrium

E.Increased secretion of prolactin

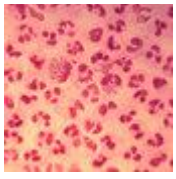
F.Endometrial tissue outside the uterine cavity

(Endometriosis is the presence of endometrial tissue outside the uterine cavity, most commonly in the fallopian tubes, ovaries, intestines, and/or bladder. This tissue reacts similarly to the hormone cycle as the endometrium in the uterine cavity, proliferating under the influence of estrogen. Patients typically present with abdominal pain associated with their menstrual cycle. Depending on the location of the endometrial tissue – in this case, most likely rectovaginal endometriosis – symptoms such as diarrhea, dyschezia, and hematochezia can also occur).

G.Increased secretion of androgens and luteinizing hormone

H.Failure of the ovary to function adequately

87. A 23-year-old woman comes to the physician because of vaginal discharge for 4 days. Her last menstrual period was 3 weeks ago. Twelve months ago she was diagnosed with trichomoniasis, for which she and her partner were treated with a course of antibiotics. She is sexually active with one male partner, and they use condoms inconsistently. Her only medication is a combined oral contraceptive that she has been taking for the past 4 years.A Gram stain of her vaginal fluid is shown. Which of the following is the most likely causal organism?



» Feedback

The gram stain shows gram-negative intracellular diplococci – the pathogen responsible for a common sexually transmitted infection (STI).

A.Neisseria gonorrhoeae

(*Neisseria gonorrhoeae* is responsible for gonorrhea, an STI that presents with purulent, creamy vaginal discharge. This patient's history of inconsistent condom use and previous trichomoniasis indicates an elevated risk of future STIs. The presence of gram-negative intracellular diplococci in the microscopy of this patient's discharge specimen confirms that the infection is caused by *N. gonorrhoeae*).

B.Gardnerella vaginalis

C.Haemophilus ducreyi

D.Klebsiella granulomatis

E.Chlamydia trachomatis

F.Candida albicans

G.Treponema pallidum

88. A 93-year-old woman is brought to the physician because of a purple area on her right arm that has been growing for one month. She has not had any pain or itching of the area. She has hyperlipidemia, a history of basal cell carcinoma treated with Mohs surgery 2 years ago, and a history of invasive ductal carcinoma of the right breast treated with radical mastectomy 57 years ago. She has had

chronic lymphedema of the right upper extremity since the mastectomy. Her only medication is simvastatin. She lives in an assisted living facility. She is content with her living arrangement but feels guilty that she is dependent on others. Vital signs are within normal limits. Physical examination shows extensive edema of the right arm. Skin exam of the proximal upper right extremity shows three coalescing, 0.5–1.0 cm heterogeneous, purple-colored plaques with associated ulceration. Which of the following is the most likely diagnosis?

» Feedback

This condition occurs as a result of chronic lymphedema and is now considered rare, since breast-sparing surgery techniques are favored and radical mastectomy has become less common.

A.Lymphangiosarcoma

(Lymphangiosarcoma is a rare, secondary malignancy that originates in vascular endothelial cells and occurs secondary to chronic lymphedema, classically in women who have undergone axillary lymphadenectomy after mastectomy. It typically presents as multiple purple-colored, macules, and/or papules, and can also present with tender, subcutaneous nodules).

B.Cellulitis

C.Melanoma

D.Thrombophlebitis

E.Physical abuse

F.Lichen planus

G.Kaposi sarcoma

89. A 36-year-old woman comes to the physician for a routine gynecological examination. She feels well. Menses occur with normal flow at regular 28-day intervals and last for 3 to 5 days. Her last menstrual period was 20 days ago. She is sexually active with one male partner and they use condoms inconsistently. Her sister was diagnosed with breast cancer at the age of 40 years. She drinks a glass of wine occasionally with dinner and has smoked 10 cigarettes daily for the past 15 years. The patient's vital signs are within normal limits. Physical examination including a complete pelvic exam shows no abnormalities. Urine pregnancy test is negative. A Pap smear shows atypical glandular cells. Which of the following is the most appropriate next step in management?

» Feedback

Consider the age of the patient and the findings on exfoliative cytology (Pap smear) to determine the next best step.

A.Repeat cervical cytology at 12 months

B. Perform colposcopy with endocervical and endometrial sampling

(Patients with high-risk findings on Pap smear such as atypical glandular cells, HSIL, and ASC-H should urgently undergo endocervical sampling and colposcopy (with a directed biopsy if suspicious changes are noted) to rule out cervical intraepithelial lesions or cervical adenocarcinoma-in-situ. In addition, endometrial sampling should be perfomed in patients with atypical glandular cells who are above the age of 35 years and/or have high risk factors for endometrial adenocarcinoma (e.g., unexplained vaginal bleeding, chronic anovulation).

C. Perform a diagnostic loop electrosurgical excision

D. Test for oncogenic human papillomavirus

E. Perform colposcopy and cytology every 6 months for 2 years

F. Perform colposcopy with endocervical sampling