NEUROLOGY

BRAIN METASTASES

HISTORY X MANAGEMENT

OSCE

01

TOPIC - HISTORY TAKING

MEDIC

PATIENT

MARKER

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OSCE

01

PROMPT

45M. The patient presents with a 1-month history of progressive headache, nausea, vomiting, drowsiness, and confusion. He also reports a recent episode of syncope.

OSCE

02

LET'S DISCUSS

INTRODUCTION AND RAPPORT BUILDING

- Confirm patient's identity and consent
- Assess the onset, duration, and progression of symptoms
- Explore the patient's understanding of their condition

OBTAINS A THOROUGH HISTORY OF THE PATIENT'S PRESENTING SYMPTOMS

- Onset of symptoms: When did you first notice these symptoms?
- Nature of symptoms: Are they continuous or intermittent? Have they been getting worse?

- Most important symptoms could include: headaches (especially in the morning), seizures, focal neurological deficits, cognitive or personality changes, and systemic symptoms suggesting a primary malignancy (e.g., unexplained weight loss, chronic cough).

OBTAINS A THOROUGH HISTORY OF THE PATIENT'S PRESENTING SYMPTOMS

- "When did you first notice these symptoms?"
- "Can you describe the nature of your symptoms? Are they continuous or intermittent? Have they been getting worse?"

- "Tell me more about your symptoms. Are there any specific symptoms that are concerning or bothersome to you? For example, do you experience headaches, seizures, focal neurological deficits, cognitive or personality changes, or any other symptoms?"
- "Have you noticed any other symptoms that might suggest a primary malignancy, such as unexplained weight loss or a chronic cough?"

FURTHER EXPLORATION...

- Chronology of symptom development, influence of symptom progression on daily living, previous consultations and treatments.
- Collateral history from close family members or caregivers can provide valuable insights into subtle cognitive or behavioral changes.

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OBTAINS A THOROUGH HISTORY OF THE PATIENT'S PRESENTING SYMPTOMS

- "Can you walk me through the timeline of how these symptoms developed? How have they been affecting your daily life?"
- "Have you previously sought medical advice or received any treatments for these symptoms?"
- "Is there anyone close to you, like family members or caregivers, who might have noticed any subtle cognitive or behavioral changes that could be related to your symptoms?"

RED FLAGS/COMPLICATIONS

- **Red Flags**
  - Rapidly progressing neurological symptoms, new onset seizures in adults, persistent headaches particularly worse in the morning or with coughing or bending over, neurological signs such as weakness or sensory changes

- **Common Complications:**
  - Neurological deficits, seizures, obstructive hydrocephalus, uncal herniation, death.

- **RISK FACTORS:**
  - Known malignancy (particularly lung, breast, melanoma, renal, and colorectal cancer), old age, smoking, certain inherited syndromes, immunosuppression.

OTHER KEY PHRASES

- "Are your symptoms progressing rapidly?"
- "Have you recently experienced any new-onset seizures?"
- "Do your headaches worsen, particularly in the morning or with coughing or bending over?"
- "Have you noticed any weakness or sensory changes?"

- "In some cases, brain metastases can lead to neurological deficits, seizures, obstructive hydrocephalus, uncal herniation, or even death. However, it's important to remember that each case is unique."

- "Are you currently undergoing any treatments, such as chemotherapy or taking steroids?"
- "Do you have any regular medications or allergies? If so, what kind of reactions have you experienced?"
- "Is there any family history of malignancies?"

PAST MEDICAL HISTORY

- Known malignancy, previous treatments (chemotherapy, radiotherapy, surgery), history of smoking, alcohol or substance abuse.

DRUG HISTORY

- Ongoing treatments (chemotherapy, steroids), regular medications, allergies, and nature of the reaction.

FAMILY HISTORY

- Family history of malignancies.

SOCIAL HISTORY:

- Smoking, alcohol use, occupation, support system at home.

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IDEAS, CONCERNS AND EXPECTATIONS

ICE

HISTORY

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01

EXAMINATION

- **Examination Findings:**
  - **Vital Signs:** General observations including weight loss.
  - **Neurological Findings:** Detailed neurological examination to identify focal deficits or signs of raised intracranial pressure; cranial nerve examination may reveal deficits depending on the location of metastases.
  - **Systemic Examination:** Examination for signs of primary malignancy (e.g., breast lumps, abdominal masses, lymphadenopathy, skin lesions).

EXAMINATION

- "Let's start by checking your vital signs, including any observations like weight loss."
- "I'm going to conduct a detailed neurological examination to identify any focal deficits or signs of raised intracranial pressure."
- "I'll also perform a systemic examination to look for signs of primary malignancy, such as breast lumps, abdominal masses, lymphadenopathy, or skin lesions."

DIFFERENTIAL DIAGNOSIS

- Primary brain tumors, brain abscess, stroke, demyelinating disorders. These can be distinguished by a combination of medical history, symptom progression, and distinctive features on imaging.

DIFFERENTIAL DIAGNOSIS

- "Based on the information you've provided, there are a few possible conditions we need to consider, including primary brain tumors, brain abscess, stroke, and demyelinating disorders."
- "We can distinguish these conditions by evaluating your medical history, the progression of symptoms, and examining the distinctive features revealed by imaging."

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INVESTIGATION

- Imaging: MRI brain is the gold standard.
- Laboratory Values: Full blood count, clotting, kidney and liver function, tumor markers, and blood cultures (if infection suspected).
- Other Clinically Relevant Tests: CSF examination if leptomeningeal spread is suspected.

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INVESTIGATION

- "To further assess your condition, we may need to perform some investigations."
- "The gold standard for imaging brain metastases is an MRI of the brain."
- "Additionally, we might need to conduct laboratory tests, including a full blood count, clotting studies, kidney and liver function tests, tumor marker analysis, and blood cultures if infection is suspected."
- "In certain cases where leptomeningeal spread is suspected, a cerebrospinal fluid (CSF) examination might be necessary."

MANAGEMENT PLAN

- **First Line:** Corticosteroids to reduce edema, antiepileptic drugs for seizure control.
- **Second Line:** Whole-brain radiation therapy, surgical resection if solitary metastasis.
- **Third Line:** Stereotactic radiosurgery, chemotherapy, targeted therapy or immunotherapy depending on the primary tumor type.

MANAGEMENT PLAN

- "Our initial approach involves using corticosteroids to reduce the swelling and edema in your brain and prescribing antiepileptic drugs to control seizures if necessary."
- "If further treatment is required, options may include whole-brain radiation therapy, surgical resection in cases of solitary metastasis, or stereotactic radiosurgery."
- "Depending on the primary tumor type, we might also consider treatments like chemotherapy, targeted therapy, or immunotherapy."

- **Management in the community:** "Typically, management of brain metastases is coordinated and overseen by a specialist team in a hospital setting rather than in the community."

COMPLICATIONS OF TREATMENT

- **MOA of therapy**: Corticosteroids reduce inflammation and edema; antiepileptics stabilize neuronal membranes; chemotherapy targets rapidly dividing cancer cells.

- **Basic Overview of Surgical Therapies:** Surgical resection can be considered for single, accessible lesions; stereotactic radiosurgery delivers high-dose radiation to the tumor, minimizing exposure to the surrounding brain.

- **Complications of Medication and Surgical Therapy:** Side effects of corticosteroids, postoperative complications, radiation necrosis, chemotherapy toxicity.

- **Key Principles Before Discharge:** Ensure clear understanding of prognosis, plan for ongoing treatment and palliative care as appropriate, arrangements for social and psychological support.

COMPLICATIONS OF TREATMENT

- "Corticosteroids work by reducing inflammation and edema in your brain."
- "Antiepileptic drugs stabilize neuronal membranes and help control seizures."
- "Chemotherapy targets rapidly dividing cancer cells, while specific targeted therapies aim to counteract specific mutations in the primary tumor."

- "Surgical resection involves removing accessible lesions in the brain, primarily considering cases with a solitary metastasis."
- "Stereotactic radiosurgery delivers high-dose radiation specifically to the tumor, minimizing exposure to surrounding healthy brain tissue."

COMPLICATIONS OF TREATMENT

- "Some potential complications related to the medications we prescribe, such as corticosteroids, include side effects like..."
- "In surgical cases, there may be postoperative complications to consider."
- "Additionally, radiation therapy can sometimes lead to radiation necrosis, and chemotherapy might have associated toxicities."

- "As we progress with your treatment, it's crucial to ensure you have a clear understanding of your prognosis and ongoing treatment plans."
- "We will also discuss and make arrangements for any necessary palliative care and additional social or psychological support."

FOLLOW UP

- 2-week wait referral
- Accurate contact details
- Get back in contact if you haven't heard back
- Regular follow-up with imaging to assess treatment response and identify new lesions.

FOLLOW UP

- "After the initial treatment, regular follow-up visits will be scheduled to monitor the response to treatment and detect any potential new lesions."
- "This follow-up usually involves periodic imaging studies."

