

Pseudo-pseudo Epileptic Seizures: The Challenging Borderland

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Complex partial seizures are the most common form of epilepsy in adults. They manifest as stereotyped behaviour and/or movements, intermittent anxiety or even physical symptoms, strange affect and cognitive changes. Therefore, these manifestations and bizarre or uncommon types of epilepsy can lead to errors in which epileptic seizures are mistaken for psychogenic seizures. Likewise, failure to appreciate inconsistencies in the history may lead to the misdiagnosis of epilepsy.

The fact that epilepsy and psychiatric conditions might coexist makes the diagnosis even more challenging. The literature suggests that patients with epilepsy suffer from anxiety and mood disorders more than general population¹ and the interictal psychosis most commonly presents with a paranoid schizophrenic-like state². The life time prevalence of epilepsy is 3-4%, and majority of those have partial seizures³. Panic disorders have a life time prevalence of 1.5%⁴. Both conditions have considerable overlap of symptoms such as sudden unexpected fear, autonomic changes in skin colour, blood pressure and heart rate, and uprising sensation in stomach.

Diagnostic errors occur when the clinician is inexperienced or unfamiliar with different and unusual manifestations of epileptic seizure, the uncommon, atypical and bizarre seizure types, and when there is minimal or no electrographic abnormality on EEG. Peter Williamson⁵ has described six patients with different types of frontal lobe epilepsy mimicking psychiatric conditions. One of these patients had a tragic history and the child was institutionalized in a psychiatric hospital for two years.

Gibbs et al^{6,7} reported increased frequency of interictal psychoses in patients with complex partial seizures (Gibbs et al, 1948 and Gibbs 1951). The cytoarchitectural and neurochemical abnormalities in the mesial temporal lobe have been reported in schizophrenia. These structures are also the origin of epileptiform activity resulting in complex partial seizure⁸. On the other hand, patients with schizophrenia could be independently predisposed to have seizures due to possible head injuries or use of psychotropic drugs. Antipsychotic and Tricyclic antidepressants could lower the seizure threshold and potentially increase the risk of seizures⁹.

Panic attack, movement disorder or hypotensive syncope, intermittent explosive or sleep disorders in patients with psychosis can mimic seizures¹⁰. Many patients with complex partial seizures have experiences (auras) that simulate psychic symptoms for example déjà vu, jamais vu, auditory or visual hallucinations, episodes of depersonalization or derealisation and others. Patients with anxiety disorders often experience similar symptoms. Thompson et al¹¹ described three patients with partial seizures presenting as panic attacks. Subsequently regular or ambulatory EEG demonstrated repetitive epileptiform activity during the attacks.

Features of frontal lobe seizures that help to distinguish them from psychogenic events are: frequent clusters of seizures per

day, nonspecific warnings, frequent occurrence out of sleep, brief seizures less than one minute, stereotypical attacks for individual patients sudden onset and ending, minimal or no postictal confusion, prominent complex motor automatisms, including sexual automatisms, complex vocalization, bizarre attacks that appear hysterical, and complex partial status epilepticus.

The interpretation of the EEG results could also be a pitfall in the diagnosis. Patients with epilepsy can have a normal routine interictal scalp EEG. Normal ictal EEG is also seen in patients with simple partial seizures especially with auras of temporal lobe origin. In seizures originating in the medial or orbital frontal regions ictal and interictal EEG can be normal¹². Sometimes repeating EEGs by up to four times, can increase the yield by 90% in patients with confirmed partial epilepsy¹³.

Lieb et al¹⁴ reported that seizures originating in the depth of temporal lobes may not have electrographic correlate on scalp EEG or that the changes could be bilateral synchronous. Williamson et al (1985) also reported ten patients with complex partial seizures with no appreciable change on their scalp ictal EEG and frontal lobe foci were only found after depth electrode studies otherwise they would have been mistaken for non-epileptic seizures.⁵

Neuroimaging studies, positron emission tomography and single photon emission computerized tomography revealed medial temporal lobe abnormalities in patients with schizophrenia and seizures¹⁵.

Ultimately, continuous video/EEG recording allows observation of the clinical behaviour during an attack and correlation with the changes on the EEG. The presence of structural changes on MRI such as mesial temporal sclerosis or congenital abnormalities suggests the diagnosis of epileptic seizures.

The diagnosis could yet be challenging in a subgroup of partial epilepsies. Allen Wyler et al¹⁶ described the results of invasive monitoring in 12 patients with the diagnosis of pseudo epileptic seizures whose diagnosis could not be made with certainty on routine assessment. Six of these patients were diagnosed with complex partial epileptic seizures and underwent surgery. Three had frontal, two had temporal and one patient had bifrontal seizure foci.

In the study published in this issue of the Journal, the authors reported six patients with epileptic seizures who were misdiagnosed as having psychiatric illness¹⁷. Although it is true that physicians working in the epilepsy centres have advantage over the referring physicians because of the ability to record the attacks and perform electro clinical correlation, many of these errors could be avoided by a proper history and the observation of the seizure. I cannot overemphasize the importance of a thorough history and witness information in the management of patients with intermittent spells. They are the most helpful strategies for establishing the correct diagnosis.

There is often a pattern; age, circumstances of the seizure onset, preictal symptoms, duration of the ictal symptoms, witness information about motor automatisms such as swallowing or chewing movements, lack of response to medications, and the results of the diagnostic tests can lead to a proper diagnosis. With the availability of small cameras in cell phones, I have had a chance to observe many events that helped in the diagnosis of spells.

In view of significant overlap between epilepsy and psychiatric illnesses, it is also prudent for psychiatrists to be familiar with different manifestations of epileptic seizures and the value of EEG and indications for continuous video/EEG monitoring.

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