

•CASE REPORT•

A Case of Dissociative Seizures Presented like Myoclonic Epilepsy

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Summary: Psychogenic seizures are often underdiagnosed and epilepsy is very often over-treated which leads to multiple financial, social and stigma related difficulties. The myoclonic seizure itself is a rare phenomenon and when functional movement disorder presents like myoclonus then it's extremely difficult to pinpoint the exact cause. Here, we are presenting a case who was misdiagnosed as having a myoclonic seizure disorder and treated in multiple places without any improvement which ultimately turned out to be functional movement disorder of a rare variety.

Key words: seizures; myoclonus; functional; pseudo-seizures; dissociative

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1. Introduction

Dissociative seizures are manifestations having similar signs to that of seizures in the absence of paroxysmal neuronal discharge.^[1] This is not an uncommon problem as 5 to 10% of out-patient and 20 to 40% of inpatient cases with epilepsy are in fact psychogenic seizures.^[2,3] Also, 30% of refractory seizures which have been asked for continuous monitoring in an EEG (electroencephalography) lab were found to have a psychogenic origin.^[4] Dissociative seizures pose a significant burden on the healthcare system. Also, a proper diagnosis can reduce the burden of unnecessary utilization of health care resources.^[5,6] However, diagnosing them clinically is often challenging.^[7] Generally, it is delayed by an average of 7 years according to the literature.^[8] Given that myoclonus is a rare phenomenon (lifetime prevalence is less than 10 per 100,000), it is extremely difficult to clinically differentiate between functional and neurological symptoms when patients have a myoclonic seizure-like presentation.^[9] That is why, patients' treatments are often delayed, and may also lead to the unnecessary use of anti-epileptic medications and their side-effects.^[10,11]

2. Case history

A 25-year-old single male, Mr. A, a mechanic by occupation, presented with a 10 year history of episodic illness characterized by sudden jerk-like movements of the right hand, dropping objects from the hand followed by lying down on the floor, during which he was unresponsive for a few minutes. Post-event he reports that he could not remember anything related to the event. The maximum frequency of these attacks was 2 to 3 times per a week which occurred during episodic exacerbations. He had consulted 4 neurologists who had diagnosed him as having myoclonic epilepsy despite video electroencephalogram (EEG) and magnetic resonance imaging of the brain being found to be within normal limits. He tried multiple Anti-epileptic medications like Phenytoin, Valproate, and Levetiracetam for the past 7 years. He had a poor response and fluctuating course in the frequency of attacks. On life-chart analysis, there was a relatively long inter-episodic interval of jerk free periods (i.e. often 3 to 4 months of jerk-free periods). Finally, he was referred to psychiatry for the evaluation of a possible psychogenic phenomenon, based on the above atypical clinical picture.

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On our initial evaluation, he was found to be having generalized anxiety symptoms based on Hamilton anxiety rating scale (HAM-A) (score of 23) and anxious avoidant personality traits as per the Diagnostic and statistical manual (DSM-5) criteria. In liaison with a neurologist, we repeated an EEG along with an Electromyography (EMG). We noticed a pre-potential EEG spike of 700 milliseconds before the EMG spike. This confirmed the underlying dissociative/psychogenic phenomenon. He was then started on venlafaxine up to 75 mg/day with which he had improvement in anxiety symptoms. On an out-patient basis, supportive psychotherapy sessions were planned. In individual therapy sessions he had revealed a number of stressors such as being the last born of 5 siblings, being the member of a conservative Muslim family, having poor coping skills, encountering financial crises which made him stop education and work as a mechanic, and job stress due to having to work night shifts. A temporal association was demonstrated between the episodes of myoclonus and stressors in the life-chart of analysis. Later in the sessions, he gained insight into his illness and admitted his illness was serving the benefit of gaining exemptions from night-shift work. However, he denied any conscious efforts in these episodes. Therapy was terminated after 12 sessions. No further recurrence of myoclonic jerks was noted at the end of the 6 month follow-up.

3. Discussion

Myoclonus is a sudden, brief, involuntary, often irregular jerky movements of a muscle or group of muscles. It can be classified in a number of ways such as based on etiology, anatomical distribution/localization, or depending on its association with rest or action. It can occur in association with tonic-clonic seizures as a part of epilepsy syndromes. Consciousness can occasionally be involved in isolated myoclonic jerks. Hence it is extremely difficult to clinically distinguish epileptic myoclonus from psychogenic myoclonus.

