

1. Duret hemorrhages:
  - A. occur in association with subfalcine herniation
  - B. are seen in midbrain and pons
  - C. are secondary to middle meningeal artery tears
  - D. accompany cerebellar mass lesions
  - E. are the most common cause of aqueductal stenosis
  
2. While walking home after a party where he consumed five cans of beer, a previously healthy 28 year-old man fell and hit his head on the curb. He got up and went home. Later that night, he became unconscious and was brought to the emergency room by his roommate. Physical exam showed swelling of left temporal-parietal area. What is the most likely explanation to his condition?
  - A. Left meningeal artery rupture
  - B. Left cerebral artery rupture
  - C. Rupture of an anterior communicating artery aneurysm
  - D. Previously asymptomatic bacterial meningitis
  - E. Right meningeal artery rupture
  
3. A 29 year old man was found dead in the street. Autopsy showed hemorrhage under occipital scalp, and contusions of both occipital poles. Which of the following is the most likely explanation?
  - A. Metastatic lung cancer secondary to heavy smoking
  - B. Intracranial hemorrhage secondary to hypertension
  - C. Slipped and fell on his back, hitting his head to concrete pavement
  - D. He was previously strangled to death and later the body was dumped in a remote street, at which time his head hit the concrete pavement
  - E. He was attacked and was hit on the back of his head by a baseball bat
  
4. Which of the following is correct regarding hypertensive central nervous system hemorrhage?
  - A. it is the second most common cause of subdural hemorrhage
  - B. periventricular white matter is the preferred site for hemorrhage
  - C. Charcot- Bouchard aneurysms are thought to be the site of hemorrhage
  - D. many cases are associated with congophilic angiopathy
  - E. it comprises approximately 1/3 of all intraparenchymal brain hemorrhages
  
5. Which of the following is correct regarding the lesion shown in this picture?
  - A. It is the second most common type of intracranial aneurysm
  - B. The most common location is posterior cerebral artery branches
  - C. bleeding is typically associated with incipient leakage
  - D. it is usually located at the bending points of arteries
  - E. It is the most common cause of subarachnoid hemorrhage

6. Which of the following is true regarding the disease shown in the picture?
- A. E. coli is the most common cause in the elderly
  - B. S. pneumoniae is the most common cause in adolescents
  - C. cerebrospinal fluid shows increased lymphocytes and normal glucose level
  - D. it may result in hydrocephalus
  - E. it represents diffuse involvement of meninges by malignancy
7. Which of the following is correct regarding HIV and central nervous system?
- A. approximately 60% of AIDS patients develop neurologic dysfunction in the course of their disease
  - B. diagnostic feature is intense lymphocytic infiltrates in the brain parenchyma and in the leptomeninges
  - C. spinal cord involvement presents as transverse myelitis due to opportunistic Herpes virus infection
  - D. CJD caused by opportunistic JC virus infection is a rare but serious complication
  - E. opportunistic infections are more commonly seen in the pediatric patient population
8. Which of the following is true regarding the disease process shown in the picture?
- A. This picture is most likely from caudate nucleus
  - B. This disease most commonly involves ageing neurons with lipofuscin pigment
  - C. structures with similar name, but with different microscopic appearance can be seen in cortical neurons and are easily demonstrated by synuclein immunohistochemistry
  - D. This disease can easily be suspected in neonates by gross examination
  - E. increase in serotonin levels is the major abnormality
9. Which of the following pairs is correct?
- A. adrenoleukodystrophy- long chain fatty acids
  - B. metachromatic leukodystrophy- arylsulfatase A
  - C. Kerns- Sayre syndrome- mitochondrial tRNA
  - D. vitamin B1 deficiency- subacute combined degeneration of the spinal cord
  - E. amyotrophic lateral sclerosis- trinucleotide repeats
10. Which of the following is true regarding the lesion shown in the picture?
- A. it is associated with an autosomal-recessive disorder
  - B. it is associated with an abnormality in 22q
  - C. bilateral schwannomas are also present involving the 8th. nerve
  - D. it has a higher rate of progression to malignancy compared to general population
  - E. it is associated with one of the rarest form of genetic disorders

11. Which of the following lesions may be found together with the lesion shown in the picture? (SEGCA)
- A. pericardial cyst
  - B. cardiac rhabdomyoma
  - C. renal cell carcinoma
  - D. subungual angioma
  - E. glioblastoma
12. Which of the following is true regarding the lesion in this picture?
- A. it is typically located in the brainstem
  - B. it is a highly malignant brain tumor with frequent dissemination to cerebrospinal axis
  - C. it may be associated with renal cell carcinoma
  - D. it usually presents as a highly infiltrative tumor, but paradoxically has a good prognosis
  - E. its immunophenotype is essentially identical to renal cell carcinoma in many cases
13. Which of the following is true regarding pituitary adenomas?
- A. reticulin stain is a very useful technique for the differential diagnosis of normal pituitary gland vs. hyperplasia vs. adenoma
  - B. growth hormone adenoma is the most common type
  - C. Nelson syndrome is associated with gonadotroph adenomas
  - D. pituitary apoplexy is a postpartum neurosurgical emergency
  - E. invasive adenomas have high probability of distant metastases
14. Which of the following is true regarding the lesion shown in the picture?
- A. spinal cord is the most common location in children
  - B. it is usually seen in the temporal lobe
  - C. GFAP has a peculiar perinuclear positivity
  - D. 1p/19q losses indicate worse prognosis
  - E. cerebrospinal fluid dissemination is common
15. Which of the following is true regarding neurosyphilis?
- A. meningovascular form is associated with obliterative endarteritis of the meninges
  - B. it occurs in the secondary stage of the disease
  - C. tabes dorsalis is the type that leads to dementia
  - D. parietic neurosyphilis is aseptic and is an immune reaction to bacterial components
  - E. neurosyphilis occurs in approximately half of untreated and 10% of treated patients