1. After a stroke, a patient displays spasticity typical of an upper motor neuron lesion. What abnormal reflex is seen in spasticity?
   A. flexion-crossed extension reflex
   B. myotactic reflex
   C. baroreflex
   D. clasp-knife reflex
   E. vestibulo-ocular reflex

2. Whenever he tries to pick up an object, a patient's right hand tends to shake and overshoot the target. He finds he cannot rhythmically tap his right hand on his knee (dysdiadochokinesia). Which of the following would be the likeliest cause of his trouble?
   A. A left cerebellar hemisphere hemorrhage
   B. A metastatic tumor in the vermis
   C. A multiple sclerosis plaque in the flocculonodular lobe
   D. A right cerebellar hemisphere infarction
   E. Right carpal tunnel syndrome
A 22 year old woman lies in a darkened room because of a throbbing left temporal headache with nausea and vomiting. She recalls seeing a “zig-zag” band of pulsating lights about 15 minutes before the headache began. What is the most likely diagnosis?

A. Subarachnoid hemorrhage  
B. Simple partial seizure in the occipital lobe  
C. Migraine with aura  
D. Cluster headache  
E. Temporal arteritis

A 62 year old man presents with intense, lightning-like pain on his jaw and chin whenever he touches or moves his jaw. This has made it extremely difficult to eat, and nearly impossible for him to shave. Which one of the following would be at the top of your differential diagnosis list?

A. Migraine headache  
B. Cluster headache  
C. Pseudotumor cerebri  
D. Giant cell arteritis  
E. Trigeminal neuralgia

A young boy is bedridden and incapacitated by spontaneous muscle contractions in his limbs and trunk, causing him to twist and turn into unnatural, fixed postures. What type of movement disorder is this?

A. Dystonia  
B. Choreaathetosis  
C. Myoclonus  
D. Asteixis  
E. Tic
6. A 55 year old man is having his annual physical. On examination, you observe a tremor in the right hand at rest. Finger-to-nose testing is good, but the patient walks with a slow, deliberate gait. His face shows little emotion and he has increased tone in his right arm and leg. You suspect a basal ganglia disorder (Parkinson's Disease). Which one of the following is responsible for the patient’s condition?
A. Infarct in the subthalamic nucleus
B. Abscess in the caudate nucleus
C. Tumor in the globus pallidus internum
D. Hemorrhage in the globus pallidus externum
E. Degeneration of the substantia nigra

7. A 27 year old female complains of diplopia, fatigue and numbness in her right leg. Examination reveals a positive Babinski sign in her right leg and she is unable to look to the left. History reveals previous issues with numbness and tingling in her left leg, and a brief loss bladder control two years ago. What is the best diagnosis of this patient?
A. Guillain-Barre syndrome
B. Multiple sclerosis
C. Neuromyelitis optica
D. Acute disseminated encephalomyelitis (ADEM)
E. Progressive multifocal leukoencephalopathy (PML)

8. A 69-year-old woman is brought to the Emergency Department. The daughter reports that her mother suddenly seemed to be unable to speak. The examination reveals that the woman has a nonfluent (Broca) aphasia. A sagittal MRI most likely shows a lesion in which of the following gyri?
A. Angular
B. Inferior frontal
C. Lingual
D. Middle frontal
E. Supramarginal
9. A 72 year old woman with hypertension complains of a severe headache. While being examined, she develops numbness and weakness in her left leg and foot. Her upper extremities and right side are not affected. You suspect an occlusion in which one of the following cerebral vessels?

A. Right anterior cerebral artery
B. Left middle cerebral artery
C. Right posterior cerebral artery
D. Posterior communicating artery
E. Left anterior cerebral artery

10. A teacher has had 2 weeks of back pain radiating down his posterior left leg. Which scan is the best for demonstrating a herniated disc?

A. MRA
B. CAT scan
C. PET scan
D. T1 MRI
E. T2 MRI

11. A 74-year-old man is brought to the Emergency Department by his wife. She explains that he suddenly became weak in his left lower extremity. She immediately rushed him to the hospital, a trip of about 20 minutes. The examination reveals an alert man who is obese and hypertensive. He has no cranial nerve deficits, is slightly weak on his left side, and has no sensory deficits. Within 2 hours the weakness has disappeared. An MRI obtained the following day shows no lesions. Which of the following most specifically describes this man’s medical experience?

