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# Psychogenic Non-Epileptic Seizures: a case report

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Psychogenic Non-Epileptic Seizures (PNES) are paroxysmal episodes of altered behavior that superficially resemble epileptic seizures but lack both the expected electroencephalographical epileptic changes and the association to dysfunction of central nervous system. They account for 17 to 30% of the population admitted to epilepsy units of tertiary hospitals for evaluation of seizures refractory to the pharmacological treatment. These episodes include most of the paroxysmal non-epileptic events and diverse studies have found a high prevalence of multiple psychiatric disorders during the lifetime. The simultaneous presence of 2 or more psychiatric disorders has even been observed in 70% of the patients. When there is evidence on the absence of real epileptic seizures, the first step is to slowly suppress the antiepileptic treatment. After, adequate psychopharmacological treatment should be initiated in relationship with the psychopathological state of the patient. The different emotional and psychological variables that may be affecting the appearance and perpetuation of PNES must be identified and then resolved with psychological treatment.

The aim of the present case report is to present the difficulties of differential diagnosis between epilepsy and PNES, emphasizing the great importance of both neurological and psychiatric management in the treatment of these clinical symptoms.

**Key words:**

Psychogenic non-epileptic seizures, differential diagnosis, co-existence, psychiatric disorders, psychological variables.

*Actas Esp Psiquiatr* 2011;39(3):191-5

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## Crisis No Epilépticas Psicógenas: a propósito de un caso

Las crisis no epilépticas psicógenas (CNEP) son episodios paroxísticos de alteración conductual, que superficialmente parecen crisis epilépticas verdaderas, pero sin los cambios electroencefalográficos esperables ni la asociación a disfunción del sistema nervioso central. Suponen entre un 17 y un 30% de la población atendida en unidades de epilepsia de hospitales de tercer nivel para evaluación de crisis refractarias al tratamiento farmacológico. Estas crisis comprenden la mayoría de eventos paroxísticos no epilépticos y diversos estudios han encontrado una alta prevalencia a lo largo de la vida de múltiples trastornos psiquiátricos, incluso se ha observado la presencia simultánea de 2 o más diagnósticos psiquiátricos en el 70% de los pacientes. Ante la evidencia de ausencia de crisis epilépticas verdaderas, el primer paso es suprimir lentamente el tratamiento anticomitial. Posteriormente se debe iniciar un adecuado tratamiento psicofarmacológico en relación con las alteraciones psicopatológicas que muestre el paciente. Es preciso identificar las diversas variables emocionales y psicológicas que pueden estar incidiendo en la aparición y perpetuación de las CNEP y abordarlas mediante tratamiento psicológico.

El objetivo de presentar este caso clínico es el de plantear las dificultades que suele entrañar el diagnóstico diferencial entre epilepsia y CNEP, destacando la gran importancia del abordaje conjunto, neurológico y psiquiátrico, en el tratamiento de estos cuadros.

**Palabras clave:**

Crisis no epilépticas psicógenas, diagnóstico diferencial, comorbilidad, trastornos psiquiátricos, variables psicológicas.

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## INTRODUCTION

Psychogenic Non-Epileptic Seizures (PNES) are paroxysmal episodes of altered behavior that superficially resemble real epileptic seizures but without the expected electroencephalographical changes or association to central nervous system dysfunction m.<sup>1</sup>

The PNES account for 17% to 30% of the population admitted to epilepsy units of tertiary hospitals for evaluation of seizures refractory to the pharmacological treatment,<sup>2,3</sup> with an estimated prevalence ranging from 1/50,000 to 1/3,000.<sup>4</sup> On the other hand, it has been observed that 10.7% of the patients with PNES also have epileptic seizures.<sup>5,6</sup>

These episodes include most of the non-epileptic paroxysmal events and different studies have found a high prevalence over the lifetime of multiple psychiatric disorders. They have even observed the simultaneous presence of 2 or more psychiatric diagnosis in 70% of the patients.<sup>7-11</sup> Mood state disorders are present in 64%, substance abuse disorders in 42%, post-traumatic stress disorder (PTSD) 49%, other anxiety disorders 47%, and dissociative disorders appear in 91% of these patients in isolated studies.<sup>7</sup> According to the studies, the presence of personality disorders in patients with PNES ranges from 30% to 50%. The most frequent are borderline personality and histrionic disorders.<sup>7,9</sup>

The purpose of presenting this clinical case report is to explain the difficulties that are generally involved in the differential diagnosis between epilepsy and PNES, stressing the great importance of the joint neurological and psychiatric approach in the treatment of these pictures.