SEVERITY SYSTEMS

There isn't a UK-specific system, but the Recursive Partitioning Analysis (RPA) classification is widely used to prognosticate brain metastases.

NEVER MISS

- Never ignore new onset seizures or rapidly progressive neurological symptoms in an adult.
- Always consider brain metastases in a patient with known malignancy presenting with neurological symptoms.
- Ensure appropriate symptomatic treatment (steroids, antiepileptics).
- Always consider the need for palliative care and psychological support.
- Monitor for complications of treatment.

TOP 1% QUESTIONS

- "What is the role of 'liquid biopsy' in diagnosing brain metastases?"
- "Discuss the importance of identifying the primary malignancy in managing brain metastases."
- "What factors influence the choice between whole-brain radiotherapy and stereotactic radiosurgery?"
- "What is the role of targeted therapy and immunotherapy in managing brain metastases?"
- "Discuss the limitations of the RPA classification."

KEY LEARNING POINTS

- TO BE DONE TOGETHER

DATA

OSCE

03

MANAGEMENT

- What went well?
- What went poorly?
- What will you do next time?

OSCE

02

LET'S DISCUSS

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03

WHY DON'T YOU TRY?

- Test your history taking skills?
- Try examination/investigation/dx formulation?
- Try a Mock exam?

QUESTIONS?


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BELL'S PALSY

HISTORY X MANAGEMENT

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TOPIC - HISTORY TAKING

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PROMPT

A 35-year-old female presents with a sudden onset of facial weakness on the right side of her face, including drooping of the eyelid, difficulty closing the eye, and decreased ability to smile. The symptoms started 24 hours prior to her arrival at the clinic.

OSCE

02

LET'S DISCUSS

INTRODUCTION AND RAPPORT BUILDING

- Confirm patient's identity and consent
- Assess the onset, duration, and progression of symptoms
- Explore the patient's understanding of their condition

OBTAINS A THOROUGH HISTORY OF THE PATIENT'S PRESENTING SYMPTOMS

- Facial weakness or droop on one side
- Pain around the jaw or behind the ear on the affected side
- Increased sensitivity to sound in one ear
- Tearing or drooling

- Ask about the onset of facial paralysis: sudden or gradual?
- Ask about any associated symptoms such as ear pain, hyperacusis, or loss of taste.
- Ask about any recent viral illnesses, particularly herpes simplex or varicella-zoster.
- Ask about any history of trauma or surgery to the affected side of the face.
- Ask about any previous episodes of facial paralysis.

OBTAINS A THOROUGH HISTORY OF THE PATIENT'S PRESENTING SYMPTOMS

- ""Could you please tell me if the facial paralysis started suddenly or did it develop gradually?"
- "Have you experienced any ear pain, increased sensitivity to sounds, or a change in your sense of taste along with the facial weakness?"
- "Have you had any recent viral illnesses, such as cold sores or shingles?"
- "Is there any history of trauma or surgery on the affected side of your face?"
- "Have you ever had a similar episode of facial paralysis before?"

FURTHER EXPLORATION...

- Ask the patient to describe the extent of facial weakness and any associated changes in facial expression.
- Ask the patient if they are experiencing any difficulty closing the eye on the affected side.
- Ask if the patient is experiencing any pain or discomfort on the affected side of the face.

- Determine if the patient has a history of similar episodes
- Assess the patient's current level of pain and discomfort
- Evaluate the impact of the condition on the patient's daily activities and quality of life

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OBTAINS A THOROUGH HISTORY OF THE PATIENT'S PRESENTING SYMPTOMS

- "Can you describe how your facial weakness affects your expressions and movements?"
- "Do you have difficulty closing your eye on the affected side?"
- "Are you experiencing any pain or discomfort on the affected side of your face?"

MORE DETAILS + COLLATERAL

- Ask about any previous treatments for Bell's palsy, including any medications or surgeries.
- Ask about any current or recent medications, particularly antivirals or corticosteroids.
- Ask about any medical conditions that could predispose to facial nerve palsy, such as diabetes, hypertension, or autoimmune disease.
- Obtain collateral history from family members or caregivers if available.

DETAILED HISTORY OF PC

- "Are you having difficulty swallowing or speaking?"
- "Have you experienced any severe headaches, neck pain, double vision, or numbness in other parts of your body?"

RED FLAGS/COMPLICATIONS

- **Red Flags**
  - Difficulty swallowing or speaking
  - Severe headache or neck pain
  - Double vision or other visual changes
  - Weakness or numbness in other parts of the body

- **Common Complications:**
  - Corneal ulceration or infection
  - Contracture of the facial muscles
  - Emotional or psychological distress

OTHER KEY PHRASES

- "Have you recently been ill or traveled to a place where you could have been exposed to infections?"
- "Do you consume alcohol or use recreational drugs?"
- "Could you please provide information about any medications you're taking, their dosage, and frequency? Also, let me know if you have any allergies to medications and the nature of the allergic reactions."
- "Do you have any family members with a history of facial nerve palsy or other neurological conditions?"

PAST MEDICAL HISTORY

- Diabetes
- Hypertension
- Autoimmune disease
- History of cancer
- Previous episodes of Bell's palsy
- Ask about any previous surgeries, particularly those involving the head or neck.

DIFFERENTIAL DIAGNOSIS

- Stroke
- Guillain-Barre syndrome
- Lyme disease
- Ramsay Hunt syndrome

DIFFERENTIAL DIAGNOSIS

- Stroke:
  - "Have you experienced any sudden weakness or numbness on one side of your body, including your arms, legs, or face?"
  - "Did you experience any sudden difficulty with speech, understanding others, or confusion?"
  - "Have you had any sudden episodes of dizziness, loss of balance, or difficulty walking?"
  - "Have you experienced any sudden severe headache without a known cause?"

DIFFERENTIAL DIAGNOSIS

- Ramsay Hunt Syndrome:
  - "Have you noticed any rash or blisters around your ear or on the side of your face?"
  - "Have you had any severe ear pain or ringing in the ears recently?"
  - "Have you had a recent outbreak of herpes zoster (shingles) or chickenpox?"
- Lyme Disease:
  - "Have you traveled to or spent time in wooded areas or places known for ticks recently?"
  - "Have you found any ticks attached to your skin or experienced a tick bite?"
  - "Did you notice a bullseye-shaped rash (erythema migrans) at any point?"
  - "Have you experienced flu-like symptoms, joint pain, or swelling?"

DIFFERENTIAL DIAGNOSIS

- Sarcoidosis:
  - "Have you experienced any persistent cough, shortness of breath, or chest pain?"
  - "Have you noticed any swollen or painful joints, or developed any rashes or skin lesions?"
  - "Have you had any changes in your vision or eye pain?"
  - "Have you experienced persistent fatigue, fever, or unexplained weight loss?"

EXAMINATION

- **Examination Findings:**
  - Vital signs including weight, airway, breathing, and cardiovascular findings.
  - Abdominal findings, including signs of hepatosplenomegaly or lymphadenopathy.
  - Neurological findings, including assessment of cranial nerves and muscle tone, strength, sensation, coordination, reflexes.
  - Examination of the face for symmetry of the facial muscles, including the forehead, eyelids, cheeks, and mouth.
  - Mental status: Assessing the patient's level of consciousness, orientation, memory, and speech helps identify cognitive dysfunction that could be indicative of a stroke or other central nervous system disorders.
  - Cranial nerves: Examining all 12 cranial nerves is essential to localize the lesion and determine the extent of the involvement. In this case, the left facial nerve (CN VII) is affected, while the right side and other cranial nerves are normal. This finding is consistent with Bell's palsy and helps exclude conditions like stroke, which might involve other cranial nerves or cause additional deficits.
  - Motor function: A thorough assessment of muscle strength, tone, and bulk helps identify any motor deficits that might suggest an alternative diagnosis, such as stroke or other neurological disorders.

KEY PHRASES

- "I'm going to test your cranial nerves now. Can you please follow my finger with your eyes without moving your head?"
- "Please smile, frown, and raise your eyebrows."
- "Can you puff out your cheeks and purse your lips?"
- "Please shrug your shoulders and turn your head against my hand."
- "Can you tell me if you feel this light touch on both sides of your face?"
- "Please hold your arms out in front of you and close your eyes. Let me know if you feel me moving your fingers up or down."
- "I'd like you to stick out your tongue and move it from left to right"
- "Now, I'd like you to touch your nose with your index finger and then touch my finger, which I'll be moving."
- "Please walk across the room and back while I observe your gait and balance."

EXAMINATION

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INVESTIGATION

- Blood tests for glucose, electrolytes, and complete blood count.
- Swab for herpes simplex virus or varicella-zoster virus.
- CT Brain: to rule out an acute stroke
- MRI Brain: To rule out structural lesions, such as a tumor or stroke, which could cause facial weakness.
- Blood tests: To assess for signs of inflammation, infection, or autoimmune processes that might suggest alternative diagnoses like Lyme disease or sarcoidosis. Tests may include FBC, ESR, CRP, and Lyme disease serology.
- Lumbar puncture: In cases where meningitis or other central nervous system infections are suspected.
- Electromyography (EMG): To assess the degree of nerve damage and help differentiate between Bell's palsy and other causes of facial paralysis..