A. Complete block of the middle cerebral artery
B. Small embolic stroke
C. Small hemorrhagic stroke
D. Epidural hematoma
E. Transient ischemic attack
12. A 71-year-old morbidly obese man is brought to the Emergency Department by his son. The son reports that the man complained of a sudden excruciating headache and then became stuporous. Suspecting a ruptured aneurysm, the physician orders a CT. Which of the following describes the appearance of acute blood in the subarachnoid space in this patient (SAH)?

A. Black (hypodense)
B. Black to grey
C. Medium grey
D. Light grey
E. White (hyperdense)

13. A 50 year old woman with a history of hypertension and tobacco use presents with a sudden onset of the "worst headache of her life" associated with confusion, vomiting, neck stiffness, and left-sided weakness. She was noted to complain of a headache 2 weeks earlier. Her neurologic exam is significant for stupor, right CN III paralysis, left-sided weakness, and a rigid neck. She is hyponatremic. Vitals: HR of 120 bpm, BP of 180/90 mmHg, Temp. 36.4°C. Your best diagnosis would be:

A. Bacterial meningitis
B. Pseudotumor cerebri
C. Tetanus
D. Subarachnoid hemorrhage
E. Occlusion of the left internal carotid artery

14. An 18 year old male who is barely breathing is brought into the emergency room, apparently suffering from an overdose of heroin. You immediately administer a nasal bolus of naloxone, and the patient's respiratory rate returns to normal within one minute. Naloxone's effectiveness is due to which one of the following?

A. It is a potent $\mu$OR receptor agonist.
B. It is a potent $\kappa$OR receptor antagonist.
C. It acts directly on respiratory centers in the brainstem.
D. It is a potent $\sigma$OR receptor agonist.
E. It breaks down the heroin sidechains, rendering it useless.
Based on the autopsy images below, which one of the following best explains what happened to this individual?

A. Acute ischemic infarct.
B. Subacute ischemic infarct.
C. Chronic ischemic infarct.
D. Embolic infarct.
E. Lacunar infarct.

Data told you not to touch that.

After a stroke, a patient displays spasticity typical of an upper motor neuron lesion. What abnormal reflex is seen in spasticity?

A. flexion-crossed extension reflex (postural reflex)
B. myotactic reflex (normal stretch reflex)
C. Baroreflex (BP = HR)
D. clasp-knife reflex (rapid decrease in resistance; indicates UMN lesion)
E. vestibulo-ocular reflex (normal eye movements paired with head movements)
2. Whenever he tries to pick up an object, a patient's right hand tends to shake and overshoot the target. He finds he cannot rhythmically tap his right hand on his knee (dysdiadochokinesia). Which of the following would be the likeliest cause of his trouble?

A. A left cerebellar hemisphere hemorrhage  
B. A metastatic tumor in the vermis  
C. A multiple sclerosis plaque in the flocculonodular lobe  
D. A right cerebellar hemisphere infarction  
E. Right carpal tunnel syndrome

3. A 22 year old woman lies in a darkened room because of a throbbing left temporal headache with nausea and vomiting. She recalls seeing a “zig-zag” band of pulsating lights about 15 minutes before the headache began. What is the most likely diagnosis?

A. Subarachnoid hemorrhage  
B. Simple partial seizure in the occipital lobe  
C. Migraine with aura  
D. Cluster headache  
E. Temporal arteritis

4. A 62 year old man presents with intense, lightning-like pain on his jaw and chin whenever he touches or moves his jaw. This has made it extremely difficult to eat, and nearly impossible for him to shave. Which one of the following would be at the top of your differential diagnosis list?

A. Migraine headache  
B. Cluster headache  
C. Pseudotumor cerebri  
D. Giant cell arteritis  
E. Trigeminal neuralgia
5. A young boy is bedridden and incapacitated by spontaneous muscle contractions in his limbs and trunk, causing him to twist and turn into unnatural, fixed postures. What type of movement disorder is this?

A. Dystonia – seen here
B. Choreoathetosis – dance-like (BG)
C. Myoclonus – brief muscle contraction
D. Asterixis – flapping tremor of hand
E. Tic – sudden, repetitive, non-rhythmic movement

6. A 55 year old man is having his annual physical. On examination, you observe a tremor in the right hand at rest. Finger-to-nose testing is good, but the patient walks with a slow, deliberate gait. His face shows little emotion and he has increased tone in his right arm and leg. You suspect a basal ganglia disorder (Parkinson's Disease). Which one of the following is responsible for the patient's condition?

