

021 Nuerology miniOSCE

2nd semester

the first month

By

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Q1: A 41-year-old female presents with a **fever** of 38.8°C, right facial twitching, and progressive disorientation over the past 2 days.

1. What is the most likely diagnosis for this patient?

Answer: Viral Encephalitis

2. What are two common causes of viral encephalitis?

Answer: HSV-1 & HSV-2 and VZV

3. What are three key investigations to perform in this case?

Answer: The three key investigations are:

1. **CSF (Cerebrospinal Fluid) analysis**
2. **EEG (Electroencephalogram)**
3. **Brain MRI**
4. **PCR (Polymerase Chain Reaction) testing**

4. What is the cause of the facial twitching in this patient?

Answer: meningeal irritation

5. What are two common treatments for viral encephalitis in this patient?

Answer: The two main treatments are:

1. **Acyclovir** (10 mg/kg IV every 8 hours for 2 weeks)
2. **Antipyretics** (e.g., acetaminophen or ibuprofen) to control fever



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Q2 A 56-year-old male presents with confusion. He has a history of **alcohol withdrawal** episodes, one occurring 2 years ago and another 10 years ago, both managed at the same hospital. He exhibits **restrictive eye movements**, **nystagmus**, and an **ataxic gait**.

1. What is the most likely diagnosis for this patient?

Answer: The most likely diagnosis is **Wernicke Encephalopathy**.

2. What is the most likely risk factor for this patient?

Answer: The most likely risk factor is **Alcohol** consumption, which is a common cause of Wernicke Encephalopathy.

3. What are three other risk factors for Wernicke Encephalopathy?

- **Answer:** Three other risk factors include:
 1. **Bariatric surgery**
 2. **Malignancy**
 3. **Anorexia nervosa**

4. What are two treatments for Wernicke Encephalopathy?

Answer: The two main treatments are:

1. **Thiamine (Vitamin B1) supplementation**
2. **Glucose administration**

5. What are two complications of Wernicke Encephalopathy?

Answer: Two major complications include:

1. **Death**
2. **Dementia**

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Q3: A 55-year-old male with a history of **hypertension** presents with a **normal heart rate**, **heavy tongue**, **right-sided weakness**, and a **headache**.

1. What is the most likely diagnosis for this patient?

- **Answer:** The most likely diagnosis is a **Left Intraparenchymal Hemorrhage**.

2. What are two common causes of intraparenchymal hemorrhage and their locations?

Answer: Two common causes include:

1. **Microaneurysm (Charcot-Bouchard aneurysm)** located in the **lenticulostriate arteries**
2. **Arteriovenous Malformation (AVM)**.

3. What is the initial management for this patient?

- **Answer:** The initial management includes:
 1. **Treating hypertension**
 2. **Assessing coagulopathy**



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the second month

By

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Q1: A 65-year-old male presents with a 3-day history of drooping eyelids (ptosis) and double vision (diplopia). His symptoms tend to improve in the evening. He also reports drooling on the right side of his face. On examination, you note weakness in the muscles of the eyelids and extraocular movements but no sensory abnormalities. His deep tendon reflexes are normal. He has a history of a similar episode occurring six months ago that resolved spontaneously. There is no recent history of fever, illness, or trauma.

1. **What is the most likely diagnosis for this patient?**
 - **Answer:**
The most likely diagnosis is **Myasthenia Gravis (MG)**.
2. **What is the pathophysiology behind Myasthenia Gravis?**
 - **Answer:**
Myasthenia Gravis is an autoimmune disorder where the body produces **autoantibodies against acetylcholine (ACh) receptors** at the neuromuscular junction.
3. **List four characteristic features of limb weakness commonly seen in this disease.**
 - **Answer:**
 1. **Hand weakness** (more than feet).
 2. **Symmetrical weakness.**
 3. More prominent weakness in **triceps and quadriceps**.
 4. **Proximal muscle weakness** > distal muscle weakness.
4. **What are the relevant blood and imaging investigations to confirm the diagnosis?**
 - **Answer:**
 - **Blood investigations:**
 - **Anti-acetylcholine receptor antibodies** (Anti-AChR antibodies).
 - **Imaging:**
 - **Chest CT:** To rule out thymoma, which is commonly associated with Myasthenia Gravis.
5. **A colleague suggests Guillain-Barré Syndrome (GBS) as a possible diagnosis. Based on the symptoms provided, how would you differentiate this case from GBS?**
 - **Answer:**
 - **Diplopia and normal reflexes:** These symptoms are typical of **Myasthenia Gravis**, but in **GBS**, reflexes are usually **absent** due to peripheral nerve involvement.
 - **Symptom improvement in the evening:** This is consistent with **MG**, where muscle weakness fluctuates and improves with rest. In **GBS**, weakness is **progressive** and does not improve with rest.
 - **GBS typically presents with ascending weakness** (starting from the lower limbs), whereas this patient presents with **cranial nerve involvement** (ptosis, diplopia) and **profound upper limb weakness**, which are more characteristic of **MG**.