DIFFERENTIAL DIAGNOSES

- **Stroke**:
  - The CT scan shows no acute ischemic changes or hemorrhage, making a stroke unlikely. Additionally, the neurological examination revealed isolated left facial nerve involvement without any other deficits typically seen in stroke, such as motor or sensory deficits on one side of the body or speech difficulties.
- **Guillain-Barre syndrome:**
  - This condition typically presents as an ascending, symmetrical muscle weakness with decreased or absent deep tendon reflexes. In this case, the neurological examination revealed no motor or sensory deficits, aside from the isolated facial nerve involvement, making Guillain-Barre syndrome unlikely.
- **Lyme disease:**
  - The patient has not reported any recent travel to wooded areas, tick bites, or the presence of a characteristic erythema migrans rash. Additionally, the neurological examination and CT scan findings do not suggest any other neurological involvement that might be indicative of Lyme disease, such as meningitis or encephalitis.

DATA

DIFFERENTIAL DIAGNOSES

- **Ramsay Hunt syndrome:**
  - This condition is caused by the reactivation of the varicella-zoster virus and typically presents with facial nerve palsy, ear pain, and a vesicular rash in the ear or face. The patient has not reported any rash or severe ear pain, and the CT scan does not show any facial nerve enhancement, which would be expected in Ramsay Hunt syndrome.
- **Sarcoidosis:**
  - Sarcoidosis is a systemic disease characterized by non-caseating granulomas, which can involve multiple organs, including the nervous system. The patient has not reported any symptoms suggestive of sarcoidosis, such as cough, shortness of breath, skin lesions, or joint pain. Additionally, the CT scan does not show any abnormalities consistent with sarcoidosis, such as facial nerve enhancement or masses in the cerebellopontine angle.

- Given the above findings and the exclusion of other potential causes, a diagnosis of Bell's palsy is most likely in this case.

DATA

MANAGEMENT PLAN

- First line: Prescribe oral corticosteroids to reduce inflammation and improve symptoms
- Second line: Refer to physical therapy for facial exercises and nerve stimulation
- Third line: Consider antiviral medications if a viral etiology is suspected

- Management in the Community:
  - Advise the patient to maintain good hygiene to prevent further infection
  - Encourage the patient to perform facial exercises as directed by their physical therapist
  - Provide the patient with pain relief options, such as over-the-counter pain medications or hot/cold compresses
  - Provide the patient with information on counseling or support groups if needed

MANAGEMENT PLAN

- "Your health is our primary concern, and we have several ways to manage this condition. The first step is to abstain from alcohol, maintain good nutrition, and provide supportive care. If necessary, medications like corticosteroids, pentoxifylline, or N-acetylcysteine may be used. In severe cases, a liver transplant might be considered."

Management in the community: "Once you're home, it's important to continue to abstain from alcohol and ensure good nutrition. Regular check-ups with your primary care physician or specialist will also be crucial."

COMPLICATIONS OF TREATMENT

- **Complications of Medication and Surgical Therapy:**
  - Gastrointestinal side effects from corticosteroids
  - Increased risk of infections while taking immunosuppressive medications
  - Neurological side effects from antiviral medications
- **Key Principles to Discharge**
  - Explain the condition, reassure the patient that recovery is likely, advise on eye care, and prescribe medication.

FOLLOW UP

- Schedule a follow-up appointment with the patient's primary care provider in 1-2 weeks to monitor symptoms and adjust treatment as needed
- Schedule a follow-up appointment with the patient's physical therapist in 4-6 weeks to assess the patient's progress and modify the therapy plan as necessary
- Monitor the patient's blood glucose levels if they have a history of diabetes

NEVER MISS

- Start corticosteroids within 72 hours of onset
- ensure patients understand importance of eye care
- ensure patient's understanding of prognosis
- rule out stroke
- maintain regular follow-ups for at least 6 months.

TOP 1% QUESTIONS

- Discuss the contraindications for the use of corticosteroids in treating Bell's palsy.
- How can you differentiate between Bell's palsy and a stroke clinically?
- Discuss the use of antiviral therapy in the management of Bell's palsy.
- How can Lyme disease lead to facial palsy and how would management change?
- Discuss the role and effectiveness of acupuncture and physical therapy in the treatment of Bell's palsy

KEY LEARNING POINTS

- TO BE DONE TOGETHER

DATA

OSCE

03

MANAGEMENT

- What went well?
- What went poorly?
- What will you do next time?

OSCE

02

LET'S DISCUSS

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03

WHY DON'T YOU TRY?

- Test your history taking skills?
- Try examination/investigation/dx formulation?
- Try a Mock exam?

QUESTIONS?


MDT

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BRAIN ABSCESS

HISTORY X MANAGEMENT

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TOPIC - HISTORY TAKING

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PATIENT

MARKER

PLEASE REFER TO YOUR SCRIPTS

OSCE

01

PROMPT

A 35-year-old male presents to the emergency department with a one-week history of worsening headache, fever, and neck pain

OSCE

02

LET'S DISCUSS

INTRODUCTION AND RAPPORT BUILDING

- Confirm patient's identity and consent
- Assess the onset, duration, and progression of symptoms
- Explore the patient's understanding of their condition

OBTAINS A THOROUGH HISTORY OF THE PATIENT'S PRESENTING SYMPTOMS

- Onset of symptoms: When did you first notice these symptoms?
- Nature of symptoms: Are they continuous or intermittent? Have they been getting worse?

- Symptoms include headache, fever, nausea, vomiting, seizures, and focal neurologic signs such as hemiparesis or aphasia depending on the abscess location.

OBTAINS A THOROUGH HISTORY OF THE PATIENT'S PRESENTING SYMPTOMS

- "Thank you for coming in today. To better understand your situation, I'd like to ask you about the onset, duration, and progression of your symptoms. Could you please tell me when your symptoms first started and how they have been progressing?"

- "I'm here to listen to your concerns and explore your symptoms in detail. Some common symptoms include headache, fever, nausea, vomiting, seizures, and focal neurologic signs like weakness on one side of the body or difficulty speaking. Have you been experiencing any of these symptoms?"

FURTHER EXPLORATION...

- Has the patient had similar symptoms before?
- Any treatments already tried?
- Any recent dental procedures or sinusitis that could have led to abscess?

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OBTAINS A THOROUGH HISTORY OF THE PATIENT'S PRESENTING SYMPTOMS

- "I'd like to understand your medical history and any treatments you may have tried before. Have you had similar symptoms in the past? Have you received any treatment for them? Additionally, have you recently had any dental procedures or sinusitis that could potentially be related to the development of an abscess?"

RED FLAGS/COMPLICATIONS

- **Red Flags**
  - Sudden worsening of symptoms, altered level of consciousness, severe headache, persistent fever.
- **Common Complications:**
  - Brain herniation, seizures, long-term neurological damage, meningitis, ventriculitis.

- **RISK FACTORS:**
  - Conditions that predispose to bacteremia such as intravenous drug use, heart disease, poor dental hygiene.

OTHER KEY PHRASES

- "While we are exploring your symptoms, it's important to be aware of any red flag symptoms that require immediate attention. These include sudden worsening of symptoms, any changes in your level of consciousness, severe headache, or persistent fever. If you experience any of these, please let me know right away."

- "It's important to be aware of potential complications that can arise from a brain abscess. These may include brain herniation, seizures, long-term neurological damage, meningitis, or ventriculitis. Rest assured, we will closely monitor your condition to minimize the risk of complications."

- "As we proceed with the management of your condition, it's crucial to be aware of potential complications that can arise. These include bleeding, damage to surrounding brain tissue, and the possibility of incomplete removal of the abscess during aspiration or excision. Our goal is to minimize these risks and ensure the best possible outcome for you."

PAST MEDICAL HISTORY

- Any history of immunocompromise, heart disease, or previous bacterial infections.
- Previous neurosurgery?

DRUG HISTORY

- Ongoing medications, any history of drug allergies.

FAMILY HISTORY

- Not particularly relevant for brain abscess.

SOCIAL HISTORY:

- Living conditions, alcohol or drug abuse, employment, travel history.

PAST MEDICAL HISTORY

- "To better understand your overall health, it would be helpful to know if you have a history of immunocompromise, heart disease, or previous bacterial infections. These factors can provide valuable insights into your current condition."

- "It's important for us to be aware of any medications you are currently taking or if you have any history of drug allergies. This helps us ensure the safety and effectiveness of any treatments we consider."

- "To gain a comprehensive understanding of your situation, I'd like to inquire about your living conditions, any history of alcohol or drug abuse, employment status, and recent travel history. These details can provide valuable insights into your overall health and potential risk factors."

