

Multidimensional Assessment Dissociative Psychopathology: Non-Epileptic Seizures and Neurology

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Abstract

Psychogenic Nonepileptic seizures are a Functional Neurological Disorder/ Conversion Disorder subtype, which are neurobehavioral conditions at the interface of Neurology and Psychiatry. Significant advancements over the past decade have been made in the diagnosis, management and neurobiological understanding of PNES. This article reviews published PNES research focusing on semiologic features that distinguish PNES from epileptic seizures, consensus diagnostic criteria, the intersection of PNES and other comorbidities, neurobiological studies, evidence-based treatment interventions and outcome studies. Epidemiology and health care utilization studies highlight a continued unmet medical need in the comprehensive care of PNES. Consensus guidelines for diagnostic certainty are based on clinical history, semiology of witnessed typical event(s), and EEG findings.

Neuroimaging studies, while requiring replication, suggest that PNES may occur in the context of alterations within and across sensorimotor, emotion regulation/processing, cognitive control and multimodal integration brain systems. Future research could investigate similarities and differences between PNES and other somatic symptom disorders.

Keywords

Psychogenic Nonepileptic Seizures, Conversion Disorder, Cognitive Behavioral Therapy, Sertraline, Functional Neuroimaging, fMRI, Functional Neurological Disorder, Psychotherapy.

Introduction

Functional Neurological Disorders (FND) / Conversion Disorders (CD) are highly prevalent neurobehavioral conditions at the interface of Neurology and Psychiatry. Psychogenic Nonepileptic Seizures (PNES) are a FND/CD subtype where individuals exhibit paroxysmal convulsive events and/or alterations in behavior and consciousness that resemble epileptic seizures (ES) but are not associated with changes in cortical activity. PNES and other somatic symptoms were first introduced in the medical literature as “hysteria” and considered identifiable neurological conditions by Jean-Martin Charcot; early psychological theories were postulated by Sigmund Freud, Pierre Janet and others. Modern day conceptualizations of PNES now integrate mind and brain.

Medical, Neurological And Psychiatric Comorbidities

Apart from their seizures, adult patients with PNES have co-morbid medical, neurologic and psychiatric conditions that contribute to their overall symptom complex, prognosis and treatment responses. For example, in a two-year retrospective review of PNES (N=158) and ES (N=122), individuals with PNES were more likely to report a history of other medical somatic syndromes (e.g. fibromyalgia, chronic fatigue syndrome, chronic pain, irritable bowel syndrome) and more frequently endorsed chronic, intermittent medical conditions (e.g. migraines, asthma) Compared to ES, patients with PNES also more commonly endorsed complaints on a review-of-systems questionnaire. Veteran and civilian populations with PNES frequently report a history of traumatic brain injury (TBI), and a distinct subset of patients have co-morbid intellectual disabilities.

Categorical psychiatric diagnoses and symptom-specific increases in anxiety, depression, and dissociation are linked to PNES.

Patients with PNES often have mood, anxiety, dissociative and other somatic symptom disorders, along with personality disorders, including clusters B and C personality disorders.

Electrophysiology and autonomic nervous system studies have also contributed to the understanding of PNES pathophysiology. In a cohort of 18 PNES and 18 healthy subjects, resting state high-density source EEG analyses showed that PNES patients exhibited decreased functional connectivity between the basal ganglia and cortical regions, along with reduced interhemispheric connectivity across paralimbic regions. In a unique case of intracranial recordings during PNES, decreased power in the theta band was observed over the posterior parietal cortex. Several investigations have probed autonomic profiles peri-ictally in PNES; some noted increased sympathetic tone ictally in ES vs. PNES, while others characterized pre-ictal and post-ictal autonomic changes as distinguishing between groups.

Materials and Methods

A total of 82 patients, age >14 years with clinical suspicion of PNES with or without any coexisting epilepsy attending neurology outpatient in a tertiary care hospital in North India were enrolled over a period of 2 years (August 2009-July 2011). Clinical suspicion was based on the following criteria:

- Refractory epilepsy or change in symptomatology
- Episodes of variably prolonged unresponsiveness and lying motionless
- Multiple or non-stereotypical seizure patterns
- Occurrence in situations as in front of audience, doctor or in waiting room

- Seizure provoked by emotional stress
- Associated psychiatric disorders.

