

Neurosciences Quiz

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Notice: Authors are encouraged to submit quizzes for possible publication in the Journal. These may be in any field of Clinical Neurosciences, and should approximately follow the format used here. Please address any submissions to the Assistant Editor, Neurosciences Journal, Riyadh Armed Forces Hospital, PO Box 7897, Riyadh 11159, Kingdom of Saudi Arabia. E-mail: smorrison@smj.org.sa

A man with fever and convulsions

Case Presentation

A 50-year-old hypertensive male patient with end-stage renal failure, and a kidney transplant recipient for a few years on Cyclosporin and Azathioprine presented to the Emergency Room, with a high temperature (39°C) and generalized tonic-clonic convulsions. After being given phenytoin loading, he was confused, disoriented, and not obeying commands. There were no signs of meningeal irritation or motor deficit. Brain CT was normal. Complete blood count, liver function tests and serum calcium and magnesium were normal. Kidney function tests showed elevated blood urea and creatinine without clear deterioration compared to previous results. Cyclosporin level was within therapeutic range. Lumbar puncture showed clear CSF with 50 white blood cells (80% lymphocytes), CSF protein was 33 mg/dl and CSF sugar was 79 mg/dl (blood sugar was 120 mg/dl). He was given treatment and a diagnostic procedure was carried out.

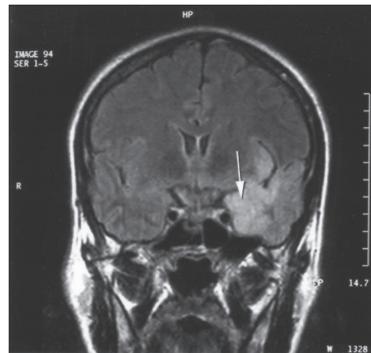


Figure 1.

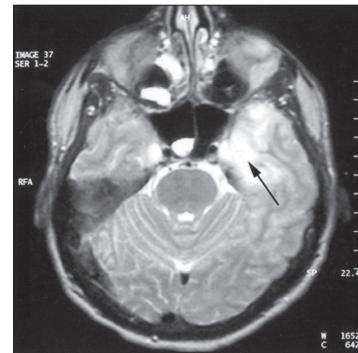


Figure 2.

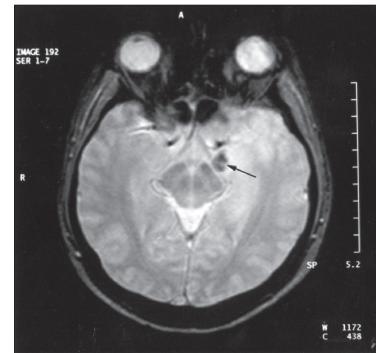


Figure 3.

Questions:

- A. What are the radiological findings?
- B. What is your diagnosis?
- C. How can you confirm the diagnosis?

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Answer Page

A. Findings:

Figure 1: Coronal FLAIR MRI showing an increased signal at the medial aspect of the left temporal lobe.

Figure 2: Axial T2 MRI showing a high signal in the medial aspect of the left temporal lobe.

Figure 3: Axial gradient-echo MRI showing focal intraparenchymal hemorrhage (arrow) at the medial aspect of the left temporal lobe.

B. Diagnosis:

Herpes Simplex Encephalitis

C. Confirmation:

Diagnosis is facilitated by CSF polymerase chain reaction.

Discussion

Herpes Simplex Encephalitis (HSE) is the most important treatable viral encephalitis with an incidence of one case/million/year. Approximately 90% are caused by HSV-1. It usually presents with fever, headache, clouding of consciousness, seizures, and signs of medial temporal lobe dysfunction. Brain CT may be normal early in the illness, or shows low attenuation in one or both temporal lobes. The MRI shows areas of focal edema in temporal lobes and orbitofrontal areas with possible enhancement. The CSF shows a lymphocytic pleocytosis ($10-200/\text{mm}^3$), increased protein (0.6-6g/l), and normal glucose. Diagnosis is facilitated by CSF polymerase chain reaction, and treatment is with intravenous Acyclovir for 14 days.

References

1. Johnston RT. Viral infections of the nervous system. 2nd ed. Philadelphia (PA): Lippincott-Raven; 1998.
2. Baringer JR. Herpes Simplex Virus Encephalitis. In: Davis LE, Kennedy PGE, editors. Infectious diseases of the nervous system. 1st ed. London (UK): Butterworth-Heinemann; 2002. p. 139-164.
3. Kennedy PGE, Chaudhuri A. Herpes Simplex Encephalitis. *J Neurol Neurosurg Psychiatry* 2002; 73: 237-238.