Q2: A 35-year-old male presents with a complaint of **severe, unilateral headache** that typically starts around **2 AM**, waking him from sleep. The pain is localized to one side of his head, around the **eye** region, and is associated with mild **conjunctival swelling** and **tearing** on the affected side. The patient describes the pain as sharp and stabbing, and it lasts for **about 90 minutes** each time. He experiences these headaches **daily** over the last week. There is no significant past medical history, and the patient denies any recent trauma or other neurological symptoms.

1. **What is the most likely diagnosis for this patient's symptoms?**

○ **Answer:**

The most likely diagnosis is **Cluster Headache**.

2. **Mention two prophylactic medications commonly used for cluster headaches.**

○ **Answer:**

1. **Verapamil** (a calcium channel blocker).
2. **Steroids** (e.g., Prednisone) for short-term control during an acute episode.

3. **What investigations are typically done to confirm the diagnosis of cluster headache?**

○ **Answer:**

- **Brain MRI:** To rule out secondary causes of headaches, such as tumors or other structural abnormalities that could mimic cluster headaches.

4. **What are the main treatment options for managing cluster headaches?**

- **Oxygen therapy:** Inhaling 100% oxygen at a high flow rate (12-15 L/min) for 15-20 minutes can significantly relieve pain during an acute attack.
- **Sumatriptan** (a serotonin agonist): It can be administered subcutaneously or via nasal spray to provide quick relief from the pain of an acute cluster headache.

5. **What are the differences in the duration of pain for the three major types of headaches (cluster, migraine, tension-type)?**

○ **Answer:**

1. Cluster headache: Typically lasts between **15 minutes and 2 hours** (occasionally up to 3 hours), and the attacks occur in **clusters** (several times a day for weeks to months).

2. Migraine headache: Lasts **4 to 72 hours** and is often accompanied by nausea, photophobia, and phonophobia.

3. Tension-type headache: Duration can range from **30 minutes to 7 days**. The pain is usually bilateral, mild to moderate in intensity, and feels like a tight band around the head.

Q3: A 70-year-old male presents to the clinic with his daughter, who is concerned about his recent memory loss. The patient has been **getting lost in familiar places**, asking the same **repetitive questions** multiple times, and **misplacing things** regularly. These symptoms have been worsening over the past few months. An MRI of the brain has already been performed.

1. **What is the most likely diagnosis based on the patient's symptoms?**

○ **Answer:**

The most likely diagnosis is **Alzheimer's Disease (AD)**.

This diagnosis is supported by the symptoms of **memory loss**, **disorientation (getting lost in familiar places)**, and **repetitive questioning**, which are classic signs of Alzheimer's disease, a form of **dementia**.

2. **Mention two histological findings commonly associated with Alzheimer's Disease.**

○ **Answer:**

1. **Amyloid plaques** (extracellular deposits of amyloid beta).
2. **Tau tangles** (intracellular twisted fibers of tau protein, which impair cellular function).

3. **Based on the MRI image, what two findings would you expect in a patient with Alzheimer's Disease?**

○ **Answer:**

1. **Moderate to severe medial temporal atrophy**, which affects the hippocampus, a region essential for memory.
2. **Milder global atrophy**, indicating the progressive loss of brain mass throughout the cerebral cortex, particularly in the parietal and frontal lobes.

4. **Mention two drugs with distinct mechanisms of action that are used in the management of Alzheimer's Disease.**

○ **Answer:**

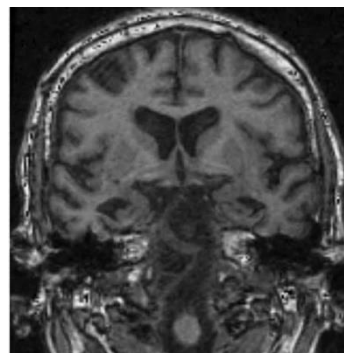
1. **Donepezil**: A **cholinesterase inhibitor** that increases acetylcholine levels in the brain, which is beneficial in the treatment of Alzheimer's-related cognitive decline.
2. **Memantine**: An **NMDA antagonist**, which regulates glutamate activity and helps to protect against excitotoxicity, as well as an **HT3 receptor antagonist** to manage neurodegenerative symptoms.

