

These questions are taken from Blueprints (surgery MCQs book). It only includes 2nd semester lectures.

4. A 25-year-old woman found a lump in her right breast on self-examination. She has no family history of breast cancer. The lump is freely mobile and well circumscribed. What is the best option to evaluate a breast mass in a young female?

- a. Biopsy
- b. Mammography
- c. Testing for breast cancer (BRCA) gene
- d. Ultrasound
- e. Watchful waiting

4.d (Chapter 3) Younger women have more fibrous tissue, which makes mammograms harder to interpret. Thus ultrasound is a useful testing modality. As women age, breast tissue transforms from fibrous tissue to adipose tissue. This change makes it easier for mammography to detect masses. Thus this modality is more useful in patients over the age of 35 years. Watchful waiting may be considered if the lesion is benign. Testing for the BRCA gene may be considered if the patient is suspect to a family history of breast cancer.

5. A 19-year-old woman began breast-feeding for the first time. At first, it was difficult for her infant to feed. Now, her breasts are red, warm, and sore. She has continued to breast-feed, despite the pain; however, she has recently begun to use a breast pump instead of breast-feeding. She is begun on a course of oral antibiotics. What condition is this patient at risk of developing?

- a. Breast abscess
- b. Fibrocystic disease
- c. Inflammatory breast cancer
- d. Prolactinoma

5.a (Chapter 3) Women with mastitis need close follow-up for inflammatory breast disease. If a breast abscess developed she would need antibiotic. If her breast abscesses were recurrent, the physician should consider resection of the involved ducts. If a patient with fibrocystic disease has straw-colored fluid on aspiration, she would need to be observed closely. If the patient had spontaneous galactorrhea, the physician would need to rule out a prolactinoma.

6. A 31-year-old premenopausal woman with a left breast-mass undergoes a left modified radical mastectomy. Pathology reveals infiltrating ductal carcinoma measuring 3 cm in size with negative lymph nodes. Estrogen receptor status is negative. What is the most appropriate adjuvant therapy for this patient?

- a. Chemotherapy (multi agent)
- b. External-beam radiotherapy
- c. High-energy focused ultrasound therapy
- d. Tamoxifen
- e. Watchful waiting

6.a (Chapter 3) This patient should be treated with multi-agent chemotherapy. This is the treatment of choice for a premenopausal patient with stage I or II breast cancer (size 1 cm), negative lymph nodes, and estrogen receptor—negative status. Watchful waiting may be appropriate for patients with small tumors and negative lymph nodes. External-beam radiotherapy is not indicated for this patient. High-energy focused-ultrasound therapy is not indicated for the treatment of breast cancer. Tamoxifen is considered in patients who are estrogen receptor positive and have tumor size 1 cm.

37. A 51-year-old man is found to have an intracranial mass and will undergo resection. The surgical procedure is performed via a transoccipital approach. In this approach, the patient develops a cerebrospinal fluid (CSF) leak. Which of the following statements is true regarding CSF?

- a. Arachnoid villi act as two-way valves.
- b. Arachnoid villi open at a pressure of 5 mm Hg.
- c. CSF is absorbed through the spinal roots.
- d. CSF enters through the foramen of Magendie.
- e. Total CSF volume is 150 L.

37. b (Chapter 14) Arachnoid villi open at a pressure of 5 mm Hg. They act as oneway valves. Cerebrospinal fluid can be absorbed around the spinal nerve roots. Cerebrospinal fluid flows through the ventricles and exits by the foramen of Magendie. The total volume of cerebrospinal fluid is 150 mL.

38. A 19-year-old college student is driving under the influence of alcohol, despite recommendations from friends not to drive. She is struck by another driver. The force of impact causes her to strike the temporal area of her skull against the window. She develops a mild headache but does not lose consciousness. Several hours later, she develops a severe headache with nausea and vomiting. Which is the most likely diagnosis?