A. Infarct in the subthalamic nucleus
B. Abscess in the caudate nucleus
C. Tumor in the globus pallidus internum
D. Hemorrhage in the globus pallidus externum
E. Degeneration of the substantia nigra

7. A 27 year old female complains of diplopia, fatigue and numbness in her right leg. Examination reveals a positive Babinski sign in her right leg and she is unable to look to the left. History reveals previous issues with numbness and tingling in her left leg, and a brief loss bladder control two years ago. What is the best diagnosis of this patient?

A. Guillain-Barre syndrome
B. Multiple sclerosis
C. Neuromyelitis optica
D. Acute disseminated encephalomyelitis (ADEM)
E. Progressive multifocal leukoencephalopathy (PML)
8. A 69-year-old woman is brought to the Emergency Department. The daughter reports that her mother suddenly seemed to be unable to speak. The examination reveals that the woman has a nonfluent (Broca) aphasia. A sagittal MRI most likely shows a lesion in which of the following gyri?

A. Angular
B. Inferior frontal
C. Lingual
D. Middle frontal
E. Supramarginal

9. A 72-year-old woman with hypertension complains of a severe headache. While being examined, she develops numbness and weakness in her left leg and foot. Her upper extremities and right side are not affected. You suspect an occlusion in which one of the following cerebral vessels?

A. Right anterior cerebral artery
B. Left middle cerebral artery
C. Right posterior cerebral artery
D. Posterior communicating artery
E. Left anterior cerebral artery

10. A teacher has had 2 weeks of back pain radiating down his posterior left leg. Which scan is the best for demonstrating a herniated disc?

A. MRA
B. CAT scan
C. PET scan
D. T1 MRI
E. T2 MRI
11. A 74-year-old man is brought to the Emergency Department by his wife. She explains that he suddenly became weak in his left lower extremity. She immediately rushed him to the hospital, a trip of about 20 minutes. The examination reveals an alert man who is obese and hypertensive. He has no cranial nerve deficits, is slightly weak on his left side, and has no sensory deficits. Within 2 hours the weakness has disappeared. An MRI obtained the following day shows no lesions. Which of the following most specifically describes this man's medical experience?

A. Complete block of the middle cerebral artery  
B. Small embolic stroke  
C. Small hemorrhagic stroke  
D. Epidural hematoma  
E. Transient ischemic attack

12. A 71-year-old morbidly obese man is brought to the Emergency Department by his son. The son reports that the man complained of a sudden excruciating headache and then became stuporous. Suspecting a ruptured aneurysm, the physician orders a CT. Which of the following describes the appearance of acute blood in the subarachnoid space in this patient (SAH)?

A. Black (hypodense)  
B. Black to grey  
C. Medium grey  
D. Light grey  
E. White (hyperdense)

13. A 50-year-old woman with a history of hypertension and tobacco use presents with a sudden onset of the “worst headache of her life” associated with confusion, vomiting, neck stiffness, and left-sided weakness. She was noted to complain of a headache 2 weeks earlier. Her neurologic exam is significant for stupor, right CN III paralysis, left-sided weakness, and a rigid neck. She is hyponatremic. Vitals: HR of 120 bpm, BP of 180/90 mmHg, Temp. 36.4°C. Your best diagnosis would be:

A. Bacterial meningitis  
B. Pseudotumor cerebri  
C. Tetanus  
D. Subarachnoid hemorrhage  
E. Occlusion of the left internal carotid artery
14. An 18 year old male who is barely breathing is brought into the emergency room, apparently suffering from an overdose of heroin. You immediately administer a nasal bolus of naloxone, and the patient's respiratory rate returns to normal within one minute. Naloxone's effectiveness is due to which one of the following?

A. It is a potent μOR receptor agonist.
B. It is a potent OR receptor antagonist.
C. It acts directly on respiratory centers in the brainstem.
D. It is a potent κOR receptor agonist.
E. It breaks down the heroin sidechains, rendering it useless.

15. Based on the autopsy images below, which one of the following best explains what happened to this individual?

A. Acute ischemic infarct.
B. Subacute ischemic infarct.
C. Chronic ischemic infarct.
D. Embolic infarct.
E. Lacunar infarct.