After a thorough clinical history and detailed neurological examination, all the cases were subjected to video-EEG monitoring. Of 82 patients, 63 (76.82%) had confirmed diagnosis of PNES. The diagnosis of PNES was based on witnessing the event, that occurred either spontaneously or on induction by hyperventilation and verbal suggestion during video-EEG. Based on the clinical semiology, the patients were divided into two groups; type A characterized by excessive motor phenomenon or type B with limp attacks with/without minimal motor phenomenon. All patients were further evaluated for any coexisting anxiety or depressive disorders using DSM-IV criteria and their severities were assessed using Hamilton Depression/Anxiety rating scales. After confirming the diagnosis of PNES, all the patients and the family members were properly explained about the diagnosis; that these episodic events were not due to epilepsy and such phenomenon may occur due to various kinds of stress, lack of coping skills or existent psychological disturbances. All the patients were thoroughly interrogated to identify the possible precipitating factors if any; counseled to increase their self-confidence and coping skills and encouraged to remain socially and occupationally active. Along with counseling, patients were started on antidepressants with/without anxiolytics; according to the psychiatric comorbidity. Antiepileptic drugs were slowly withdrawn in patients with only PNES. All patients were followed-up at 6 and 12 months either by hospital visits or telephonically regarding frequency of PNES. A good outcome was defined as achieving seizure freedom state or >50% improvement.

Results

A total of 63 patients were included in the study. Majority of patients were women (90.46%), with the mean age at onset being 25.44 ± 10.22 years. Most of our patients were literate (84.12%), resident of urban areas (55.55%), from nuclear families (58.73%), and were belonging to either upper lower or lower middle class (93.65%) (Modified Kuppuswamy scale 2007). Of the 57 female patients; 33 were house wives, 10 students, and the rest 14 were widows and unmarried females. Of the six male patients, four were gainfully employed, one was unemployed, and one was a student.

The comorbid anxiety and depressive disorders were seen in 62.3% and 90.16% cases, respectively. On the assessment of severity, majority of these patients had moderate-severe scores on Hamilton depression scales (65.56%), and mild-moderate scores on Hamilton anxiety scales (81.76%) respectively. Neurological comorbidities were seen in 38 (60.31%) patients (six had coexistent epilepsy), commonest being chronic tension type headache in 27 patients, migraine in 2, mild mental retardation in 2, alcohol dependence in 2, tubercular meningitis in 1, drug addiction in 1, operated brain tumor in 1, history of significant head injury in 1, and Neuromyelitis Optica in 1 patient respectively.

Psychiatric Comorbidities (n=61) (%)

Depressive disorders	55/61 (90.16)
Hamilton depression rating scale HAM-D score	17.13±3.36
Anxiety disorders	38/61 (62.3)
Hamilton anxiety rating scale HAM-A score	15.88±3.75
Somatoform disorder	17/61 (27.86)
Dissociative disorder	2/61 (3.28)
Neurological comorbidities (n=63) (%)	
Chronic tension type headache	27/63 (42.85)
Others	11/63 (17.46)

Discussion

Similar to the previous studies majority of our patients were women (90.46%) in late 2nd-3rd decade (72%) of their life; with a mean age of onset and presentation of PNES 25.44 years and 27.72 years respectively. In one previous Indian study of 71 adult patients with PNES (Lazarus 2003), compared to our study there was a younger population group (mean age at onset 19.68 years) and a lower proportion of women (78.9%). The likely reason is the fact that majority of patients in their study were students whereas married females constituted majority of our patients.

Most of our patients came from nuclear families with poor emotional and peer support. Emotional stress was the precipitating factor in 74.6% of our patients, but only 17.46% of our patients had reported physical abuse. The lower reporting of sexual abuse (7.93%) by our patients as compared to previous studies (11-67%) was likely due to our social structure, fear of earning disrepute and legal issues. The data about comorbid psychiatric illnesses is highly variable because of the use of different nomenclature, criteria, and classifications.

Psychogenic seizures (PNES) are not caused by abnormal brain electrical activity. The symptoms of PNES usually reflect a psychological conflict or a psychiatric disorder. These symptoms can be precipitated by an acute event in the life of a previously traumatized person, most commonly those who have been traumatized during childhood.

Conclusions

PNES are highly prevalent, complex neuropsychiatric symptoms. Over the past 5-10 years, notable advancements have been made in the diagnosis and management of this previously enigmatic condition. Neurobiological studies using systems-level, clinical neuroscience techniques are elucidating an emergent neurobiology for PNES, which will hopefully help reduce the stigma associated with this condition and facilitate additional research efforts to identify diagnostic biomarkers of prognosis and treatment response also help clarify gender differences, and similarities and differences between PNES and other somatic symptom subtypes.

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