IDEAS, CONCERNS AND EXPECTATIONS

- ICE
  - "I'd like to take a moment to understand your perspective on your illness. It's important for me to know your ideas, concerns, and expectations regarding your condition and this consultation. Please feel free to express any fears, worries, or questions you may have. We're here to address them together."

EXAMINATION

- **Examination Findings:**
  - **Vital Signs:** Look for fever.
  - **Neurological Findings:** Focal neurological signs, altered mental state, signs of raised intracranial pressure.
  - **Systemic Examination:** Look for sources of infection that may have spread to the brain.

EXAMINATION

- "Now, I'd like to proceed with a thorough examination. First, I'll check your vital signs, including your temperature, as fever can be an indicator of infection."
- "Next, I'll conduct a neurological examination to assess for any focal neurological signs or changes in your mental state that may be associated with a brain abscess."
- "Additionally, I'll perform a systemic examination to identify any potential sources of infection that could have spread to the brain."

DIFFERENTIAL DIAGNOSIS

- Primary brain tumor, metastasis, cerebral abscess, granuloma.

DIFFERENTIAL DIAGNOSIS

- "In considering your symptoms, it's important to keep in mind various potential causes. These include primary brain tumors, metastasis, cerebral abscess, and granulomas. We will utilize the available information and diagnostic tests to narrow down the possibilities."

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INVESTIGATION

- **Imaging**: CT or MRI of the brain.
- **Laboratory Values:** Full blood count, C-reactive protein, blood cultures.
- **Other Clinically Relevant Tests:** Lumbar puncture is generally contraindicated due to risk of herniation, but may be considered under certain circumstances.

OSCE

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INVESTIGATION

- "Based on your symptoms and examination, we may need to conduct further investigations to confirm the diagnosis. This typically involves imaging, such as a CT or MRI of the brain, to visualize the abscess."
- "We may also request laboratory tests, including a full blood count, C-reactive protein, and blood cultures, to help us assess the severity and identify the causative organism, if possible."
- "While a lumbar puncture is generally contraindicated due to the risk of herniation, there may be certain circumstances where it could be considered. We will carefully evaluate the risks and benefits before making any decisions."

MANAGEMENT PLAN

- **First Line:** Empirical antibiotic therapy.
- **Second Line:** Stereotactic aspiration or excision if not responding to antibiotics or abscess is large.
- **Third Line:** Tailor antibiotic therapy based on culture results from abscess material.

- **COMMUNITY MANAGEMENT**
  - Usually managed in a hospital setting but long-term antibiotics can be managed in the community.

MANAGEMENT PLAN

- "Based on our findings, we will develop a management plan for your brain abscess. As a first-line approach, we will initiate empirical antibiotic therapy to target the infection."
- "If the abscess does not respond to antibiotics or if it is large in size, a second-line option, such as stereotactic aspiration or excision, may be necessary."
- "Once we receive culture results from the abscess material, we can tailor the antibiotic therapy to specifically target the identified bacteria. This third-line approach helps optimize the effectiveness of the treatment."

- "Typically, the management of a brain abscess requires hospitalization to closely monitor your condition and provide the necessary treatments. However, in certain cases where long-term antibiotic therapy is prescribed, it can be managed in the community under the guidance of healthcare professionals. We will discuss the best approach based on your individual needs."

COMPLICATIONS OF TREATMENT

- **MOA of therapy**: Antibiotics work by killing or inhibiting the growth of bacteria
- **Basic Overview of Surgical Therapies:** Aspiration or excision of the abscess.
- **Complications of Medication and Surgical Therapy:** Side effects of antibiotics, postoperative complications
- **Key Principles Before Discharge:** Arranging follow-up appointments and ensuring understanding of long-term antibiotic therapy.

COMPLICATIONS OF TREATMENT

- "The antibiotics prescribed for a brain abscess work by either killing the bacteria causing the infection or inhibiting their growth. This helps to eliminate the source of the abscess and prevent its further progression."
- "Surgical therapies for a brain abscess involve either aspiration or excision of the abscess. Aspiration involves using a needle to drain the abscess, while excision involves removing the abscess through surgery. The choice of procedure will depend on various factors and will be discussed with you in detail if it becomes necessary."

COMPLICATIONS OF TREATMENT

- "Before you are discharged, there are a few key principles we need to address. Firstly, we will arrange follow-up appointments to monitor your progress and ensure that the abscess is resolving as expected."
- "Additionally, it is important for you to fully understand and adhere to the long-term antibiotic therapy that may be required. We will provide detailed instructions and answer any questions you may have to ensure your comfort and confidence in continuing the treatment."
- "As with any medical treatment, both medication and surgical therapy for a brain abscess carry potential risks and complications. Common complications associated with antibiotic therapy include side effects such as gastrointestinal upset or allergic reactions. In the case of surgical therapy, there may be postoperative complications like bleeding or damage to surrounding brain tissue. Rest assured, we will closely monitor you to minimize these risks."

FOLLOW UP

- Referral to neurologist/neurosurgery
- Regular follow-ups with repeat imaging and clinical assessment.

FOLLOW UP

- "After your initial treatment, it is important to have regular follow-up appointments to monitor your progress. This will involve repeat imaging, such as CT or MRI scans, and clinical assessments to ensure the resolution of the abscess and to detect any potential complications. We will schedule these appointments accordingly."

SEVERITY SYSTEMS

No specific UK-based system but assessment of GCS and focal neurological signs can provide a guide to severity.

NEVER MISS

- Always consider a brain abscess in a patient with persistent headache and fever.
- Brain abscess is a medical emergency and needs urgent management.
- Source control is a key part of management.
- Long-term antibiotic therapy is usually necessary.
- Follow-up is critical to ensure resolution and monitor for complications.

TOP 1% QUESTIONS

- "What is the role of anaerobic bacteria in brain abscesses?"
- "Discuss the role of adjunctive corticosteroids in brain abscesses."
- "What are the potential complications of aspiration or excision of a brain abscess?"
- "Discuss the limitations of empirical antibiotic therapy in brain abscesses."
- "What is the role of long-term follow-up in brain abscesses?"

SOFT SKILLS

- Demonstrating empathy and effective communication throughout the consultation.

KEY LEARNING POINTS

- TO BE DONE TOGETHER

DATA

OSCE

03

MANAGEMENT

- What went well?
- What went poorly?
- What will you do next time?

OSCE

02

LET'S DISCUSS

OSCE

03

WHY DON'T YOU TRY?

- Test your history taking skills?
- Try examination/investigation/dx formulation?
- Try a Mock exam?

QUESTIONS?


MDT

NEUROLOGY

CEREBRAL PALSY

OSCE 1.4

HISTORY X MANAGEMENT

OSCE

01

TOPIC - HISTORY TAKING

MEDIC

PATIENT

MARKER

PLEASE REFER TO YOUR SCRIPTS

OSCE

01

PROMPT

A 10-year-old child is brought to the neurology clinic by their parent. The parent expresses concern about the child's worsening muscle stiffness, difficulty in walking, and frequent episodes of involuntary movements.

OSCE

02

LET'S DISCUSS

INTRODUCTION AND RAPPORT BUILDING

- Introduces Self and Purpose: Introduction of the medical professional, confirms patient identity, explains the purpose of the conversation, and ensures patient comfort. [1 point]
- Obtains Consent: Asks for consent to proceed with the questions and possibly a physical examination later on. [1 point]
- Chief complaint and duration.

INTRODUCTION AND RAPPORT BUILDING

"Hello [patient's name], thank you for taking the time to meet with me today. I'd like to discuss your symptoms and health in detail to best understand how we can help. If you have any questions or concerns at any point, please feel free to stop me."

OBTAINS A THOROUGH HISTORY OF THE PATIENT'S PRESENTING SYMPTOMS

- Difficulty in moving or controlling limbs?
- Muscle stiffness or floppiness?
- Tremors or involuntary movements?
- Any issues with swallowing or speech?

OBTAINS A THOROUGH HISTORY OF THE PATIENT'S PRESENTING SYMPTOMS

- "Has your child had any difficulty moving or controlling their arms or legs?"
- "Have you noticed any stiffness in their muscles, or do they seem a bit limp?"
- "Any shaking or movements they can't control?"
- "Has your child had trouble swallowing or with their speech at all?"

FURTHER EXPLORATION...

- Age at which symptoms first noticed.
- Progression and change over time.
- Presence of seizures.
- Associated developmental delays.

COLLATERAL

- From parents/caregivers, teachers, or therapists about functional abilities, behavior, and any changes.

FURTHER EXPLORATION

- "At what age did you first notice these symptoms?"
- "Have you seen these symptoms getting worse or changing over time?"
- "Has your child ever had any seizures or fits?"
- "Have you noticed any delays in their development, like walking or talking?"=

COLLATERAL

- "Have any teachers, caregivers, or therapists shared concerns about your child's abilities or behavior?"

