1. A 72-year-old woman with a past medical history of hypertension and hypercholesterolemia presents with a 10 day history of left sided jaw pain when chewing on her usual steak dinner. She states that the jaw pain occurs at the angle of her mandible and that it “eases-up” five minutes after she stops chewing. She also reports a dull left sided headache over her left temple. On further questioning, she agrees that she has experienced myalgias in her arms and thighs but attributed this to being “out of shape.” She also reports intermittent episodes of “spots” in front of her left eye. Her neurological examination is remarkable for tenderness over her left temple. [Diagnosis: Temporal arteritis]

   a. Discuss the importance of jaw claudication and visual symptoms
   b. Discuss the relationship to polymyalgia rheumatica
   c. Discuss why it is important to assess for temporal artery tenderness
   d. Discuss that both an ESR and a CRP should be assessed
   e. Discuss why an ESR might not be elevated, [e.g. NSAIDS, MTX]
   f. Discuss why it is important to start prednisone immediately
   g. Discuss when and why a temporal artery biopsy should be obtained

2. A 19-year-old woman presents with a history of unilateral, pulsatile headaches since age 12. The headaches usually occur on the right but have been on the left side of her head as well. She is nauseated and intolerant of loud noises and sounds when these headaches occur. She consulted her pediatrician who diagnosed “tension headaches” and advised her to take Motrin. She tried this and other over the counter medications to little effect. She noted that her headaches were more frequent and severe around her menses. They are relieved by lying down in dark rooms and by sleeping. When she described blurred vision associated with these headaches, her gynecologist suspected that she needed glasses. She referred her for an eye examination which was normal. She was then started on oral contraceptive medications with the explanation that this would suppress her menstrual periods and perhaps her headaches. She is referred to you because her headaches have become more frequent and severe. Her neurological examination is normal. [Diagnosis: Transformed migraine]

   a. Discuss the importance of correctly diagnosing migraine
   b. Discuss the side effects of long term NSAID use
   c. Discuss why her headaches worsened with oral contraceptives
   d. Discuss why a head CT is not indicated
   e. Discuss the American Academy of Neurology’s Practice Parameters regarding the treatment of migraine headache
   f. Discuss prophylactic and abortive migraine headache treatments
   g. Discuss the importance of a 6 week therapeutic trial
   h. Discuss the use of Botox when migraines occur ≥ 15 times/mo lasting 4 hours or more an episode
3. A 56-year-old airline captain is on final approach when she experiences acute onset of paresthesias in her right hand followed by right hand twitching that progressed up her elbow into her face. Her co-pilot makes the landing and she is transported to your hospital. Her past medical history is remarkable for a 50 pack year smoking history. Her only contact with a health care provider is that she underwent a screening flight physical every 6 months. She has never had a colonoscopy. Her neurological examination demonstrates agraphesthesia on her right index finger. She has 4/5 weakness in her right hand intrinsic muscles. Her neurological examination is otherwise unremarkable. Head CT demonstrates a 5 mm in diameter mass with surrounding edema at the gray-white junction just below the left central sulcus that enhances with contrast. The mass displaces the surrounding brain structures. [Diagnosis: Metastatic brain tumor]

a. Discuss why agraphesthesia and a seizure implies a cortical lesion
b. Discuss why the lesion localizes to the left central sulcus clinically
c. Discuss the phenomenon of Todd’s paralysis
d. Discuss why a metastatic lesion is likely
e. Discuss why breast, lung and colon cancer are highly likely
f. Discuss why a head CT without contrast is the initial test of choice
g. Discuss why an MRI should be used to prove a solitary metastasis
h. Discuss when surgical treatment is indicated (solitary metastasis)

4. A 25-year-old woman presents with gradual onset of “blurred vision” and generalized headache that has been increasing in intensity over the past 3 weeks. It is most severe upon awakening in the morning and abates through the day. On two occasions, her headaches have been so severe that she has vomited. On examination, she is noted to be 64 inches (163 cm) tall and weigh 220 lbs, (100 kilograms). She consulted an optometrist who noted normal visual acuity with bilateral papilledema. She performed formal visual fields that demonstrated enlargement of both “blind spots,” and sent her to see you. The patient’s neurological examination reveals bilateral papilledema and sixth nerve palsies. Her neurological examination is otherwise unremarkable. A head CT without contrast demonstrates “slit-like” ventricles but no hemorrhage, mass or midline shift. An MR venogram was unremarkable. [Diagnosis: IIH or pseudotumor cerebri]

a. Discuss the signs of increased intracranial pressure
b. Discuss how increased ICP is evaluated
c. Discuss communicating vs. non-communicating hydrocephalus
d. Discuss the importance of obtaining an MR venogram
e. Explain the visual loss observed in this disorder (enlarging blind spot)
f. Discuss the importance of following the visual fields - not just acuity
g. Discuss the importance of excluding a cerebral thrombosis.
h. Discuss idiopathic intracranial hypertension (pseudotumor cerebri)
i. Discuss the causes and treatments for IIH.
j. Discuss “fulminant IIH” and its treatment
5. A 75-year-old retired journalist is brought in by his wife because he is having increased difficulties with his speech. She states that he used to be quite eloquent but now he communicates with brief one to two word answers. He has also developed a slowly progressive right hemiparesis over the past several weeks. His wife denies any loss of consciousness, tongue biting or episodes of incontinence. His examination is remarkable for a Broca’s aphasia in addition to a right hemiparesis. Head CT without contrast demonstrates an ill-defined mass in the left frontal lobe. When contrast is given, there is enhancement of this mass such that it is visible extending across the anterior commisure and into the right frontal lobe as well as into the left parietal lobe. [Diagnosis: Glioma]

a. Discuss why the lesion localizes to the left frontal lobe clinically
b. Discuss why a primary CNS neoplasm is the most likely diagnosis
c. Discuss why a head CT was performed with and without contrast
d. Discuss the importance of a biopsy
e. Discuss why complete surgical excision is rarely achieved
f. Discuss why prophylactic anticonvulsants are not given.