ED QUICK QUIZ

WHAT IS THE DIAGNOSIS?

BACKGROUND

A 47 year old man is brought to A&E by ambulance with a two day history of headache, rigors and confusion. Initially he was agitated and incoherent but over the course of the last 24 hours he has become increasingly somnolent. He had a tonic-clonic seizure today that prompted his wife to call an ambulance.

He is usually fit and well with no past medical history and is on no mediation. There have been no previous seizures.

Examination

The airway is patent and cardiovascular, respiratory and GI examinations are unremarkable. His pupils are equal and reactive and there are no external signs of head injury. He is uncooperative with the neurological examination, but he is moving both sides of his body in response to pain. His reflexes are generally brisk and there is bilateral ankle clonus. His neck is stiff.

Observations

Temperature 38.8, HR 110, BP 150/80, RR 20, SpO2 96% air, BM 6.3, GCS 10 (E 3 V 2 M 5).

QUESTIONS

1. What is your diagnosis?
2. How will you manage him?

ANSWERS & DISCUSSION

1. Encephalitis

The triad of **headache, fever** and **altered mental status** is indicative of encephalitis (infection/inflammation of the brain parenchyma). Other presenting features of encephalitis include focal neurology (movement disorders, speech disorders, focal weakness, cranial nerve deficits or exaggerated reflexes) and partial or generalised seizures. Neck stiffness, photophobia and positive Kernig's sign indicate meningeal involvement and the combination is called meningo-encephalitis. Meningitis alone, unless the patient is in extremis, doesn't cause the altered brain function seen in encephalitis. Make sure to ask about travel, contact with animals, insect bites and immunisation history. On examination look for cold sores, vesicles, stigmata of AIDS, track marks from IVDU, and parotitis (which may indicate mumps). The causes of encephalitis are varied:

Viral	Bacterial	Fungal/Protozoa
HSV 1 (most common)	TB	Cryptococcus
HSV 2 (in neonates)	Neurosyphlis	Toxoplasmosis
Enteroviruses (inc. polio)	Listeria	Cerebral malaria
VZV (immunosuppressed)	Coxiella	
EBV/CMV	Mycoplasma	
HIV		
Measles/mumps/rubella		
Arboviruses (West Nile, Zika, Japanese encephalitis)		
Zoonoses (rabies, Hendra, Nipah)		

2. Management

This gentleman should receive ABC support and treatment for meningo-encephalitis. Causes of metabolic encephalopathy should be ruled out by BM, blood tests and toxicology screen. CT scanning rules out intracranial bleed, large infarct, cerebral abscess or tumour. He needs a lumbar puncture for CSF microscopy, culture and sensitivity and viral PCR. Ideally perform the LP prior to antimicrobial therapy, but give treatment if there will be a delay.

The most common cause of viral encephalitis is **herpes simplex 1** and its mortality is 70% if untreated. Even with treatment 2/3 of patients have significant chronic neurological deficits and mortality is 15%. Give **aciclovir 10mg/kg 8 hourly**. Bacterial causes of meningitis should be covered with ceftriaxone and dexamethasone.