RED FLAGS/COMPLICATIONS

- **Red Flags**
  - Severe seizures, profound intellectual disability, rapid decline in abilities.

- **Common Complications:**
  - Contractures, hip dislocation, scoliosis, feeding difficulties, aspiration pneumonia.

- **Risk factors**
  - Premature birth, intrauterine infections, any complications during delivery, or birth asphyxia?

RED FLAGS...

- "Have the seizures been very severe? Any sudden and dramatic drops in their abilities?"

COMPLICATIONS

- "Has your child faced any challenges like joints getting stiff and bent (contractures), hip problems, curved spine, difficulty eating, or chest infections?"

RISK FACTORS

- "Was your child born earlier than expected? Were there any infections during pregnancy, complications at birth, or breathing troubles right after birth?"

PAST MEDICAL HISTORY

- Any history of seizures or other neurological conditions? Hospitalizations?

DRUG HISTORY

- Current medications? Known allergies and reactions.

FAMILY HISTORY

- Any family members diagnosed with neurological conditions or developmental delays?

Social History:

- Schooling, therapies received, social interactions, support systems in place.

OSCE

01

PAST MEDICAL HISTORY

Past Medical and Surgical History:

- "Has your child had seizures or any other brain-related conditions before? Any hospital stays?"

DH

- "Is your child currently on any medications? Do they have any allergies that you're aware of?"

FAMILY AND SOCIAL HISTORY:

- "Does anyone in your family have a similar condition or developmental challenges?"
- "How's school going for your child? Any special therapies they're receiving? How are their social interactions and what kind of support do you have at home?"

IDEAS, CONCERNS AND EXPECTATIONS

- ICE
  - "I'd like to take a moment to understand your perspective on your illness. It's important for me to know your ideas, concerns, and expectations regarding your condition and this consultation. Please feel free to express any fears, worries, or questions you may have. We're here to address them together."

EXAMINATION

- **Examination Findings: - <u>CHAPERONE</u>**
  - **Vital Signs:** Temperature, Heart rate, Respiratory rate, Oxygen saturation, Weight
  - **Airway:** Assess for difficulties, especially if patient has swallowing issues.
  - **Breathing:** Check for irregularities, especially post-seizure.
  - **Cardiovascular:** Regular rhythm, any murmurs.
  - **Respiratory:** Clear air entry, absence of wheezes or crackles.
  - **Abdominal:** Soft, non-tender.
  - **Neurological:**
    - Motor: Muscle tone (spasticity, dystonia), reflexes, strength, involuntary movements.
    - Sensory: Response to touch, pain, temperature.
    - Cranial nerves: Especially facial symmetry, eye movements, gag reflex.
  - **Peripheral Examination:** Joint contractures, limb length discrepancies.
  - **Psychiatric Findings & MMSE:** Cognitive delays, behavior, interaction.
  - **Risk Assessment:** Risk of self-harm, choking, mobility issues**.**

OSCE

01

EXAMINATION

- **"I'd like to conduct a few physical examinations to get a clearer picture. Is that alright?"**
  - "I'll start by checking their vital signs, such as temperature, heart rate, and breathing. It'll give us a general sense of their well-being."
  - "Let's check their throat and airway, especially since swallowing can sometimes be a challenge."
  - "Now, I'll listen to their breathing."
  - "Let's also listen to their heart and check its rhythm."
  - "I'll also assess their abdomen to make sure it's soft and comfortable."
  - "We'll now assess their motor skills, reflexes, and muscle tone. It will help us understand the degree of muscle control they have."
  - "I'll also test their response to touch and temperature. Is that okay?"
  - "I want to check for any tightness in the joints or difference in limb length."
  - "Lastly, we'll look at their cognitive skills and behavior to gauge their level of understanding and interaction."

DIFFERENTIAL DIAGNOSIS

- Muscular dystrophy: Progressive muscle weakness, but with normal intellect.
- Brain tumor: Symptoms typically progressive over a short time.
- Metabolic or mitochondrial disorders: Presence of other systemic symptoms.
- Neuromuscular junction disorders: Fluctuating symptoms that might improve after rest.

Reasons Incorrect:

1. History and progression.
2. Presence or absence of specific symptoms.
3. Investigation results, particularly imaging.

DIFFERENTIAL DIAGNOSIS

- "Just to let you know, we're considering a few conditions:
  - Muscular dystrophy.
  - Brain tumors.
  - Metabolic disorders.

But, based on their history, symptoms, and upcoming tests, we'll narrow this down."

OSCE

01

INVESTIGATION

- Bloods: CBC, metabolic panel (usually normal but helps rule out other causes).
- Swabs: Not typically used unless infection suspected.
- Imaging:
  - MRI or CT scan to assess brain abnormalities.
  - X-rays for skeletal abnormalities.
- Others: EEG if seizures present.

OSCE

01

INVESTIGATION

- "Based on the examination, I'd like to recommend a few tests:
- Some blood tests to check overall health.
- An MRI or CT scan to look at the brain structure.
- X-rays to check bones.
- And an EEG if seizures are a concern."

OSCE

01

MANAGEMENT PLAN

- **Immediate Management:** Address any acute issues like seizures.
- **First Line:** Physiotherapy, occupational therapy, and speech therapy.
- **Second Line:** Medications for spasticity or seizures.
- **Third Line:** Surgical options like orthopedic surgeries or neurosurgical interventions like selective dorsal rhizotomy**.**
- **Prevention:** Regular monitoring, early intervention services.
- **Lifestyle Changes:** Adaptive equipment, home modifications.
- **Management in the Community:** Special education, community support groups.

MANAGEMENT PLAN

- "First and foremost, we'll address any urgent concerns like seizures."
- "Physical therapy and speech therapy can help improve movement and communication skills."
- "Medications might help manage muscle stiffness or seizures."
- "In some cases, surgeries can be beneficial."
- "Regular monitoring and early interventions can prevent complications."
- "We might also discuss tools or home modifications to make daily activities easier."
- "In the community, special education and support groups can be invaluable."

KEY PRINCIPLES BEFORE DISCHARGE AND SAFETY NETTING (5 POINTS)

- Stable condition without any recent acute issues.
- Adequate support at home.
- Therapy and follow-up plans in place.
- Guardians understand the condition and management.
- Safety netting advice provided.

- **SAFETY NETTING: Return if:**
  - Increase in seizure frequency or intensity.
  - Rapid progression or worsening of symptoms.
  - Severe respiratory issues or swallowing difficulties.

KEY PRINCIPLES BEFORE DISCHARGE AND SAFETY NETTING (3 POINTS)

- "We want to ensure that:
- Your child is stable.
- You have the support you need at home.
- Follow-up and therapy plans are clear.
- You fully understand the condition and its management.
- And, I'll also give you guidance on when to seek immediate help."

- **Safety Netting:** "If you notice an increase in seizure activity, a rapid worsening of symptoms, or severe breathing or swallowing problems, please return or seek immediate medical help."

ADVICE TO GUARDIANS/RELATIVES

EXPLANATION TO PATIENTS/RELATIVES: "Cerebral palsy is a neurological condition affecting muscle movement and coordination. It's due to brain damage during pregnancy, at birth, or shortly after. While it's lifelong, with therapy and support, many individuals lead fulfilling lives."

Useful Resources: Local CP societies, online forums, CP-specific clinics

- **Advice to Guardians,**
  - Ensure regular therapies, monitor for complications, join support groups.

ADVICE TO GUARDIANS/RELATIVES

"Cerebral palsy affects muscle movement due to brain damage, usually occurring before, during, or just after birth. Although lifelong, with the right support, many lead fulfilling lives. There are medications and therapies that can help, each with its own benefits and risks. I suggest regular check-ups and connecting with local support groups. It's a journey, but you're not alone."

- "Make sure your child attends regular therapy sessions, keep an eye out for any complications, and consider connecting with support groups."

COMPLICATIONS OF TREATMENT

Complications of Medication:
Medications can have side effects like drowsiness. Surgery risks include infection, bleeding.

Mechanism of Action:
Antispasmodics (like baclofen) work on the spinal cord to reduce muscle tone. Antiepileptics (like carbamazepine) stabilize nerve activity.

Surgical Therapies:
Orthopedic surgeries to correct contractures or improve mobility. Neurosurgery to reduce spasticity

COMPLICATIONS OF TREATMENT

- "Some medications might have side effects, such as making your child feel drowsy. Surgical procedures carry risks like infection or bleeding."

FOLLOW UP

- Neurology every 6 months, orthopedics annually, therapies regularly.

SEVERITY SYSTEM

- Mild: Minor movement difficulties, no cognitive impairment.
- Moderate: Need for assistive devices, some cognitive challenges.
- Severe: Limited mobility, significant intellectual challenges.

FOLLOW UP

- "We'll arrange regular appointments with neurology and orthopedics. Your child will also continue with therapies to ensure their progress."

