A Juvenile Myoclonic Epilepsy Patient with Epilepsy-Associated Brain Tumor: Case Presentation

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Introduction

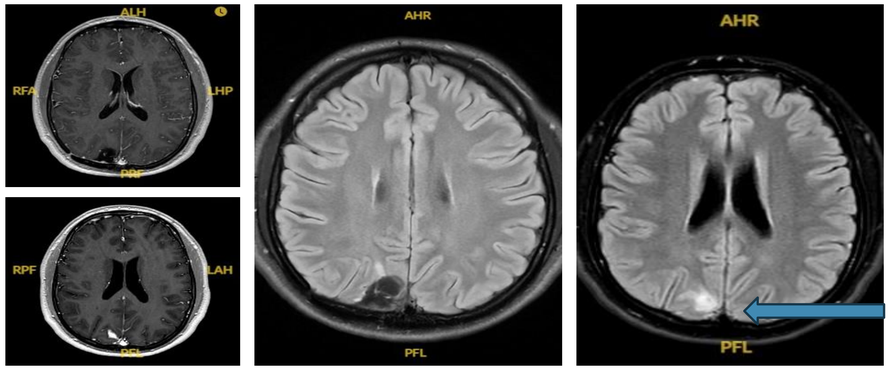
Low-grade developmental epilepsy-associated brain tumors (LEAT) are the one of the most common causes of focal seizures in pediatric patients who undergo epilepsy surgery. The greater part of LEAT is benign and classified as WHO I°, with some documented cases of malignant progression. Juvenile myoclonic epilepsy (JME) is the most prevalent idiopathic generalized epilepsy syndrome with adolescent and adult-onset. It is distinguished by myoclonic seizures and generalized tonic-clonic seizures in an otherwise healthy adolescent. In this case presentation, we discuss a patient who had new-onset seizures and a tumor discovered on a brain magnetic resonance imaging (MRI). He was referred to our center for phase 1 epilepsy surgery evaluation and was later diagnosed with JME.

Case Presentation

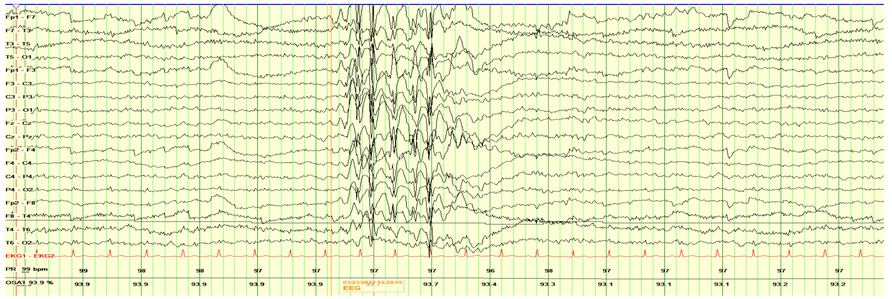
A 17-year-old boy with no prior medical history was referred to our hospital for an epilepsy surgery evaluation. According to his history, he first experienced myoclonic seizures at the age of 15 after prolonged computer exposure, then was treated with lamotrigine, followed by valproic acid. Brain magnetic resonance imaging revealed a hyperintense lesion in T2 sequences, with contrast enhancement superior to the right-parietooccipital sulcus. The patient was admitted to our video-EEG unit to undergo epilepsy surgery evaluation. Interictal EEG revealed spike-wave discharges at 2.5-3 Hz, while ictal EEG showed generalized multiple spike discharges with myoclonic jerks.

Juvenile myoclonic epilepsy was discussed following the epilepsy surgery meeting. The valproic acid dose was increased, and he was observed without seizures. During the follow-up, the oncology department recommended surgery for managing the lesion. Following an uneventful operation, he had one seizure on a day when he had been awake for a long time and had not taken his medications. He is seizure-free at the last visit. Pathology results were consistent with ganglioglioma WHO I°.

Conclusion: Patients with epilepsy should be closely monitored and thoroughly evaluated for epilepsy syndromes. Regardless of the brain MRI result, we diagnosed our patient with JME based on his history, seizure semiology, interictal EEG, and ictal evaluation. It should be noted that patients with lesions may have idiopathic generalized epilepsy.



Pre and post operative brain MRIs



Generalized spike-wave discharges at interictal EEG