- a. Bacterial infection
- b. Berry aneurysm
- c. Epidural hematoma
- d. Subarachnoid hematoma
- e. Subdural hemorrhage

38. c (Chapter 14) Epidural hematoma results from hemorrhage into the potential space between the dura and the skull. The hemorrhage most likely results from rupture to a meningeal artery, which travels within this plane; the middle meningeal artery, which branches off the maxillary artery in the temporal area, is most common. Normally, the patient experiences a lucid interval, defined as an asymptomatic period of a few hours after the trauma. A Berry aneurysm results from a defect in the media of arteries and is usually located at bifurcation sites. Berry aneurysms are most commonly found in the circle of Willis. The source of bleeding due to subdural hematoma is from bridging veins; these often occur in older adults as a result of minor trauma, and symptoms usually occur slowly—days to weeks. Bacterial meningitis diagnosis is confirmed with lumbar puncture and demonstrates increased neutrophils/protein and decreased glucose in the cerebrospinal fluid.

39. A 59-year-old man presents to his primary care physician complaining of progressive right-sided hearing loss and gait unsteadiness. He states that when he uses the phone, he must use his left ear to listen instead of his right ear. He has a past medical history of hypertension. His current medications include a calcium channel blocker. Physical examination reveals loss of the right corneal reflex and facial

weakness. Cardiac, pulmonary, and abdominal examinations are within normal limits. What is the most appropriate next best step in the diagnosis of this patient?

- a. Audiometric testing
- b. Brainstem-evoked potential testing
- c. CT scan of the head without contrast
- d. MRI of the head
- e. Nystagmography

39. d (Chapter 14) This patient may have an acoustic neuroma. These lesions arise from the vestibular portion of cranial nerve VIII. MRI has now become the method of choice for evaluation of posterior fossa and cerebellopontine angle tumors, because they are better seen on MRI as compared with CT. Audiometric testing is useful for lesions of cranial nerve VIII. Brainstem-evoked potential testing is useful for lesions of cranial nerve VIII. Nystagmography is useful for evaluation of vestibular disorders.

46. A 41-year-old man with a long history of renal stones and hypercalcemia is found to have an adenoma of the right superior parathyroid gland. He is going to undergo surgical excision of this lesion. What is the best surgical landmark for this lesion?

- a. Bifurcation of the carotid arteries
- b. Carotid sinus
- c. Junction of the inferior thyroid artery and recurrent laryngeal nerve
- d. Junction of the upper and middle third of the thyroid gland
- e. Recurrent laryngeal nerve

46. d (Chapter 17) The superior parathyroid glands are located at the junction of the upper and middle third of the thyroid gland on the posteromedial aspect. The inferior parathyroids are located near the junction of the inferior thyroid and the recurrent laryngeal nerve. The carotid sinus is not near the location of the superior parathyroid glands.

47. Which of the following techniques is best used to define an enlarged parathyroid gland?

- a. CT scan of the neck
- b. Dual tracer imaging
- c. MRI of the neck
- d. Thyrocervical angiography
- e. Ultrasonography

47. e (Chapter 17) Ultrasonography will define an enlarged parathyroid gland in 70% to 80% of cases. Dual tracer imaging can localize adenoma or hyperplasia in 70% of cases. Thyrocervical angiography is reserved for patients with recurrent hyperparathyroidism after surgical neck exploration. CT and MRI are helpful to locate enlarged parathyroid glands that are in the mediastinum.

48. A 44-year-old man with end-stage renal disease successfully undergoes renal transplantation. He has a prior medical history of hyperparathyroidism. Six months after renal transplantation, his serum calcium is still 13 mg/dL. Which of the following laboratory findings are possible in this patient?

- a. Elevated serum phosphate
- b. Elevated serum lactic acid dehydrogenase
- c. Elevated urine calcium
- e. Elevated urine protein

48. c (Chapter 17) This patient has tertiary hyperparathyroidism, which occurs in patients with chronic renal disease despite successful renal transplantation. Patients will have hypercalcuria (elevated urine calcium). There is no change in LDH levels. Serum phosphate levels are decreased. Serum and urine calcium levels are increased.

49. A 46-year-old man presents to his primary care physician for evaluation of a skin lesion. He complains of hypopigmentation of the skin of his lower back. He has a prior medical history of eczema and basal cell carcinoma. He is a farmer who spends a great deal of time outdoors. What cells are responsible for this condition?