NEVER MISS

1. Accurate diagnosis with investigations.
2. Tailored management plan.
3. Address seizures promptly.
4. Ensure proper support systems in place.
5. Early intervention services.

TOP 1% QUESTIONS

1. Explain the pathophysiology of CP in relation to periventricular leukomalacia?
2. How does botulinum toxin aid in managing spasticity in CP?
3. Describe the role of selective dorsal rhizotomy in CP.
4. How does the Gross Motor Function Classification System (GMFCS) classify CP severity?
5. Which genes have been recently linked to CP?

SOFT SKILLS

- Demonstrating empathy and effective communication throughout the consultation.
- "Thank you for sharing all this information with me, it's been really helpful in understanding your situation. Do you have any questions or concerns about anything we've discussed today?"
- Closing the consultation: "Thank you for your time today. I know this can be a lot to take in, but it's important to remember that we're here to support you every step of the way. If you have any further questions or concerns, please don't hesitate to ask."

KEY LEARNING POINTS

- TO BE DONE TOGETHER

DATA

OSCE

03

MANAGEMENT

- What went well?
- What went poorly?
- What will you do next time?

OSCE

02

LET'S DISCUSS

OSCE

03

WHY DON'T YOU TRY?

- Test your history taking skills?
- Try examination/investigation/dx formulation?
- Try a Mock exam?

QUESTIONS?


MDT

NEUROLOGY

ENCEPHALITIS

HISTORY X MANAGEMENT

OSCE
01

TOPIC - HISTORY TAKING

MEDIC

PATIENT

MARKER

PLEASE REFER TO YOUR SCRIPTS

OSCE
01

PROMPT

Patient A, a 45-year-old male, presents to the neurology clinic with a complex medical history and concerning neurological symptoms.

OSCE
02

LET'S DISCUSS

INTRODUCTION AND RAPPORT BUILDING

- Introduce self and verify patient's identity.
- Obtain consent.
- Open-ended question about presenting complaint.

OSCE
01

INTRODUCTION AND RAPPORT BUILDING

1. Good morning, my name is Dr. [Your Name], and I'll be your physician today. May I kindly confirm your name and date of birth?"
2. "Before we proceed, I'd like to ask for your consent to discuss your medical history and perform an examination."
3. "Could you please start by telling me about the reason for your visit today? Is there anything specific that's been bothering you?"

OBTAINS A THOROUGH HISTORY OF THE PATIENT'S PRESENTING SYMPTOMS

- Duration of symptoms: Onset, progression, and duration of neurological and systemic symptoms.
- Presence of fever: Ask about fever/chills and if there's a temporal association with neurological symptoms.
- Headaches: Onset, type (throbbing, constant, sharp), location, intensity, and any associated features.

1. Temporal progression: Rapid onset vs. gradual worsening.
2. Associated symptoms: Nausea, vomiting, or any other associated systemic symptoms.
3. Prior similar episodes: Similar episodes in the past, outcomes, and treatments.

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01

OBTAINS A THOROUGH HISTORY OF THE PATIENT'S PRESENTING SYMPTOMS

- "Can you tell me when you first noticed these symptoms and how they have changed over time?"
- "Have you experienced any fever or chills recently? Were they related to when your neurological symptoms began?"
- "Have you had any headaches? If so, can you describe them? Where do they occur and how intense are they?"

1. "How quickly did these symptoms start? Have they been getting progressively worse?"
2. "Aside from the main symptoms, have you felt nauseous or vomited?"
3. "Have you ever had episodes like this in the past?"

FURTHER EXPLORATION...

- Altered consciousness: Drowsiness, confusion, or agitation.
- Seizures: Ask about the onset, type, frequency, and any post-ictal symptoms.
- Neurological deficits: Such as weakness, numbness, vision changes, and speech difficulties.
- Behavioral changes: Mood swings, aggression, or other personality changes.
- Neck stiffness or photophobia: Suggestive of meningeal irritation.

- COLLATERAL HISTORY:
  - Witnessed episodes: Any symptoms witnessed by relatives or friends.
  - Compliance to medication: If any prescribed before.
  - Impact on daily activities: How have symptoms affected the patient's ability to function?

FURTHER EXPLORATION

- "Have you noticed any changes in your level of alertness, like feeling drowsy, confused, or agitated?"
- "Have you experienced any seizures or convulsions? Can you describe them?"
- "Have there been any changes in your strength, sensation, vision, or speech?"
- "Has your behavior or mood changed recently?"
- "Do you have any neck stiffness or sensitivity to light?"

COLLATERAL

1. "Has anyone around you witnessed any of your symptoms?"
2. "Are you currently on any medication? Have you been taking them as prescribed?"
3. "How have these symptoms affected your daily activities?"

RED FLAGS/COMPLICATIONS

- **Red Flags**
  - Rapid neurological decline: Rapid decrease in consciousness or sudden onset of severe neurological deficits.
  - Uncontrolled seizures: Status epilepticus or recurrent seizures without regaining consciousness in between.
  - Focal neurological signs: Such as one-sided weakness or unequal pupil sizes.

- **Common Complications:**
  - Respiratory depression due to brainstem involvement.
  - Permanent neurological deficits: Cognitive impairments, motor deficits.
  - Secondary infections: If hospital-acquired, or due to prolonged immobility.

- **Risk factors**
  - Recent infections: Respiratory, gastrointestinal, or skin infections.
  - Travel history: Exposure to endemic areas for certain pathogens.
  - Animal bites: Especially from rabies-prone animals.
  - Immunosuppression: HIV, chemotherapy, or chronic steroid use.

RED FLAGS...

- "Have you noticed any sudden and severe changes in your neurological condition?"
- "Have your seizures been difficult to control?"
- "Have you noticed weakness on one side of your body or differences in your pupil size?"

RISK FACTORS

- "Have you had any infections recently, like respiratory or skin infections?"
- "Have you traveled to areas known for certain diseases recently?"
- "Have you been bitten by any animals lately?"
- "Are you on any medication or have conditions that might weaken your immune system?"

COMPLICATIONS

- Complications of encephalitis: "Be mindful of potential lasting neurological changes, mood changes, and physical difficulties due to prolonged immobility."

Encephalitis is a condition that occurs when there is inflammation in the brain. The inflammation can be caused by a virus, bacteria, or other microorganism. While some cases of encephalitis are mild and resolve on their own, others can be severe and lead to lasting complications.

One of the most significant complications of encephalitis is the potential for lasting neurological changes. These changes can affect a person's ability to think, speak, and move. In some cases, the changes can be permanent and lead to long-term disability.

Mood changes are another possible complication of encephalitis. Some people may experience depression, anxiety, or other emotional changes as a result of the condition. It is important to seek treatment for these symptoms as they can impact a person's overall quality of life.

Finally, prolonged immobility can also be a complication of encephalitis. This can occur if a person is hospitalized for an extended period or if they experience weakness or paralysis as a result of the inflammation. Physical therapy and rehabilitation can help improve mobility and prevent lasting difficulties.

PAST MEDICAL HISTORY

- Previous neurological conditions: Meningitis, previous encephalitis, or other CNS infections.
- Autoimmune diseases: Conditions like lupus which might predispose to autoimmune encephalitis.
- Vaccinations: Recent vaccinations or lack thereof.

DRUG HISTORY

- Medications: Current medications, especially those with CNS side effects.
- Allergies: Nature of allergic reactions to medications.
- Recent drug changes: Which might be related to the current presentation.

FAMILY HISTORY

- Neurological diseases: Especially if there might be a genetic predisposition.
- Autoimmune diseases: Conditions like lupus or multiple sclerosis.

Social History:

- Alcohol or substance use: Frequency, type, and amount.
- Occupation: Exposure to toxins or endemic pathogens.
- Living conditions: Overcrowded, sanitation, access to medical care.

PAST MEDICAL HISTORY

- "Have you ever had any neurological conditions like meningitis or encephalitis before?"
- "Do you have any autoimmune conditions?"
- "Can you tell me about your vaccination history?"

DH

- "Can you list the medications you're currently taking?"
- "Do you have any allergies, especially to medications?"
- "Have there been any recent changes to your medications?"

FAMILY AND SOCIAL HISTORY:

- "Do any family members have neurological diseases or autoimmune conditions?"
- "Do you drink alcohol or use any substances? How often?"
- "What's your occupation?"
- "Could you describe your living conditions, such as your home environment and access to medical care?"

IDEAS, CONCERNS AND EXPECTATIONS

- ICE
  - "I'd like to take a moment to understand your perspective on your illness. It's important for me to know your ideas, concerns, and expectations regarding your condition and this consultation. Please feel free to express any fears, worries, or questions you may have. We're here to address them together."

