

Clinical semiology of psychogenic nonepileptic seizures

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ABSTRACT

Despite the increasing interest to psychogenic nonepileptic seizures (PNES) showed over the past decade, less attention has been paid to semiological classification of events and its correlation to psychiatric disturbances underlying PNES. We have reviewed all 17 cases diagnosed with only PNES during 2000-2001 years in the Institute, in which conversion disorder contributes to 76,4% and somatization and posttraumatic stress disorders respectively each to 11,8%. Based on clinical semiology of events we have classified them on four groups: fainting-like, demonstrative, disruptive and grand mal-like. All patients but one experienced only one type of psychogenic seizures. The observations should be reassessed in a large sample size.

KEYWORDS: *psychogenic nonepileptic seizures, semiologic classification, psychiatric diagnoses*

Nonepileptic seizures (NES) represent one of the most challenging conditions in medicine. Along with the difficulties in diagnosing they may pose, physicians still encountered problem in management of patients with NES. Estimated prevalence of the NES between patients referred for the seizure-like disorders to epilepsy center ranges from 10 to 30%. Indeed, one study showed that 20% of patients with intractable seizures had pseudoseizure [11]. The NES further are divided to psychogenic and physiologic. The events have been labeled as 'psychogenic', if mechanism of their initiation is of psychologic origin. Psychogenic NES contribute to the biggest part of NES. Another part form patients with paroxysmal events caused by physiological factors, such as syncope, cerebrovascular disease, migraine, movement disorders etc.

The first mention of 'seizures' that are not epileptic dates back to ancient time. However, detail clinical descriptions were provided in the late of XIX century (by Charcot, Gowers and others) with growing of interest to hysteria phenomena [12]. Only during past several decades attempts to categorize NES have appeared. Some authors have classified psychogenic seizures by their resemblances to various types of epileptic seizures. For example, Kanner and Parra [15] have divided PNES on convulsive and non-convulsive, and the latter further on complex-like, absence-like and atonic-like seizures. Nonepileptic paroxysmal disorders have been categorized according to the epileptic seizure types they mimic (simple or complex partial, absence, myoclonic, tonic, atonic or tonic-clonic) in the excellent review by Luciano [17]. On the contrary, other authors found that NES are better to classify in a different way, distinct from episodes of epilepsy. Their opinion is strictly based on original observations [1,2,16,18] and only one study used statistical method of cluster analysis of NES clinical symptoms [13]. The nonepileptic paroxysmal events were subdivided on unresponsive with little or usually no movement (collapse, limpness, swoon, atonic) and those with prominent motor phenomena. Betts and Boden [2] suggested that convulsive nonepileptic attacks usually have two different manifestations: resembles a childish tantrum and classic type of pseudoseizure, abreactive attack.

The present study was undertaken to determine whether psychogenic nonepileptic events could be classified depending on a clinical semiology into distinct groups

other than epileptic seizure categories. For proper realizing of this aim we selected psychogenic NES with only clear psychiatric diagnoses.

MATERIAL AND METHOD

We have retrospectively reviewed medical records of all cases of definitive psychogenic NES identified among 623 patients hospitalized during 2000-2001 years in the Department of Clinical Neurology of the Institute. Due to specificity of a protocol, diagnostic process has been managed by team, including epileptologist and neuropsychiatrist. Two steps approach has been realized. During first, standard evaluation of patient with a suspicion of seizure disorder was done, including carefully collecting family and clinical history, neurological examination, electrophysiological investigation and laboratory tests. Only in difficult to interpret cases 24 hours ambulatory cassette EEG (AC-EEG) monitoring was performed. The findings of the AC-EEG monitoring were considered diagnostic only when the recorded event was recognized by the patient and/or family member as being typical (as one causing admission). Lack of electrographic paroxysmal changes during typical events was the evidence, confirming NES.

In parallel to raising suspicion of non-epileptic and non-organic causes of typical events, neuropsychiatrist was joining to evaluation team for recognition possible psychological disorder. Thus, negative results from above mentioned investigations (that is, exclusion of epilepsy) in combination with positive data for psychiatric disturbance, which contributes to NES, finally confirmed the psychogenic nature of NES. Mental disorder diagnosis was made after psychiatric interview based on the research criteria ICD-10 [21].