- a. Adipocytes
- b. Keratin-producing cells
- c. Langerhans cells
- d. Melanocytes
- e. Merkel cells

49. d (Chapter 18) Melanocytes produce melanin and are chiefly responsible for pigmentation of the skin. They are of neural crest origin. One of the diseases associated with melanocytes is vitiligo, which is characterized by flat, well-demarcated zones of pigment loss. Keratinocytes produce keratin, which forms a waterproof layer. Langerhans cells are antigen-presenting cells. Merkel cells are epidermal cells that function in cutaneous sensation. Adipocytes are fat storage cells.

50. A 69-year-old male presents to his dermatologist with a lesion present on his nose. He is a gardener who spends a great deal of his time outdoors. He has a prior medical history of allergic rhinitis, hypertension, and diabetes mellitus. His current medications include a beta-blocker and an oral hypoglycemic. Physical examination of his nose reveals a raised, shiny, papular lesion with small blood vessels. What is the most likely diagnosis?

- a. Basal cell carcinoma
- b. Histiocytosis X
- c. Melanoma
- d. Seborrheic keratosis
- e. Squamous cell carcinoma

50. a (Chapter 18) Basal cell carcinomas are the most common skin tumors. They tend to involve skin-exposed areas, most often in the head and neck. Grossly, they are characterized by a pearly papule with overlying telangiectatic vessels. The lower lip is actually the most common site for a tobacco user to develop squamous cell carcinoma. Malignant melanomas are the most likely primary skin tumors to metastasize systemically. Histiocytosis X (Langerhans cell histiocytosis) is caused by a proliferation of Langerhans cells, which are normally found in the epidermis. Seborrheic keratosis is a benign squamous proliferative neoplasm, associated with sunlight exposure. Fair-skinned persons are at increased risk. Depth of tumor correlates with risk of metastases.

51. A 29-year-old Black woman presents to her primary care physician because of a growth on her left ear, which occurred after she had her ear pierced for the first time a week ago. She noticed that her ear seemed to develop a growth on it quite rapidly. She had never had her ear pierced before. What is the most likely explanation for these findings?

- a. Basal cell carcinoma
- b. Blue nevus

- c. Juvenile melanoma
- d. Keloid
- e. Molluscum contagiosum

51. d (Chapter 18) A keloid is an abnormal proliferation of connective tissue with an abnormal arrangement of collagen. This abnormal proliferation looks very similar to a tumorlike scar. Keloids are much more common in African American individuals and usually follow some sort of trauma—in this case, the ear piercing. The Spitz nevus can be confused with malignant melanoma. However, the lack of color change or change in size would make melanoma a little less likely. Also, this patient is much younger than the average age of patients who present with melanomatous lesions. Spitz nevus is also known as juvenile melanoma; because of its benign nature, this name is falling out of use. It is important to always think of melanoma when this type of lesion is seen and to order appropriate tests to rule it out. Molluscum contagiosum is a viral disease caused by the DNA poxvirus. It is contracted via direct contact, and its lesions are characteristically pink, umbilicated, and dome-shaped.

61. A 53-year-old woman presents to her primary care physician with a 12-month history of neck pain. She complains of a 15-lb weight gain and generalized malaise. She has a past medical history of hypertension and diabetes mellitus. Her current medications include an oral hypoglycemic. Physical examination reveals tenderness along the course of the thyroid gland without evidence of a discrete mass. What is the most likely diagnosis?

- a. Acute thyroiditis
- b. Hashimoto thyroiditis
- c. Papillary thyroid carcinoma
- d. Riedel thyroiditis
- e. Subacute thyroiditis

61. b (Chapter 22) This patient likely has Hashimoto thyroiditis. Patients have mild thyroid tenderness and fatigue. Laboratory features include the presence of thyroid autoantibodies. Frequently, no treatment is necessary for this condition. Acute thyroiditis is associated with fever, chills, and dysphagia. Papillary carcinoma is associated with a palpable thyroid nodule. Riedel thyroiditis is associated with thyroid fibrosis. Symptoms of tracheal and esophageal compression are possible.

62. A 47-year-old woman with a history of a left thyroid mass undergoes left thyroid lobectomy. Pathology reveals a 1.3-cm papillary carcinoma with no evidence of extracapsular extension. What is the most appropriate next step in the treatment of this patient?