EXAMINATION

- **Examination Findings: - <u>CHAPERONE</u>**
  - Vital Signs: Blood pressure, heart rate, respiratory rate, oxygen saturation, temperature, weight.
  - Airway: Check for any obstructions, drooling, or stridor.
  - Breathing: Respiratory rate, depth, use of accessory muscles.
  - Cardiovascular: Heart rate, rhythm, murmurs, capillary refill time.
  - Respiratory: Breath sounds, any wheezing, crackles, or signs of respiratory distress.
  - Abdominal: Liver, spleen size, any tenderness or masses.
- **<u>Neurological:</u>**
  - Conscious level: AVPU scale or Glasgow Coma Scale.
  - Cranial Nerves: All 12 cranial nerves.
  - Motor function: Power, tone, reflexes.
  - Sensory function: Pain, temperature, touch, vibration, proprioception.
  - Coordination: Finger-to-nose test, heel-to-shin test.
  - Gait: Watch the patient walk, Romberg's test.
  - Meningeal signs: Neck stiffness, Kernig's and Brudzinski's signs.
  - Peripheral examination: Peripheral pulses, capillary refill, edema.

- **PSYCHIATRIC FINDINGS & MMSE:** Orientation, registration, attention & calculation, recall, language.

OSCE

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EXAMINATION

- **"I'd like to conduct a few physical examinations to get a clearer picture of your clinical condition in relation to a suspected diagnosis of encephalitis. Is that alright?"**
    - (Note: This section is more applicable for doctors in practice rather than patients. It's a set of instructions and things to be mindful of when physically examining a patient.)

When conducting physical examinations for a suspected diagnosis of encephalitis, it is important to be mindful of a few key things. First and foremost, it's important to be gentle and respectful with the patient, ensuring that they feel comfortable and at ease throughout the examination process.

Physicians should also be thorough in their examination, paying close attention to the patient's neurological and cognitive functions. This may involve testing their reflexes, assessing their muscle strength, and checking for any signs of confusion or disorientation.

In addition, it's important for physicians to be aware of any potential risk factors that may contribute to encephalitis, such as recent travel to an area with a high incidence of the disease or exposure to infected animals. By taking all of these factors into account, physicians can better assess the patient's clinical condition and provide an accurate diagnosis and treatment plan.

DIFFERENTIAL DIAGNOSIS

1. Meningitis: Involves the meninges, not the brain parenchyma.
2. Brain Abscess: Localized infection, not diffuse.
3. Stroke: Sudden onset, vascular, not inflammatory.
4. Autoimmune encephalopathy: Symptoms might be similar, but cause is autoimmune, not infectious.

OSCE
01

DIFFERENTIAL DIAGNOSIS

1. "Meningitis:
   - "Based on your symptoms and our evaluations, we'll explore various possible conditions. One of them is meningitis, which primarily involves the meninges rather than the brain parenchyma. We'll rule this in or out based on your test results."
   - "Thank you for your cooperation. We're considering different conditions that match your symptoms. One possibility is meningitis, which affects the meninges rather than the brain itself. We'll have more clarity once we review your test results."
2. Brain Abscess:
   - "Another condition we'll consider is a brain abscess. This is a localized infection, unlike the diffuse inflammation seen in encephalitis. We'll need to gather more information to confirm or rule out this possibility."
   - "We appreciate your patience. We're exploring various potential causes of your symptoms. One of them is a brain abscess, characterized by a localized infection, which differs from the more widespread inflammation of encephalitis. Further evaluation will help us reach a diagnosis."
3. Stroke:
   - "Stroke is another condition we're examining. Strokes typically have a sudden onset and are related to vascular issues rather than inflammatory processes. We'll continue our assessments to determine whether this is a possibility in your case."
   - "Your cooperation is invaluable. Stroke is one of the conditions we're considering. Strokes often have a sudden onset and are associated with vascular problems, not inflammatory ones. As we progress, we'll gain more insight into whether this is a relevant consideration."
4. Autoimmune encephalopathy:
   - "Lastly, we're exploring the possibility of autoimmune encephalopathy. While the symptoms might seem similar, the cause here is autoimmune, not infectious. More tests will help us confirm or rule out this diagnosis."
   - "Thank you for your understanding. We're keeping an open mind about potential diagnoses. One of them is autoimmune encephalopathy, a condition where symptoms may resemble those of infectious encephalitis, but the cause is autoimmune rather than infection. Our forthcoming tests will provide more information."

OSCE
01

INVESTIGATION

1. Bloods:
    a. FBC: White cell count, especially lymphocytes.
    b. CRP, ESR: Inflammation markers.
    c. Electrolytes: Especially sodium (for SIADH).
2. Lumbar puncture: CSF for white cells, protein, glucose, PCR, cultures.
3. Imaging: MRI or CT brain to look for areas of inflammation or other abnormalities.
4. EEG: Especially if seizures are a symptom.

OSCE

01

INVESTIGATION

1. Lumbar puncture:
   - "We may recommend a lumbar puncture to obtain cerebrospinal fluid (CSF). This will help us assess white cell count, protein, glucose, PCR, and cultures. We understand that this procedure might raise questions or concerns, so please feel free to discuss it with us."
   - "A lumbar puncture may be necessary to obtain cerebrospinal fluid (CSF) for further evaluation. This will allow us to assess white cell count, protein levels, glucose, perform PCR tests, and culture studies. If you have any questions or would like to learn more about this procedure, please don't hesitate to ask."
2. Imaging:
   - "We'll also consider imaging studies such as an MRI or CT scan of your brain. These tests help us look for areas of inflammation or any other abnormalities. If you're curious about what these tests involve or have questions, please let us know."
   - "Next, we'll discuss imaging studies. We're considering either an MRI or CT scan of your brain to look for areas of inflammation or other abnormalities. If you'd like to know more about these tests or have questions, please share them with us."
3. EEG:
   - "Electroencephalography (EEG) may be part of our investigations, especially if you've experienced seizures. This test helps us monitor brain electrical activity. If you're interested in what the EEG entails or have questions, please don't hesitate to ask."
   - "Your evaluation may also include electroencephalography (EEG), particularly if you've had seizures. This test helps us monitor your brain's electrical activity. If you're curious about the EEG procedure or have questions, please inform us.

MANAGEMENT PLAN

- Immediate management: Airway, breathing, circulation. Antipyretics for fever.
- First line: IV Aciclovir if herpes simplex suspected. Broad-spectrum antibiotics until bacterial causes ruled out.
- Second line: Further antivirals or antibiotics based on identified pathogen.
- Third line: Steroids or immunoglobulins for immune-mediated encephalitis.

- PREVENTION & LIFESTYLE CHANGES:
  - Vaccinations: For preventable causes, such as Japanese encephalitis.
  - Avoidance: Mosquito nets and repellents in areas with mosquito-borne encephalitis.
  - Healthy lifestyle: Adequate sleep, balanced diet, regular exercise to boost overall health.

- MANAGEMENT IN THE COMMUNITY:
  - Rehabilitation: Physiotherapy, occupational therapy.
  - Regular check-ups: With GP or neurologist.
  - Medication adherence: Ensure patients are taking any prescribed medications.

OSCE

01

MANAGEMENT PLAN

- Immediate management:
  - "Our first step is to ensure your immediate well-being. This includes addressing your airway, breathing, and circulation. If you have a fever, we'll also provide antipyretics to lower your temperature. These measures are crucial for your safety and comfort."
  - "Thank you for your patience. Initially, our focus is on your immediate well-being. We'll address your airway, breathing, and circulation to ensure your safety. If you're experiencing fever or chills, we'll provide antipyretics to reduce your temperature. These steps are essential for your comfort and health."
- First line: IV Aciclovir if herpes simplex suspected. Broad-spectrum antibiotics until bacterial causes ruled out:
  - "Based on our assessments, we may initiate treatment with intravenous Aciclovir if we suspect herpes simplex virus involvement. Simultaneously, we'll administer broad-spectrum antibiotics until we can rule out bacterial causes. Our aim is to provide targeted therapy once we have more information."
  - "Your well-being is our top priority. Depending on the results of our assessments, we may begin treatment with IV Aciclovir if we suspect herpes simplex virus as the cause. Alongside this, we'll start broad-spectrum antibiotics until we can confidently exclude bacterial causes. Our ultimate goal is to offer precise and effective treatment."
- Second line: Further antivirals or antibiotics based on identified pathogen:
  - "Once we pinpoint the specific pathogen responsible for your condition, we'll tailor your treatment with further antiviral medications or antibiotics, as needed. This personalized approach ensures we're addressing the root cause effectively."
  - "Your health is our primary concern. As we identify the precise pathogen responsible for your condition, we'll customize your treatment with additional antiviral medications or antibiotics, as required. This personalized strategy is designed to target the specific cause of your symptoms."
- Third line: Steroids or immunoglobulins for immune-mediated encephalitis:
  - "In cases of immune-mediated encephalitis, we may consider third-line treatments such as steroids or immunoglobulins. These interventions aim to suppress the immune response contributing to your condition. Our goal is to alleviate your symptoms and promote recovery."
  - "We appreciate your patience. In situations where immune-mediated encephalitis is a concern, we might explore third-line treatment options like steroids or immunoglobulins. These interventions work to suppress the immune response contributing to your condition, with the aim of reducing your symptoms and supporting your recovery."

