

Sample Written Exam – Neurology

Question 1

Name the MOST common pathogen(s) causing recurrent bacterial meningitis in the following cases:

- a. Child with shunted hydrocephalus (list **TWO**)

MODEL ANSWER (0.5 marks each, 1 mark total)

- Staph epidermidis
- Staph aureus

- b. Child with complement deficiency

MODEL ANSWER (0.5 marks total)

- Meningococcus

- c. Child post splenectomy

MODEL ANSWER (0.5 marks total)

- Streptococcus pneumoniae

- d. Child with myelomeningocele (list **TWO**)

MODEL ANSWER (0.5 marks each, 1 mark total)

- Staphylococcus
- Gram negative organisms



Question 2

A 67-year-old man presents with a 5-day history of bilateral but asymmetric lower motor neuron pattern facial weakness. There is no history of trauma. He has no other symptoms. Electrodiagnostic studies suggested a neurogenic etiology.

List **FOUR** disorders that should be considered a priority in the differential for this presentation.

MODEL ANSWER (0.5 marks each, 2 marks total)

- GBS
- Lyme
- Sarcoid
- HIV
- Neurolymphomatosis
- Neoplastic meningitis
- EBV virus associated facial palsy (mainly children)
- Bell's palsy (rarely bilateral and simultaneous)
- Granulomatosis with polyangiitis (GPA)

Question 3

Name **TWO** central nervous system complications that may be associated with untreated inflammatory gastrointestinal diseases such as ulcerative colitis or Crohn's disease.

MODEL ANSWER (0.5 marks each, 1 mark total)

- Demyelinating lesion
- Chronic progressive myelopathy
- Involvement of the posterior columns if B12 deficiency
- Venous thrombosis
- Arterial thrombosis
- Cerebral vasculitis



Question 4

A 37-year-old man who recently immigrated to Canada from Central America has been experiencing headaches and double vision for the past few months. He presents to the emergency department after a witnessed generalized tonic-clonic seizure. The neurologic examination shows reduced adduction and elevation of the left eye with a sluggishly reactive left pupil. There are no other findings on the neurologic examination. His chest x-ray is normal. A contrast MRI is shown.



a. What abnormality appears on the contrast MRI?

MODEL ANSWER (0.5 marks total)

- Cystic lesion, rim enhancing

b. Where is the abnormality located?

MODEL ANSWER (0.5 marks total)

- Left midbrain

c. What is the MOST likely diagnosis?

MODEL ANSWER (0.5 marks total)

- Neurocysticercosis



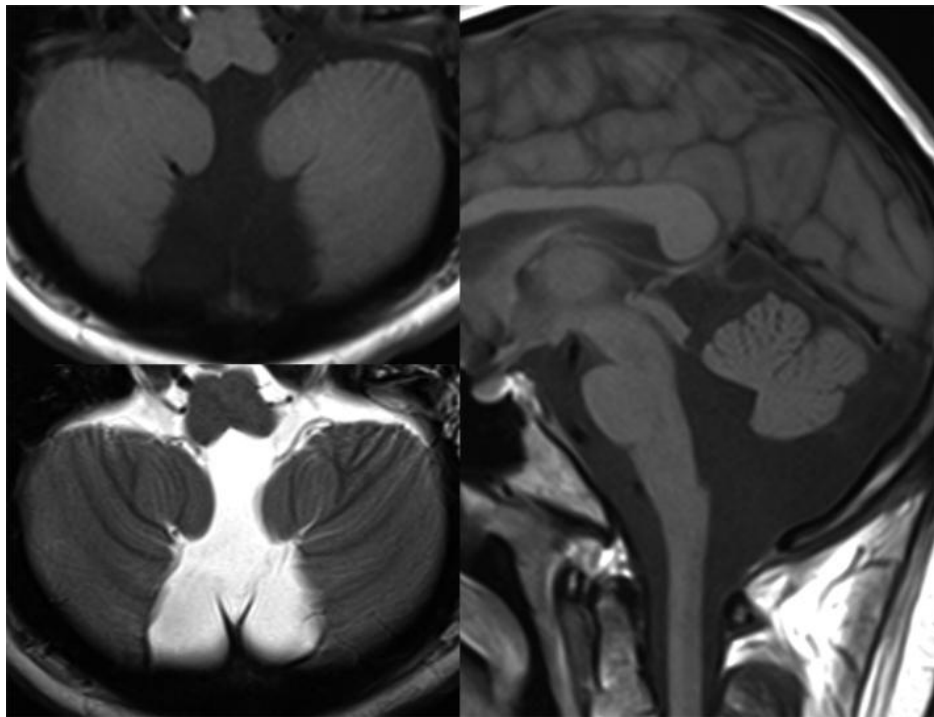
- d. After his seizures have been treated, name **ONE** drug in your first-line treatment for the underlying condition.

MODEL ANSWER (0.5 marks total)

- Praziquantel, Albendazole, +/- steroids first

Question 5

A 6-month-old male infant has been referred for progressive macrocephaly and irritability. His MRI scan is shown in the referenced illustration.



- a. What is the name of this abnormality?

MODEL ANSWER (0.5 marks total)

- Dandy Walker malformation

- b. What is the associated complication that would MOST likely require neurosurgical intervention?

MODEL ANSWER (0.5 marks total)

- Hydrocephalus