

A Diagnostic Dilemma: Frontal Lobe Epilepsy or Psychogenic Non epileptic Seizures? The Complexity of EEG Interpretation

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Introduction

Making an accurate diagnosis between epileptic seizures and non-epileptic ones it is not always an easy task. Even though the importance of electroencephalography (EEG) in differentiating both entities together cannot be underestimated, still it happens often to be in front of confounding situations where EEG's role cannot help the diagnose.

We already know that a variety of patients presenting epileptic seizures, not always have pathological activity in the EEG. What about the vice versa condition? Pathological electroencephalographic activity not correlating with the clinical manifestations? More easily said – Abnormal EEG in a PNES patient?

Case Report

A 50-year-old man from Kukes, Albania, presented to our clinic following multiple episodes of loss of consciousness. These episodes were characterized by generalized muscle stiffening, rhythmic jerking movements and pelvic thrusting, which raised initial suspicions of epilepsy. His medical history included well-controlled hypertension and hyperlipidemia. He had no signs of tongue bite upon inspection. The rest of the objective neurological exam was unremarkable.

Family anamnesis: The patient is married with two adult children. He has a family history of epilepsy through his father, which increased the likelihood of a genetic predisposition to seizures disorders. No other relatives have reported similar neurological symptoms.

Personal anamnesis: The patient has an active lifestyle as a farmer. He reported that symptoms began approximately three months prior, escalating in significant incident during driving, he sought medical attention. He described experiencing a postictal state characterized by confusion and muscle soreness after episodes, without any history of major head trauma or substance use.

Given the anamnesis, the clinical presentation, and the genetic predisposition a seizure disorder was suspected,

frequency and severity. Initially, he attributed the episodes to stress-related fainting. However, following a and the patient underwent an EEG, which revealed bilateral theta activity in the frontal derivations, thereby suggesting potential organic seizures. A brain MRI was performed, resulting normal.

Lacosamide was started and follow up was recommended.

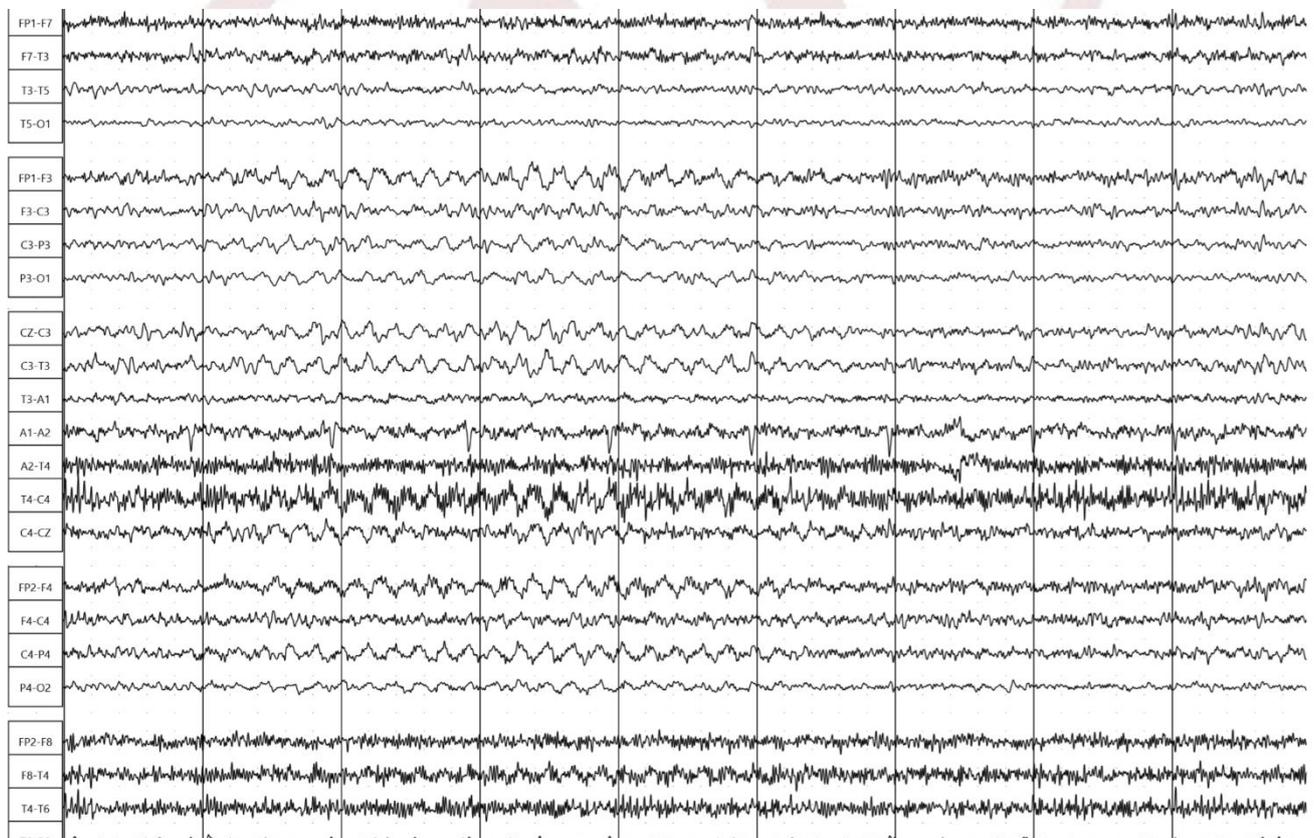


Figure 1: Bilateral frontal theta waves

Discussion

It is way complicated to name exactly a seizure, weather it is organic or functional. It requires several steps; a detailed anamnesis, excluding psychiatric history in the past, or psychological issues, a brain MRI and EEG, and most importantly, the clinician should testify the seizure episodes. However, even if these three steps get fulfilled, it still can remain difficult naming with certainty the seizures. Also, it is not a rare phenomenon to find an overlap between organic and functional seizures.

Unfortunately, EEG has not an absolute value in judging patients with loss of consciousness. An abnormal EEG does not necessarily equal epileptic activity, and our case highlights this distinction. We should pay more attention to the clinical features, accurate anamnesis, and consider EEG findings, without absolutizing them. It is important to view the patient history as pieces of a puzzle, waiting for the elements to get together as a whole. Video EEG in fact, is a valuable tool in the context of PNES, which can confirm the diagnosis upon suspicion.

It is important to understand and establish a differential diagnosis of PNES early, not only to obtain a more precise treatment plan, but also to improve patient

outcomes and the overall quality of care.

Psychiatric care and neuropsychological evaluation also are crucial for the follow up of this category of patients.

As a conclusion, presence of an epileptiform pattern in the EEG, does not exclude other possible imitators of Epilepsy, neither excludes the overlap between two different conditions.

The complexity of EEG interpretation, the broad spectrum of differential diagnosis, the need to take into account the numerous artifacts and normal variants when doing so, to interpret them while keeping in mind personalized patient's details and the exam's conditions, and to avoid drawing hasty and superficial conclusions.

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