RESULTS

Only 17 patients with no associated organic disease were included into final analysis. In thirteen cases the diagnosis of dissociative-conversion disorder was made (76,4%), remaining cases included the diagnoses of somatization (11,8%) and posttraumatic stress disorders (11,8%). Mean age was 27,1 (SD±10,35), range 17-47. Females to male ratio was 10/7 with the about equal mean age for sex groups (26,8 and 27,4 respectively). Clinical characteristics of events were taken from medical records, containing information carefully collected from patients, witnesses, family members and medical personnel.

Fainting-like	Onset with autonomic signs: palpitation, nausea, chest discomfort, followed by diffuse weakness, resulted in cutting-off and sinking to the floor without injury, <i>unresponsiveness</i> with minimal or rare motor phenomena may be prolonged and progress to stupor
Demonstrative	Difficulty in breathing, palpitation, chest discomfort, <i>trembling, tremor, tonic spasms of extremity</i> , slight cloudiness of consciousness, motor components lack of dramatic effect
Disruptive	Resembles psychomotor seizure with autonomic arousal (palpitation, dyspnoea, sweating), progressing to <i>agitation and aggressive behaviour</i> – hitting of head or fists to wall, trashing with self-injury and noise, usually manifest in a lying position
Grand mal-like	Begins with palpitation, nausea, dizziness, dyspnoea, choking followed by tonic or <i>clonic convulsions</i> , upward deviation of eyes, <i>opisthotonic posture</i> , characteristic pelvic trusting, deep decreasing of responsiveness on external stimuli, occurs in bad even at night.

Tab.1 Psychogenic NES classification based on by clinical semiology.

Type of psychogenic NES	All patients (n=17)	Males (n=7)	Females (n=10)
Fainting-like	41,1%	42,8% (3)	40% (4)
Demonstrative	23,5%	28,6% (2)	20% (2)
Disruptive	11,7%	14,3% (1)	10% (1)
Grand mal-like	29,4%	14,3% (1)	40% (4)

Tab.2 Distribution of different types of psychogenic NES.

On the result of clinical semiology clustering the four types of events have been identified, which are given in Tab.1. All patients but one experienced only one type of paroxysm. One female patient was presented with multiple NES, namely disruptive and grand mal-like. The distribution of selected types of psychogenic NES is present in Tab.2. There was no association between psychiatric diagnosis and particular clinical form of nonepileptic seizures.

DISCUSSION

It was not surprising that dissociative (conversion) disorders were the main psychiatric diagnosis for NES, which is in agreement with literature reports [6,7,9]. Our categorization of psychogenic NES in general is common with those, proposed by some authors [2,13,14]. The only differences could be found regarding division of NES with prominent motor features. Further analysis shows a very interesting result: that disruptive type of NES is identical to tantrum in the classification by Betts and Boden [2], whereas, the demonstrative is that, defined as psychogenic minor motor (cluster 2) according to Groppe et al. [13] or qualified by Jedrzejczak et al. [14] as partial seizure-like in group B. The classifications are similar only with regard to grand mal-like motor seizures, which are named either abreactive or psychogenic motor seizures (cluster 1) respectively. Therefore, although surprisingly, but our division encompasses all types of psychogenic motor paroxysms, reported previously. This is suggesting that both, descriptive and statistical methods of clustering overall can accurately classify psychogenic NES by clinical semiology.

Demonstrative seizure category in our classification can be viewed as an abridge type of disruptive seizure. Except fainting type of events, all others by definition

consist of motor phenomena. Subdivision psychogenic NES into demonstrative, disruptive and grand mal-like (big convulsions) seems to reflect the power of motor expression from slight to severe. In our series, motor manifestations were the most common ictal features in both men (57,2%) and women (60%). Great majority of studies reported that seizures with prominent motor activity are the most common type of NES [19]. However, it should be noted, that not movement description but complex clinical semiology formed the basis of our classification.

The role of sexual and physical abuse in the genesis of NES is widely discussed in Western literature [8]. Several studies found greater frequency (up to 70%) of reported childhood trauma in subjects with psychogenic seizures both in descriptive studies [6] and in studies including comparison groups [3]. Higher prevalence of childhood abuse history in psychogenic NES patients in comparison with epilepsy patients may be because of marked predominance of female patients in nonepileptic group. Nevertheless, nonepileptic seizure in patients with a history of abuse is considered as a form of chronic posttraumatic stress disorder that may represent either an attempt to withdraw from unpleasant memories of the abuse ('cutting off' mechanism) or an 'acting out' of a flashback experience related to previous traumatic events [4, 5].

