Directions:
The USMLE Step 2 CK tests clinical knowledge along the two dimensions physician task and disease category.

Try the USMLE Step 2 CK questions below, pick one best answer from the choices below, then check your answer by clicking on the “get answer” button to see how you did. Remember USMLE Step 2 CK scores are required to gain ECFMG certification and USMLE Step 2 CK scores are used to sift through applications. A high score means a better chance of gaining a competitive Residency.
Question 1 – Internal Medicine

A 48-year-old man comes to the physician because of a 2-day history of severe low back pain. He states that he has periodic low back pain for years, but this is more severe than usual and radiates to the buttock and down the right leg. His temperature is 36.8°C (98.2°F). Examination shows some rigidity of the lumbar spine. The pain is exacerbated by applying pressure on the paravertebral region in the lower lumbar spine and by passively raising the leg at 45 degrees while the patient lies supine. A reduced Achilles tendon reflex is noted. Which of the following is the most appropriate next step in management?

A. MRI examination of vertebral column
B. Nonsteroidal anti-inflammatory drugs (NSAIDs) and 2 days of bed rest
C. Plain x-ray examination of the lumbosacral spine
D. Radionuclide bone scanning
E. Surgical consultation

Answers and Explanations

B

The clinical picture strongly suggests herniation of an intervertebral disc causing compression of a spinal root (S1, considering radiation of the pain and reflex alterations). Supporting such a diagnosis is also the positive straight leg-raising test (Lasegue sign). When the history and physical examination support a diagnosis of disc herniation, conservative management is all that is needed. Current recommendations include treatment with NSAIDs and bed rest of short duration (no longer than 2 days). Longer periods of bed rest do not provide any additional benefit.

MRI examination of vertebral column (choice A) is certainly the diagnostic procedure of choice to visualize soft tissue structures of the vertebral column. MRI is reserved for cases in which more detailed imaging information would change the therapeutic approach.

Plain x-ray examination of the lumbosacral spine (choice C) provides nonspecific information. Almost any person older than 40 has some signs of degenerative joint disease of the lumbar column. Plain radiographs should be performed when the clinical symptomatology suggests diseases other than disc herniation, such as tumors or infections.

Radionuclide bone scanning (choice D) is useful in detecting foci of osteomyelitis or bone metastases, but not disc disease.

Surgical consultation (choice E) should be sought if the patient does not respond to appropriate treatment or if there are severe or evolving neurologic deficits. Percutaneous lumbar discectomy may be performed under local anesthesia as an alternative to laminectomy.
Question 2 – Obstetrics/ Gynecology

A 26-year-old woman presents to her physician because of pain in her breast. She gave birth 3 months ago and is breast-feeding. Soon after she began lactating she developed cracks in the nipples, and for the past 5 days her left breast has become progressively more tender. On physical examination, her affected breast is red, hot, swollen, and painful to palpation. Her temperature is 38.3 °C (101.0 °F), and her white cell count is 13,000/mm³. Which of the following is the most likely diagnosis?

A. Breast abscess  
B. Breast cancer  
C. Intraductal papilloma  
D. Mastalgia  
E. Traumatic hematoma

Answers and Explanations

A  
Virtually the only time in life when a woman can get breast abscess is during lactation; therefore, a red, hot, tender breast at that time is most likely to represent an abscess. The fever and leukocytosis provide further confirmation of the diagnosis.  

Breast cancer (choice B) should be the number one choice if an identical vignette were given for a nonlactating woman. Breast infections are extremely rare outside of the postpartum period (unless precipitated by trauma); thus, what appears to be breast abscess in a nonlactating woman is breast cancer until proven otherwise. Because this patient is breast-feeding, a breast abscess is more likely.  

Intraductal papilloma (choice C) manifests itself with bloody discharge from the breast.  

Mastalgia (choice D) is part of the “fibrocystic disease” complex; such as, it is the most common benign breast disorder. It indeed produces pain, but the pain is related to the menstrual cycle and comes with “lumpiness” of the breast, rather than redness, warmth, fever, and leukocytosis.  

Hematoma (choice E) is also painful, but it would come after a traumatic injury and would probably produce a mass rather than a red, hot, swollen breast with fever and leukocytosis.
Question 3 - Pediatrics

A pregnant woman has premature rupture of membranes. Her baby is born 3 days later, at 36 weeks’ gestation. The 5-minute APGAR score is 4. Lung sounds are reduced, and the infant appears to be in respiratory distress. Peripheral blood smear with differential counts demonstrates a neutrophil count of 30,000/mL, with toxic granules evident in many neutrophils. Gram stain of buffy coat demonstrates small gram-positive cocci in chains. Which of the following is the most likely causative organism?