In our case, there was a temporal correlation between the stressor and myoclonic jerks each time, which were getting better with anxiolytics, even without any antiepileptic. The patient had been given multiple anti-epileptics without any improvement before the treatment with anxiolytics, which also made us think about the psychogenic component. His EEG was also normal, but diagnosing epilepsy does not always rely on EEG alone as the accuracy of EEG in epilepsy is only 30%.^[11-13] And when it happens repeatedly, neurologists tend to over treat it based on clinical observation rather than further investigations, which lead to significant financial as well as a physical burden.^[14-17] They often forget about the psychogenic component, which for decades has led to missed diagnosis of the real illness.^[7,18] Our case is thought-provoking as patients went through multiple places to seek treatment even though the outcome was nearly futile. In the end, the physicians had to refer him as they were not able to

validate his concerns. It is very common in a country such as India where consultation-liaison is in its infancy in most institutes. In this case, dissociation imposes a great social burden because of the high stigma of being a person with epilepsy.^[19] Where epilepsy has a medical model of long-term need for medicines, patients often become hopeless, even develop multiple adverse effects which could be avoided with proper management of the real illness. The understanding of dissociation is poor among the general population so they often accuse patients of being fake or intentional. So, being diagnosed as having epilepsy protects them from being accused as fake which in turn gives reinforcement to maintain the behavior, as the dissociation carries more stigma than epilepsy.^[20-22]

From a clinical point of view, thorough history taking, clinical examination, and investigations are important to differentiate psychogenic phenomenon from organic ones, when there is a suspicion.

Even with high clinical skill this is difficult as evidence by the fact that 30% of cases of psychogenic seizures get misdiagnosed.^[23] Rather than a single finding, multiple combinations of findings increase the diagnostic validity in any case which presents with diagnostic difficulty between true seizures and pseudo-seizures (Table 1).

Our case represents the need for learning the rare phenomenon of dissociation, mainly for the neurologists as well as general physicians. We must develop methods for determining aetiologies in an individualizing manner for every patient with psychogenic non-epileptic seizures. At the end of the day, better care of these patients also will depend on increasing access to practitioners familiar with their condition, and skilled enough to choose the right treatment for the individual patient.^[7,24]

Conflicts of interest statement

Authors declare no conflict of interest related to this manuscript

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Patient's informed consent

Informed consent was obtained from the patient.

Authors' contributions

MA provided the case report part. SG performed the literature search, BSR wrote the first draft of the manuscript, and SD edited the manuscript and provided input. Finally, all the authors have reviewed and approved the final draft prepared by BSR.

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Table 1. Features to distinguish psychogenic myoclonus from organic myoclonus

Assessments	Distinguishing features of Psychogenic myoclonus from organic myoclonus
History	Presence of following favors a psychogenic origin: Abrupt onset, association with emotional or physical trauma, or by some conflict (marital, sexual, work-related), Paroxysmal, episodic, intermittent disorder, with spontaneous remissions. However myoclonic jerks can occur as irregular movements, but once they occur they cannot wax and wane until the underlying etiology is treated.
On clinical examination	In psychogenic or dissociative phenomenon, patients usually have reduced awareness of the surroundings or are often fully conscious, but may not able to react to stimuli. Often this information can be obtained retrospectively (eg. in psychotherapy sessions). In contrast patients with seizure disorder (eg. epilepsy syndrome involving myoclonus) usually have loss of consciousness. But consciousness rarely is affected in isolated/pure myoclonic jerks. Intermittent random jerks which change in frequency, amplitude, anatomical distribution, distractibility, la belle indifference, exaggerated startle response to sensory stimuli such as loud sounds are more suggestive of the possibility of psychogenic myoclonus, whereas organic myoclonus can be localizable to cortical, subcortical, or brainstem. Of note, organic myoclonus is stimulus sensitive (i.e. induced by a stimulus in another modality and may resemble that of exaggerated startle in psychogenic myoclonus). The occurrence of reflex jerks (i.e., when the tendon hammer is stopped just short of the tendon [without hitting it]; here just the visual stimulus might provoke the psychogenic movement ^[25-28] , which may not occur in organic myoclonus.
Other comorbidities	Co-existing cluster B personality traits/disorders may point towards psychogenic myoclonus. Often the presence of co-morbid diagnoses like somatization, anxiety, depression also helps in making a diagnosis of dissociation. ^[2]
Electroencephalography	Presence of a pre-movement Bereitschafts potential (BP) on electroencephalography (EEG) back averaging technique is helpful. ^[25-28] An EEG pre-potential of less than 100ms favors organic myoclonus, whereas more than 100ms suggests a psychogenic origin.
Electrophysiological studies	Distinguishes reliably. In patients with psychogenic myoclonus, there is a BP-like slow EEG shift before the jerk whereas BPs are never recorded in organic involuntary movements or among normal subjects. In the case of organic myoclonus the C-reflex reaction time would be usually faster than 40 to 50ms, but in the psychogenic myoclonus, it is hardly faster than 100ms. ^[25-28]

一例分离型抽搐发作表现为肌阵挛癫痫

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概述：心因性抽搐发作经常会漏诊，并且癫痫往往会被过度治疗从而导致多种财力、社会、以及耻辱感相关的问题。肌阵挛癫痫发作本身是一种罕见的现象，当功能性运动障碍呈现肌阵挛的时候就极难找到确切的原因。在这里，我们呈现一个被误诊为肌阵挛癫痫

发作障碍的病例，该患者在多处经过治疗却无好转并且最终被诊断为患有非常罕见的功能性运动障碍。

关键词：癫痫；肌阵挛；功能性；假性癫痫发作；分离型

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