One study [1] found that only patients with motor manifestations had a history of sexual and physical abuse. However, others did report previous penetrative abuse in those who had swoon and extreme motor types of seizures [3]. The recent review clearly showed that traumatic experiences, including abuse as well as general trauma, are a risk factor for development of psychogenic NES [10]. However, the authors pointed out, that traumatic

experience and NES probably are not directly associated, but related through some underlying predisposing factor.

Due to cultural peculiarities of Georgia, where in terms of ethics the act of rape is strongly convicted by society, very low background level of physical and sexual abuse in general population is highly expected and most likely among women with NES too. Hence, it is not surprisingly that interview of the patients in our series did not reveal any past history of sexual abuse or incest. In a society, where the fact of female abuse can be easily disclosed later and mostly results in a moral condemnation of a person perpetrating violence, conditions for realizing sexual and physical violence against children and young females are minimal.

We suggest that there are other factors, which may contribute to the manifestation of NES. Among them, based on our personal observation, it might be of interest to consider the restrictions of women's activity in social and/or family life. In traditional societies, women are culturally and historically restricted in expression and acting according to their emotions. While bearing family burden, their participation in settling of strategic issues is not encouraging. It could be suggested that the NES can be viewed as a form of communication and drawing attention along with anger and protest when direct expression of opinion and reactions is prohibited. Repression of a woman in social life may take extreme form as it can be seen in some ethnical groups in Georgia, like compacted populated Muslims. According to our observations psychogenic nonepileptic seizures are frequently expressed among females, but not among males within this society. The close to this idea has been stated by Rosenbaum [20], who noted, that psychogenic seizures in women probably are expression of rage, fear, helplessness rather than sexual conflicts.

The similar intrapsychic experiences can be seen in men, particularly in ex-soldiers of war against separatists in Abkhazia region. Loss of home, family members and property is the cause of traumatic memories in forcibly displaced persons. Those people can develop psychogenic NES as a form of severe posttraumatic stress disorder, which was recognized in two cases of our series (one man and one woman).

The psychogenic NES may be viewed as a form of learning behaviour, reinforced by reactions of environment (family, friends), showing attention and support which can lead to some benefit for patient like avoiding responsibility. We can suggest, that the seizure-like disorder protects patient from performing duties (professional, parental, civil and etc), which in normal circumstances seems to be beyond his psychological possibilities, but which otherwise can be overcome by shifting responsibility on others and not losing one's own face. This unconscious psychological mechanism (assuming the sick role) was discussed as a basic etiological model for most of our patients.

Finally, we would like to stress, that psychogenic NES should be classified on a way different that epileptic seizures and clinical semiology seems to be the best criterion to categorize them. On the other hand, we did not find any clinical correlation between form of NES and psychiatric diagnoses or presumed psychological model of psychogenic seizure etiology, which could help in diagnostic process or choosing relative therapeutic strategy. Despite the fact, that all types of nonepileptic seizures have been observed among both women and men, we can speculate that women much more experienced grand mal-like seizures than men (80% versus 20%). However, small sample size lacks of statistical significance. We suggest that further studies of a large number of patients with documented psychogenic NES could throw a light on that issue.

REFERENCES:

1. Abubakr A, Kablinger A, Caldito G. Psychogenic seizures: clinical features and psychological analysis. *Epilepsy Behav* 2003; 4:241-245.
2. Betts T, Boden S. Pseudoseizures (non-epileptic attack disorder). In: Trimble MR (ed.) *Women and Epilpsy*, John Wiley & Sons, 1991, pp243-258.
3. Betts T, Boden S. Diagnosis, management and prognosis of a group of 128 patients with non-epileptic attack disorder. Part II. Previous childhood sexual abuse in the aetiology of these disorders. *Seizure*. 1992; 1(1):27-32.
4. Betts T, Duffy N. Non-epileptic attack disorder (pseudoseizures) and sexual abuse: a review. In: Gram L, Johannessen, Osterman PO and Sillanpää M (eds) *Pseudo-Epileptic Seizure*. Wrightson Biomedicl Publishing, Petersfield, 1993, pp55-67.
5. Betts T. Psychiatric Aspects of Nonepileptic Seizures. In: Engel J Jr, Pedley TA (eds) *Epilepsy: A Comprehensive Textbook*. 1997, Lippincott-Raven, Philadelphia, Vol.III, pp2101-2116.
6. Bowman ES, Markand ON. Psychodynamics and psychiatric diagnoses of pseudoseizure subjects. *Am J Psychiatry* 1996; 153:57-63.
7. Bowman ES. Nonepileptic seizures: psychiatric framework, treatment, and outcome. *Neurology* 1999; 53(5) suppl2:S84-S88.
8. Cragar DE, Berry DTR, Fakhoury TA, Cibula JE, Schmitt FA. A review of diagnostic techniques in the differential diagnosis of epileptic and nonepileptic seizures. *Neuropsychology Review* 2002; 12(1):31-64.
9. Devinsky O. Nonepileptic psychogenic seizures: quagmires of pathophysiology, diagnosis, and treatment. *Epilepsia* 1998;39(5):458-462.
10. Fiszman A, Alves-Leon SV, Nunes RG, D'Andrea I, Figueira I. Traumatic events and posttraumatic stress disorder in patients with psychogenic nonepileptic seizures: a critical review. *Epilepsy Behav*. 2004; 5(6):818-25.
11. Gates JR, Ramani V, Whalen S, Loewenson R. Ictal Characteristics of Pseudoseizures. *Arch Neurol* 1985; 42:1183-1187.
12. Gates JR, Luciano D, Devinsky O. The classification and treatment of nonepileptic events. In: Devinsky O, Theodore WH (eds) *Epilepsy and Behavior*. Wiley-Liss, New York, 1991, pp251-263.

13. Gröppel G, T. Kapitany T, Baumgartner C. Cluster analysis of clinical seizure semiology of psychogenic nonepileptic seizures. *Epilepsia* 2000; 41(5):610-6 14.
14. Jedrzejczak J, Owczarek K, Majkowski J. Psychogenic pseudoepileptic seizure: clinical and electroencephalogram (EEG) video-tape recordings. *Eur J Neurol* 1999; 6:473-479.
15. Kanner AM & Parra J. Psychogenic Pseudoseizures. In: Lüders HO & Noachtar S (eds) *Epileptic Seizures. Pathophysiology and Clinical Semiology*. Churchill Livingstone, New York, 2000, pp766-773.
16. Leis AA, Ross MA, Summers AK. Psychogenic seizures: ictal characteristics and diagnostic pitfalls. *Neurology* 1992;42:95-9.
17. Luciano DJ. Nonepileptic Paroxysmal Disorders. In: Ettinger AB, Devinsky O (eds) *Managing Epilepsy and Co-Existing Disorders*. Butterworth -Heinemann, Boston, 2002, pp.3-35.
18. Meierkord H, Will B, Fish D, Shorvon S. The clinical features and prognosis of pseudoseizures diagnosed using video-EEG telemetry. *Neurology* 1991;41:164-306.
19. Reuber M, Elger CE. Psychogenic nonepileptic seizures: review and update. *Epilepsy Behav.* 2003; 4(3):205-16.
20. Rosenbaum M. Psychogenic seizures - why women? *Psychosomatics* 2000; 41:147-149.
21. World Health Organization: *The ICD-10 Classification of Mental and Behavioral Disorders: Diagnostic criteria for research, 10th revision*. Geneva: World Health Organization, 1993.

Семиология психогенных неэпилептических припадков

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РЕЗЮМЕ

Несмотря на повышенный интерес исследователей к проблеме психогенных неэпилептических припадков (НЭП), все еще недостаточное внимание уделяется как клинической семиологии пароксизмов, так и психической патологии, скрывающейся за психогенными НЭП. Нами проведён анализ всех случаев психогенных НЭП без сопутствующего неврологического заболевания, верифицированных среди больных, госпитализированных за период с января 2000 по декабрь 2001 года. База данных позволила нам выделить четыре типа припадков: обморокоподобные, демонстративные, возбуждённые и сходные с большими судорожными. Среди обследованных 17 пациентов преобладал диагноз конверсионного расстройства (76,4%), соматизированное и посттравматическое стрессовое отмечались значительно реже (соответственно по 11,8%). Считаем целесообразным проведение среди большого континента больных.

Ключевые слова: *неэпилептические пароксизмы, психиатрические диагнозы, клиническая семиология*