- a. External-beam radiotherapy
- b. Multiagent chemotherapy
- c. Subtotal thyroidectomy
- d. Total thyroidectomy
- e. Watchful waiting with periodic follow-up

62. e (Chapter 22) This patient has evidence of papillary carcinoma of the thyroid. Only 5% of patients with papillary carcinoma of the thyroid present with distant metastases. For tumors that are 1.5 cm and that are disease-confined to one lobe and no extracapsular extension, treatment with thyroid lobectomy is appropriate. External-beam radiotherapy is not required for this patient. Multiagent chemotherapy is not required for this patient. Subtotal and total thyroidectomy are not required for this patient.

63. A 34-year-old man with a thyroid nodule is undergoing a neck exploration. During the procedure, it is possible that he will undergo thyroidectomy. Which of the following statements about the superior laryngeal nerve and the innervation of the thyroid gland is correct?

- a. Injury to the nerve causes bowing of the vocal cords during phonation.
- b. Nerve injury may be unnoticeable in singers.
- c. The nerve is rarely at risk during thyroid surgical procedures.
- d. The superior laryngeal nerve is chiefly a motor nerve.
- e. The superior laryngeal nerve is chiefly a sensory nerve.

63. a (Chapter 22) Injury to the nerve causes bowing of the vocal cords during phonation. This can be a problem in singers who have difficulty reaching high-pitched notes. The nerve can be at risk during thyroid surgical procedures because of its proximity to the superior thyroid artery. The nerve is both sensory and motor to the larynx.

64. A 19-year-old man leaps from the third floor of his dormitory in an apparent suicide attempt. He is brought to the emergency department unconscious. He has visible head and lower extremity injuries. He has a pulse of 110 beats per minute but is apneic. What is the best airway management for this patient?

- a. Nasotracheal intubation
- b. Oral intubation
- c. Oral intubation with head-chin lift
- d. Tracheostomy
- e. Intubation is not necessary for this patient.

64. d (Chapter 23) This patient is apneic. An airway must be established for this patient. However, he may also have fractures of the cervical spine. Thus the best treatment for this patient in terms of airway management is a tracheostomy. Nasotracheal intubation is inappropriate for a patient who is totally apneic. Oral intubation and oral intubation with head-chin lift is inappropriate because it requires some hyperextension of the neck. Intubation is necessary for a patient who is apneic.

65. A 21-year-old woman is stabbed in the chest by her boyfriend. She is brought to the emergency department for evaluation. Her blood pressure is 130/80 mmHg, and her pulse is 90 beats per minute. Physical examination reveals a single stab wound to the left fifth intercostal space in the midclavicular line. Neck examination is normal. Trachea is midline, and the jugular veins are not distended. She does have decreased breath sounds in the left lung fields. Which of the following diagnoses can be ruled out on the basis of the above information?

- a. Large left hemothorax
- b. Open pneumothorax
- c. Pericardial tamponade
- d. Rupture of the left main stem bronchus
- e. Tension pneumothorax

65. b (Chapter 23) It is unlikely that this patient has an open pneumothorax. Patients with pneumothorax are in obvious respiratory distress. They often have an obvious "sucking" chest wound. This patient has neither of the above findings. Left pneumothorax is possible in this patient and needs evaluation with a chest x-ray. Cardiac tamponade is possible in this patient, as is rupture of the main stem bronchus. Tension pneumothorax is also a consideration for this patient.

66. A 41-year-old man suffers a traumatic amputation of three of his fingers in a meat slicer. He has no prior medical or surgical history. Which of the following modalities should be used to transport the amputated fingers with the patient?

- a. Place in clean plastic bag and pack with dry ice.
- b. Place in clean plastic bag filled with room temperature water.
- c. Place in clean plastic bag in a chest filled with crushed ice and water.
- d. Place in clean plastic bag filled with hot water.
- e. Wrap the amputated fingers in sterile dry gauze.

66. c (Chapter 23) An amputated upper extremity body part can be replanted if properly recovered and transported with the patient. Cooling the body part in a chest filled with crushed ice and water may preserve the body part for up to 18 hours. The body part should not be placed in dry gauze or packed with dry ice. In addition, the body part should not be placed in warm water.

