

A Case of Temporal Lobe Epilepsy with Mesial Temporal Sclerosis

Dr.B.Hari Kiran¹, Dr.K.Sudhakar M.D.², Dr.P.Harini³

¹(Post Graduate in Department of General Medicine, Siddhartha Medical College/Govt. General Hospital, Vijayawada, A.P., India)

²(Professor and Head of the Dept. Of General Medicine, Siddhartha Medical College/Govt. General Hospital, Vijayawada, A.P., India)

³(Post Graduate in Department of General Medicine, Siddhartha Medical College/Govt. General Hospital, Vijayawada, A.P., India)

Corresponding author: Dr.B.Hari Kiran

Abstract: Mesial temporal sclerosis is scarring of medial temporal lobes of the brain with loss of neurons presenting as focal seizures. We present a case of 15-year old boy with new onset recurrent focal seizures with discognitive features. MRI brain revealed focal increased T2 signals involving right hippocampus with prominent temporal horn.

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I. Introduction

Temporal lobe epilepsy is the most common form of epilepsy with focal seizures¹. The focal seizure can spread to other parts of brain turning secondarily generalized. The International League Against Epilepsy (ILAE) recognizes two main types of temporal lobe epilepsy: mesial temporal lobe epilepsy (MTLE) and lateral temporal lobe epilepsy (LTLE). MTLE is the most common type arising in the hippocampus, the parahippocampal gyrus and the amygdala².

II. Case Report

A 15-year old boy presented to the emergency department with chief complaint of new onset recurrent seizures. Each episode started as focal seizures associated with facial twitchings, lip smacking, motionless stare, altered behavior followed by secondarily generalized tonic-clonic seizures with postictal confusion. History of fever of 5 days duration associated with headache was present prior to the onset of seizures. No relevant past or family history was present. On examination, patient was drowsy with GCS score of E3V2M5 (10/15). Pupils - dilated, reacting to light, temperature - normal, pulse rate - 90/min, blood pressure - 100/60 mm Hg. Neurological examination showed normal tone in all limbs, absent deep tendon reflexes, plantar reflex - bilaterally mute and no neck stiffness.

Investigations:

1.Blood:

Hb - 8.4 gm%

TLC - 8600 cells/mm³

DC - P 66%, L 26%, M 2%

ESR - 34 mm/hr

RBS - 85 mg/dl

LFT and RFT - normal

Serum electrolytes – Na⁺ - 137 mEq/L, K⁺ - 3.6 mEq/L, Cl⁻ - 108 mEq/L

Serum Calcium - 9.4 mg/dl

Viral markers - negative

Widal and dengue serology - negative

Malarial rapid antigen test - negative

2.CSF analysis:

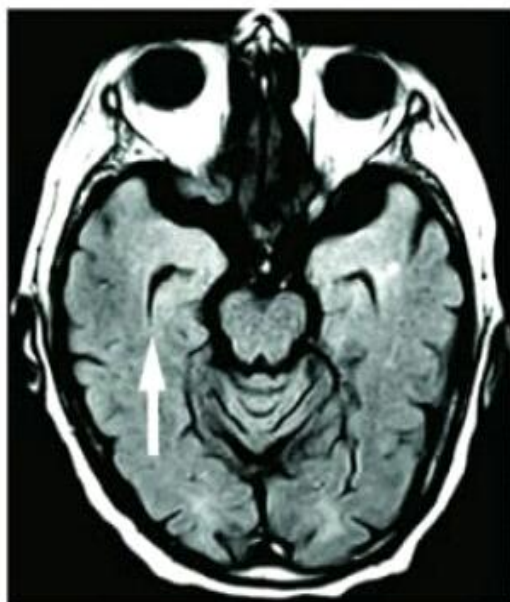
Appearance - clear

Protein - 10mg/dl

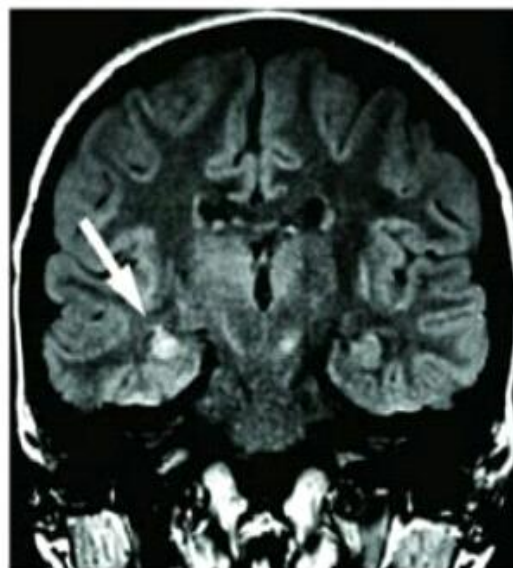
Sugar - 58mg/dl

Cell count - 3-4 lymphocytes/mm³
Pandys test - negative
ADA - 8 U/L

3. CT brain - Normal study
4. Interictal EEG - Normal
5. MRI Brain revealed focal increase in T2 signal involving right hippocampus with prominent temporal horn.



T1W image showing prominent temporal horn



Coronal Oblique T2 Flair image showing hippocampal sclerosis

Course of Illness and Treatment:

Patient developed severe respiratory distress due to recurrent seizures for which he was intubated and connected to mechanical ventilator on day 2 of admission. He was on ventilator for 3 days after which he was extubated following stabilization of condition. Seizures were controlled with 3 anti-epileptics - Inj. Sodium valproate 800mg iv BD, Inj. Levetiracetam 500mg iv BD and Tab Carbamazepine 400mg BD. He was put on antibiotics Inj. piperacillin-tazobactam and Inj. artesunate empirically but no response seen. Finally, acyclovir was added to which the patient showed response. In this patient probably viral encephalitis might have precipitated seizures in an already sclerosed hippocampus. Patient was discharged in stable condition with three antiepileptic drugs – Tab. Sodium Valproate 800mg BD, Tab. Levetiracetam 500mg BD and Tab. Carbamazepine 400mg BD.

III. Discussion

Mesial Temporal Lobe Epilepsy is the most common syndrome associated with focal seizures with dyscognitive features. It is an example of epilepsy syndrome with distinct clinical, electroencephalographic and pathologic features. MRI is the radiological investigation of choice for the evaluation of patients with temporal lobe epilepsy since it can identify structural abnormalities³. Ictal EEG patterns shows 5–10 Hz rhythmic sinusoidal waveforms or repetitive sharp waves or spikes. Serial EEG is sensitive and specific for the diagnosis of epilepsy⁴. Associated histologic finding is loss of neuron in CA1 sector (sommer sector) of the pyramidal cell layer of hippocampus⁵. Many of these patients have an excellent response to surgery and removal of the epileptogenic zone⁶. A large number of other studies have reported 60–80% of seizure freedom after the mesial temporal lobe resection^{7,8}.

IV. Conclusion

Mesial temporal sclerosis should be suspected in a case of recurrent focal seizures of new onset occurring in the first and second decades of life because it is known to be resistant to medical therapy and responds well to surgery.

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