1. A 23 year old woman has sudden onset of fever, headache, and confusion lasting three days. Her physical exam shows disorientation. A spinal tap yields a CSF that is pink and DNA analysis indicates HSV infection. Considering the part of her brain that is most likely affected by the virus, which symptom could she exhibit from this condition?
   A. loss of tactile sensation
   B. astereognosis
   C. upper homonymous quadrantanopia
   D. inability to localize pain stimuli
   E. loss of accommodation reflex

2. A 50 year-old man was brought to the ED by his partner because he exhibited signs of a stroke. A CT showed an infarcted area in the lateral aspect of the right frontal lobe. Which symptom would this man exhibit:
   A. left eye turned to the right
   B. right eye turned to the left
   C. dilated pupil in the left eye
   D. constricted pupil in the left eye
   E. left and right eyes turned to the right

3. A 31 year-old man visited his physician because he experienced headache accompanied by right-sided facial pain for the past few days. A neurological exam showed he also had a loss of tactile sensation on the left side of his body and face. An MRI indicated dissection of the carotid artery on the right side. Which other symptom is this man likely to have:
   A. dilated pupil on the right side
   B. ptosis and miosis on the right side
   C. intense facial pain triggered by touching the face
   D. nystagmus
   E. Lt and Rt eyes in fixed gaze to the left

4. You are testing a patient's pupillary light reflex and observe the following situation. When a light is shined into the left eye, only a direct response is obtained. However, when a light is shined into the right eye, only a consensual response is obtained. This is an indication that:
   A. There is a lesion of the right efferent pathway (CN III)
   B. There is a lesion of the left efferent pathway (CN III)
   C. There is a lesion of the right optic nerve
   D. There is a lesion of the left optic nerve
   E. There is a lesion in the right pretectal area
5. On examination, you find that a patient's eyes have the position shown on the right when asked to look forward. This is most likely due to a lesion of:
   A. Right cranial nerve VI nucleus
   B. Left cranial nerve VI nucleus
   C. MLF
   D. Left cranial nerve III
   E. Right cranial nerve III

6. On examining a patient you obtain the following findings: Shining a light into the right eye produces no effect, but shining a light into the left eye causes both the left and right pupils to constrict. This result could be caused by a lesion of:
   A. right optic tract
   B. right optic nerve
   C. right cranial nerve III
   D. left cranial nerve III
   E. right pretectal area

7. A 30-year-old woman is unable to localize sound presented to her, but her hearing is normal otherwise. Which of the following structures would NOT be the location of a lesion causing this symptom:
   A. auditory cortex
   B. cochlear nucleus
   C. inferior colliculus
   D. lateral lemniscus
   E. medial geniculate nucleus

8. A 50 year-old woman sees her physician with symptoms of headache, hearing loss on the left side, tinnitus, unsteadiness, and nausea. The most likely cause for these symptoms is:
   A. circumscribed astrocytoma
   B. medulloblastoma
   C. oligodendroglioma
   D. schwannoma
   E. ependymoma

9. Which other deficit could the above woman also have:
   A. loss of tactile sensation on one side of body
   B. loss of pain on one side of the body
   C. loss of sense of smell
   D. visual field deficit
   E. weakness of facial muscles on one side
10. A 20 year-old man sees his physician because he has had trouble hearing. He also says he hears a ringing sound in both ears most of the time. On exam he loses his balance easily and hearing loss is evident in both ears. An MRI taken several days later is shown. Examination also reveals several small menigiomas at various locations. The condition this man has is known as: E
   A. tuberous sclerosis
   B. Von Hippel-Lindau Disease
   C. Sturge Weber Disease
   D. NF-1
   E. NF-2

11. After his wife had a stroke, a husband noticed that his wife's hair was always tangled and uncombed on the left side of her head, although on the right her hair was straightened and orderly. The left side of her face was usually dirty from food remaining there, but the right face was always clean. She stopped putting her ring and watch on her left hand. When eating, she never used her fork on the left side of her plate and, surprisingly, she often asked why she was not given a fork to eat with. This woman's stroke most likely damaged the: A
   A. parietal lobe
   B. temporal lobe
   C. occipital lobe
   D. premotor cortex of frontal lobe
   E. orbitomedial cortex of frontal lobe

12. A patient who has not been sleeping well presents to your sleep clinic. During a sleep trial you notice that the patient has multiple hypnic myoclonic episodes, which disrupts the patients sleep. This patient is experiencing difficulty during which sleep stage: A
   A. stage 1
   B. stage 2
   C. stage 3
   D. REM

13. An infant is born with a red mark on its face described as a port wine stain over her left eyelid and forehead. At 3 months of age, she develops seizures and her further cognitive development is slow. An MRI shown here indicates the reason for a homonymous hemianopia that is now evident in the child. The condition shown in the MRI is due to: C
   A. epidural hemorrhage
   B. subdural hemorrhage
   C. angioma of pia mater
   D. subarachnoid hemorrhage
   E. intraparenchymal hemorrhage
14. A healthy 58 year-old women suddenly collapsed in her home with her body jerking uncontrollably. Her husband rushed over to help her. He tried to ask her what happened but she was unable to respond for several minutes. Eventually she recovered and she was able to answer him. He took her to the ED where a CT was done as shown here. A biopsy of the abnormal region shown in the CT would likely show: B
   A. perivascular pseudorosettes
   B. psammoma bodies
   C. verocay bodies
   D. areas of necrosis with pseudopalisading
   E. chicken-wire vascular pattern

15. A teenager stayed out past midnight without permission and the next morning her mother did not say anything about it. The following night the teen came home early and the mother told her how pleased she was that she came home so early. She suggested that the next day they would go out and see if they could find a suitable prom dress. The daughter looked forward to this very much. This mom used which combination of responses to increase her daughter’s likelihood of coming home on time?
   A. negative punishment then positive reinforcement
   B. positive punishment then negative reinforcement
   C. negative punishment then negative reinforcement
   D. positive punishment then positive reinforcement
   E. aversive conditioning then positive reinforcement

16. In the experiment of Watson and Rayner, the infant was frightened by a loud clang when he reached for the (white) stuffed toy. Later, the experimenters demonstrated that the child also exhibited anxiety with the presentation of a Santa Claus mask (with white beard) and (white) absorbent cotton. Attaching fear to these other objects is an example of: C
   A. habituation
   B. operant conditioning
   C. generalization
   D. systematic desensitization
   E. negative reinforcement

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