A. Group A Streptococcus  
B. Group B Streptococcus  
C. Methicillin-resistant Staphylococcus aureus  
D. Methicillin-sensitive Staphylococcus aureus  
E. Neisseria meningitidis

Answers and Explanations

B

This is neonatal sepsis, which in the first few days of life is most likely to be due to group B Streptococcus or gram-negative enteric organisms. Physicians should maintain a high index of suspicion, since neonatal sepsis may be subtle or nonspecific in its symptoms ("not doing well", respiratory distress, apnea, bradycardia, seizures, jaundice). Gram stain of the buffy coat from a blood sample may be particularly helpful in establishing the diagnosis. Predisposing conditions include obstetric complications, toxaemia, and maternal infection.

Group A Streptococcus (choice A) does not commonly infect infants; it causes sore throats, pneumonia, and meningitis in older children.

Staphylococcus aureus, in either its methicillin-sensitive (choice D) or methicillin-resistant (choice C) forms, can cause skin pustules, sepsis, pneumonia, and meningitis in infants, but would be described as gram-positive cocci in clusters rather than chains.

Neisseria meningitides (choice E) is a gram-negative diplococcus that can cause meningitis and respiratory infections in children but is not common in neonates.
Question 4 - Psychiatry

While on the Psychiatry Consult-Liasion Inpatient Service, a psychiatry intern is called to assess a patient on a general medical floor who has developed a muscle spasm causing her neck to twist uncontrollably to the let. She is also having difficulty speaking and is upset. The intern evaluates the patient’s list of medications and concludes that her new symptoms may be due to one of them. Which of the following medications is most likely responsible for the patient’s symptoms?

A. Aspirin
B. Digoxin
C. Erythromycin
D. Fluoxetine
E. Metoclopramide

Answers and Explanations

E

Metoclopramide is used as a gastric motility agent, often in patients with diabetes who have gastric paresis. It has antidopaminergic properties and can cause acute dystonic reactions such as are occurring in this patient. A dystonia is a spontaneous contraction of individual muscles. Treatment includes cessation of the metoclopramide and providing an antihistamine, such as diphenhydramine, both of which are usually given in IM form for immediate effect.

Aspirin (choice A) is an analgesic, antipyretic, anti-inflammatory, and antiplatelet agent. It is widely used and does not cause acute dystonic reactions.

Digoxin (choice B) is a cardiac medication, specifically a steroid glycoside, used in the treatment of certain heart diseases, especially congestive heart failure. It does not cause acute dystonic reactions.

Erythromycin (choice C) is a macrolide antibiotic and does not cause acute dystonic reactions.

Fluoxetine (choice D) is an antidepressant medication. It is a selective serotonin reuptake inhibitor and has not generally been associated with acute dystonic reactions.
Question 5 - Surgery

A 44-year-old woman has a 2-cm firm palpable mass in the upper outer quadrant of her right breast. The mass is freely moveable, and her breast is of normal, rather generous size. There are no palpable axillary nodes. Mammogram shows no other lesions. A core biopsy establishes a diagnosis of infiltrating ductal carcinoma. She has no neurologic or skeletal symptoms, and a chest x-ray film and liver enzymes are normal. She understands that systemic therapy may eventually be needed once the full extent of her disease is known. Although she wants the best chance for cure, she is very concerned about the breast itself. Which of the following is the most appropriate management?

A. Radiation and chemotherapy without breast surgery
B. Lumpectomy, axillary sampling, and postoperative radiation
C. Simple total subcutaneous mastectomy with implants
D. Modified radical mastectomy with immediate rectus abdominis flap reconstruction
E. Radical mastectomy and postoperative radiation, with delayed reconstruction

Answers and Explanations

B

This is actually the ideal candidate for breast-sparing surgery: a patient with a small primary tumor in a large breast, located far away from the nipple and areola. Provided radiation is done afterward, the cure rates are identical to those for more mutilating procedures. The cosmetic outcome is excellent, and no reconstruction is needed (the void left by the lumpectomy fills in with body fluids and is eventually replaced by connective tissue).

No surgery at all (choice A) is not an option. As much as we want to preserve the breast, and as much as we rely on postoperative radiation to lower the local recurrence rates, leaving the primary tumor in place does not lead to cure.

Simple mastectomy (choice C) entails more surgery than needed for the tumor (for which a lumpectomy followed by radiation is sufficient in this case), but not enough to learn about the status of the axillary nodes. They have to be sampled (either by dissection or sentinel node biopsy). Physical examination is totally unreliable for that purpose.

Although modified radical mastectomy (choice D) may be unavoidable in patients with larger primary tumors in smaller breasts, or tumors located where the nipple and areola cannot be preserved, this patient does not need that larger operation (no survival advantage) and should not take the more complicated and less pleasing breast reconstruction.

Old-fashioned radical mastectomy (choice E) is unnecessarily aggressive and not justified unless the tumor is huge and invading the pectoralis muscle. Unless surgical margins are positive for tumor, postoperative radiation would be equally unnecessary if the whole breast is taken.