5. **The patient is agitated. What class of drug would you consider for managing his agitation?**

○ **Answer:**

The patient is agitated, and the appropriate class of drug to consider would be **antipsychotics**.

Antipsychotic medications (e.g., risperidone, olanzapine) can be used cautiously to manage agitation and aggression in patients with Alzheimer's disease. However, the use of antipsychotics should be monitored due to the potential for serious side effects, such as increased risk of mortality in elderly patients with dementia.



021 Nuerology miniOSCE

2nd semester

the third month

By

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Neurology Mini-OSCE, third month / second semester questions

1. a 72-year-old woman, presents to the clinic with a 2-week history of new-onset headache localized to the right temporal region. She describes the pain as a constant, throbbing in nature that has gradually worsened. She recently noticed some difficulty chewing due to jaw pain that starts after a few minutes of eating, which she finds unusual.

ESR elevated

1. What is the most likely diagnosis? (1mark)
2. Mention 3 physical findings are found in this case?(3marks)
3. What is the first line treatment?(2marks)
4. What is the diagnostic test that confirms the diagnosis?(1mark)
5. What are the main complications you found in this case?(2marks)

Answers:

1. Giant Cell Arteritis (GCA) (Also known as Temporal Arteritis).
2. vision changes(amaurosis fugax), jaw claudication,fever, and scalp tenderness
3. Empiric steroids should be started in any patient with a high clinical concern.
4. Temporal artery biopsy.
5. blindness if not readily identified and treated promptly.

2. 18-year-old female has a loss of consciousness,history was taken from her mother she fallen down to the ground. Her mother described Witnesses her body and stiffening for a few seconds, followed by violent rhythmic jerking movements the lips became blue and the attacks lasting for 2minutes of, the physical examination was normal.

1. What is the most likely diagnosis? (1mark)
2. Mention 3 other investigations used to confirm the diagnosis? (3 marks)
3. While we in the hospital awaiting investigations, he had another similar episode. The medical team administered two doses of IV medication within five minutes, but the patient remained unstable. What medications should be administered next while waiting for diagnostic results with doses?(3marks)

4. What are the causes of the patient's state according to the etiology should in her age group? (2marks)
5. The patient stayed up all night to study, and his mom described abnormal jerking movements in her son's arms during breakfast that morning. What does she most likely have?(1mark)

Answers:

1. Generalized tonic-clonic seizure
2. EEG,ECG,MRI,Blood test
3. Phenytoin (15-20 mg/kg),Valproate (20-30 mg/kg),Levetiracetam (30-70 mg/kg)
4. Drug intoxication and withdrawal ,Head trauma,CNS infections
5. Myoclonic Epilepsy

3.A 40-year-old male presented to the Emergency Department in a "sleep like". On initial evaluation, his eyes were closed and he was unresponsive to verbal stimuli. However, upon application of a noxious stimulus, he demonstrated arousal by opening his eyes, localizing the stimulus with purposeful hand movements, and producing inappropriate words. His physical examination was otherwise unremarkable, with no focal neurological deficits noted. Notably, his pupils were pinpoint and reactive to light.

1. what is the state of consciousness of this patient?(1mark)
2. Calculate the GCS for this patient?(3marks)
3. Give 2 causes of the patient state?(2marks)
4. what are the physical findings that you should exclude for the structural brain damage?(3marks)
5. what are the appropriate investigations you should do?(1mark)
6. if the investigation in the previous question (question 5) was normal what medication you would administer for patient?(1mark)

Answers:

1. stupor state
2. Total GCS = E2 + V3 + M5 = 10
3. Opioid toxicity, pontine haemorrhage
4. Roving eye movement, skew deviations, horizontal deviation of the eye to one side.

Suggested answers:

1. Focal neurological deficits (e.g., hemiparesis, facial droop, asymmetric reflexes)
2. Abnormal posturing (decerebrate or decorticate).
3. Asymmetric or fixed pupils
4. Cranial nerve abnormalities
5.
 1. CT brain (non-contrast): rule out hemorrhage or mass
 2. Blood glucose :check for hypoglycemia
 3. Lumbar puncture :to rule out if CNS infection
6. Naloxone : opioid antagonist

Done by :

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