70. A 37-year-old construction worker sustained a crush injury to his right thigh after a crane fell on his leg at the work site. He is brought to the emergency department for evaluation. He has significant right leg pain and pain with passive stretch. The leg is tense to palpation. What is the most likely intracompartmental pressure measurement of this patient's right leg?

- a. 5 mm Hg
- b. 10 mm Hg
- c. 15 mm Hg
- d. 25 mm Hg
- e. 35 mm Hg

70. e (Chapter 25) This patient likely has a compartment syndrome, which is caused by an increase in interstitial fluid pressure within an osteofascial compartment, leading to compromise of the microcirculation and myoneural necrosis. Diagnosis is confirmed by an intracompartmental pressure of 30 mm Hg or higher. Treatment of this condition is surgical fascial release.

78. A 28-year-old woman presents to her physician for evaluation of a lump in her right breast found on self-examinations has a family history of breast cancer in that her mother died in her early 40s from this condition. The mother had a modified radical mastectomy followed by chemotherapy. Physical examination reveals a breast lump that is freely mobile and well circumscribed. There is no dimpling, asymmetry, or retractions. The lesion measures 2 cm. What is the next step in the management of this patient?

- a. Biopsy of the lesion with sonographic guidance
- b. Mammography followed by stereotactic CT scan
- c. Testing for BRCA gene
- d. Ultrasound of the breast and consideration for breast biopsy
- e. Watchful waiting and follow-up examination by primary care physician in 1 year

78. d (Chapter 14) Younger women have more fibrous tissue, which makes mammograms harder to interpret. Thus, ultrasound is a useful testing modality. This patient has a family history of breast cancer. Therefore, ultrasound and consideration for breast biopsy would be most prudent. As women age, breast tissue transforms from fibrous tissue to adipose tissue. This change makes it easier for mammography to detect masses. Thus, this modality is more useful in patients older than 35 years. Watchful waiting may be considered if the lesion is benign. Testing for the BRCA gene may be considered if the patient is suspect to a family history of breast cancer.

89. A 30-year-old man undergoes a CT scan of his abdomen after a motor vehicle accident. He was an unrestrained driver and was thrown from the vehicle. No acute abdominal injuries are found. The CT scan reveals bilateral enlarged kidneys with multiple cysts present in varying sizes. The right kidney is 15 cm and the left kidney is 16 cm in length. Physical examination of the heart, lungs, and abdomen are within normal limits, other than some mild tenderness to palpation in the right and left upper quadrants. Which of the following central nervous system pathologies are most strongly associated with this finding?

- a. Circle of Willis aneurysm
- b. Cysticercosis
- c. Infarction
- d. Glioma
- e. Subdural hematoma

89. a (Chapter 20) This man most likely has adult polycystic kidney disease, an autosomal dominant disease. It is the most common inherited disorder of the kidney. Adult polycystic kidney disease is often associated with berry aneurysm in the circle of Willis. These aneurysms are prone to rupture, leading to subarachnoid hemorrhage. Cerebellar hemangioma is associated with von Hippel-Lindau disease, an autosomal dominant disease of chromosome 3.

97. A 12-year-old boy is brought to his physician for evaluation of a neck mass. He has a history of recurrent sinusitis and tonsillar infections. Physical examination reveals a midline neck mass measuring 1.5 cm that moves with swallowing. There is no evidence of lymphadenopathy. What is the most likely diagnosis?

- a. Leukemia
- b. Lymphoma
- c. Thyroglossal duct cyst
- d. Thyroglossal fistula
- e. Thyroid carcinoma

97. c (Chapter 12) This patient has a thyroglossal duct cyst. These are most commonly seen in children and appear as a single painless lump in the midline that moves with swallowing. Thyroid carcinoma is rare in children. Leukemia and lymphoma would be associated with palpable lymphadenopathy in the neck.

99. A patient presents to the emergency department after being slashed with a knife in the left leg. The wound appears clean and the edges are well opposed. Which of the following is the simplest method of wound closure for this injury?

- a. Delayed primary closure
- b. Graft
- c. Local flaps
- d. Primary closure
- e. Secondary intention

99. d (Chapter 24) Primary closure is the simplest and most common method of wound closure. Surgical wounds created during a procedure are typically closed in this fashion. Delayed primary closure is considered if the wound is contaminated or requires debridement.