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PREVENTION/COMMUNITY

- "It's important to get vaccinated for preventable causes and use measures like mosquito nets in certain areas. Maintaining a healthy lifestyle can also help boost your overall health."
- **Management in the Community:**
  - "Post-treatment, rehabilitation might be beneficial. Regular check-ups are crucial, and please ensure you're taking any prescribed medications consistently."

KEY PRINCIPLES BEFORE DISCHARGE AND SAFETY NETTING (5 POINTS)

- Stable vitals: Ensure the patient is vitally stable for 24 hours.
- Clear plan: Written plan for medications, follow-up.
- Support system: Ensure the patient has a support system at home or necessary modifications made.

- **Explanation to Patients/Relatives**:
  - What is encephalitis: An inflammation of the brain tissue.
  - Causes: Infection (viral being the most common), immune reactions.
  - Symptoms: Altered consciousness, seizures, fever, other neurological symptoms.
  - Treatment: Medications, supportive care, potential rehabilitation.
  - Prognosis: Variable. Some recover fully, others may have residual deficits.

- **SAFETY NETTING: Return if:**
  - Worsening symptoms: Advise the patient to seek immediate medical attention if symptoms worsen.
  - New symptoms: Especially seizures, severe headache, or any new neurological deficits.
  - Follow-up: Ensure they have clear follow-up plans with their GP or neurologist.

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KEY PRINCIPLES BEFORE DISCHARGE AND SAFETY NETTING (3 POINTS)

- Clear plan: Written plan for medications, follow-up:
  - "Before you leave, we'll provide you with a clear and comprehensive written plan. This will include details about your medications, their dosages, and schedules. Additionally, we'll outline your follow-up appointments and what to expect in the upcoming days, ensuring you're well-informed about your journey to recovery."
  - "Your smooth transition to continued care is a top priority. To facilitate this, we'll furnish you with a well-documented plan. This plan will specify your medications, dosages, and timing. It will also detail your follow-up appointments and what to anticipate in the days ahead. Our aim is to ensure that you have a clear understanding of your path to recovery."
- Support system: Ensure the patient has a support system at home or necessary modifications made:
  - "Recognizing the importance of a support system, we will discuss your situation with your family or guardians and ensure that you have the necessary support at home. If any home modifications or accommodations are needed to ensure your well-being, we'll address them thoroughly."
  - "We understand that a strong support system contributes to your recovery. We'll engage in a conversation with your family or guardians to guarantee you have the support you need at home. If any home modifications or accommodations are required to enhance your well-being, we'll ensure they are thoroughly considered and implemented."

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SAFETYNETTING

- Worsening symptoms:
  - "In the event that you experience any worsening of your symptoms or any new concerning developments, we urge you to seek immediate medical attention. Your health is our priority, and addressing changes promptly is crucial to ensuring your well-being."
  - "Your well-being is paramount to us. If you notice any deterioration in your symptoms or any new concerning developments, we strongly encourage you to seek prompt medical attention. Addressing changes swiftly is essential for safeguarding your health."
- New symptoms: Especially seizures, severe headache, or any new neurological deficits:
  - "Specifically, if you encounter new symptoms such as seizures, severe headaches, or any fresh neurological deficits, it's imperative to seek immediate medical help. Your health and safety are our primary concerns, and addressing these symptoms promptly is of utmost importance."
  - "Thank you for your vigilance regarding your health. If you observe new symptoms, particularly seizures, severe headaches, or any recent neurological deficits, it's critical to promptly access medical assistance. This swift response is essential to ensuring your continued well-being."
- Follow-up: Ensure they have clear follow-up plans with their GP or neurologist:
  - "To sustain your progress and monitor your recovery, it's vital to have a well-structured follow-up plan in place. We will ensure that you have clear, comprehensive arrangements for follow-up care with your general practitioner or neurologist."
  - "Your recovery journey extends beyond the hospital, and follow-up care is integral. We will work diligently to ensure that you have well-defined, comprehensive follow-up arrangements with your general practitioner or neurologist.

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EXPLANATION

- What is encephalitis:
  - "Encephalitis is a condition characterized by inflammation of the brain tissue. This inflammation can occur due to various factors, with viral infections being the most common cause. It's essential to understand this condition as it plays a crucial role in your diagnosis and treatment."
  - "Thank you for your attention. Encephalitis is a medical term that refers to inflammation of the brain tissue. This inflammation can result from various factors, but the most prevalent cause is viral infections. Understanding this condition is vital as it forms the basis of your diagnosis and treatment."
- Causes: Infection (viral being the most common), immune reactions:
  - "Encephalitis can stem from different causes, including viral infections, with viruses such as herpes simplex being a common culprit. Additionally, immune reactions of the body can also lead to encephalitis. By understanding these potential causes, you'll be better equipped to navigate your treatment journey."
  - "Your curiosity is appreciated. Encephalitis can arise from various causes, with viral infections, particularly herpes simplex, being a frequent instigator. Furthermore, immune reactions of the body can also contribute to encephalitis. Familiarizing yourself with these potential causes will empower you to actively engage in your treatment process."

ADVICE TO GUARDIANS/RELATIVES

- **Advice to Guardians & Resources:**
  - Medication management: Ensure the patient takes their medications regularly.
  - Watch for complications: Seizures, mood changes, other new or worsening symptoms.
  - Support: Emotional and physical support, especially during the recovery phase.

USEFUL RESOURCES:

1. Encephalitis Society: Provides information, support, and advice.
2. NHS website: Detailed information on encephalitis.
3. Patient leaflets: On medications, procedures, and the disease itself.

ADVICE TO GUARDIANS/RELATIVES

- "Ensure the patient is taking their medications consistently. Monitor for potential complications and provide emotional and physical support."
    - "The Encephalitis Society and NHS website are great resources for more information. We also provide patient leaflets on medications and the disease."

COMPLICATIONS OF TREATMENT

Side Effects to be aware of:

1. Aciclovir: Kidney problems, gastrointestinal symptoms, rash.
2. Steroids: Immunosuppression, mood changes, weight gain.
3. Immunoglobulins: Allergic reactions, thromboembolic events.
4. Brain biopsy (if done): Risk of bleeding, infection.

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COMPLICATIONS OF TREATMENT

MOA OF TREATMENT

1. Aciclovir: It's a nucleoside analogue, stops viral DNA synthesis.
2. Steroids: Suppresses the immune system, reducing inflammation.
3. Immunoglobulins: Neutralizes antibodies in immune-mediated encephalitis.

OVERVIEW OF SURGICAL THERAPIES:

1. Brain biopsy: A piece of brain tissue is removed to determine the cause of encephalitis.

FOLLOW UP

- Regular respiratory reviews, spirometry annually.
  - 1 week post-discharge: Check vitals, neurological status, and medication adherence.
  - 1 month post-discharge: Reassess neurological status, consider tapering of medications.
  - 3 months and 6 months: Ensure recovery is progressing, address any complications.

SEVERITY SYSTEM

- Consciousness level: AVPU or GCS.
- Seizure frequency: Number of seizures in the past week.
- Functional status: Can they carry out daily activities? Use the Barthel Index.

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FOLLOW UP

NEVER MISS

1. Assess consciousness level immediately using AVPU or GCS.
2. Initiate first-line treatment promptly if herpes simplex encephalitis is suspected.
3. Always consider lumbar puncture for diagnostic purposes unless contraindicated.
4. Address and manage potential complications, especially seizures.
5. Ensure clear safety netting instructions provided to the patient and family.

TOP 1% QUESTIONS

1. How do the clinical features of encephalitis differ from those of meningitis?
2. Which type of encephalitis is linked to the NMDA receptor and can present with psychiatric symptoms?
3. How does the MRI of herpes simplex encephalitis typically look?
4. How do the CSF findings in viral encephalitis differ from bacterial meningitis?
5. Why might a patient with encephalitis develop hyponatremia?

SOFT SKILLS

- "Before we conclude, I want to make sure that all your concerns and questions have been addressed. Is there anything else you'd like to discuss?"
- Demonstrating empathy and effective communication throughout the consultation.
- "Thank you for sharing all this information with me, it's been really helpful in understanding your situation. Do you have any questions or concerns about anything we've discussed today?"
- Closing the consultation: "Thank you for your time today. I know this can be a lot to take in, but it's important to remember that we're here to support you every step of the way. If you have any further questions or concerns, please don't hesitate to ask."

KEY LEARNING POINTS

- TO BE DONE TOGETHER

DATA

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MANAGEMENT

- What went well?
- What went poorly?
- What will you do next time?

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LET'S DISCUSS

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WHY DON'T YOU TRY?

- Test your history taking skills?
- Try examination/investigation/dx formulation?
- Try a Mock exam?

QUESTIONS?


MDT