## CLINICAL CASE

### Anamnesis

#### *Reason for admission*

A 54-year old woman who was admitted to the Neurology Service due to abnormal limb movements that persisted after several hours of treatment and observation in the Emergency area.

#### *Personal medical backgrounds*

Bacterial meningitis within the context of otitis media in childhood.

Focal and possibly cryptogenic temporal, form of epilepsy, in form of automotor seizures and dialeptic seizures since childhood, under treatment with Phenobarbital 150 mg/day, Diazepam 15 mg/day and Levetiracetam 2500 mg/day. Complementary tests: cerebral MRI and intercritical electroencephalogram -normal. Frequency of seizures: one every 2-3 months. She is being monitored in the Outpatient Clinic of Neurology.

Diagnosed one year ago of bone marrow aplasia, without criteria of severity, of probable pharmacologic origin.

Therefore, treatment has been made with cyclosporine 350 mg/day and corresponding hematologic controls.

There are no other medical-surgical, psychiatric or toxicologic data of interest.

### *Personal biographic and social-laboral backgrounds*

She is the younger of the two siblings. Pregnancy and delivery without complications, psychomotor development within normality. She completed her basic studies without any problems and was well adapted in the school setting. Married and with a 28-year old daughter, she is dedicated to housework and is the principal caregiver of her 91-year old mother-in-law.

#### *Familial backgrounds*

Her older brother has paranoid schizophrenia. Absence of other psychiatric or somatic family history of interest.

### *Current disease*

The patient consulted due to paroxysmal motor phenomena of several days evolution. She had irregular, non-synchronized movements of her head and upper limbs in different directions, of over 5 minute's duration, having great amplitude that accentuated with certain postures.

These were not accompanied by loss of consciousness, relaxation of sphincters or posterior neurological focality. These episodes were totally different from the episodes of disorientations with automatisms that she had previously had.

In the Emergency Service, the tremor abated with the administration of intravenous Diazepam but reoccurred within a few hours, so that her admission to the ward was decided to optimize the drug control and carry out the pertinent complementary examinations.

### **Complementary tests**

- General analyses: leukocytes 2100x10<sup>9</sup>/L; hematocrit 33.2%; MCV 94.3fl; platelets 33 x10<sup>9</sup>/L. Biochemistry and ion profile without significant alterations.
- Brain and cervical CT scan with contrast without normality.
- Prolonged EEG-Video with induction protocol: during registry and according to the protocol, the abnormal

movements observed previously appeared. In the EEG trace, generalized beta background activity was observed with periods of alpha background activity without observable asymmetries. No seizure type electroencephalographic alterations were observed.

## Evolution

Because of the normality of the different examinations, it was ruled out that the episodes causing the admission had a seizure origin. Thus, after readjusting the anti-seizure drug regime, it was decided to refer her for consultation with psychiatry.

Several interviews were performed in which no significant psychopathological alterations were observed. She was collaborative and had good predisposition to explain which was happening. Her speech was fluid and coherent, without alterations in the thought course, form or content. Her mood state was euthymic. No symptoms were observed in the psychotic sphere. She had difficulty falling asleep that improved with low doses of a hypnotic. She explained that she felt overburdened by the care of her mother-in-law and that she received little help from her husband, with whom communication was not very good. She had always given everything helping others and they did not respond in the same way. She felt uncomfortable with the current situation of some defenselessness and of having to take care of others.

Finally, the patient was diagnosed according to the DSM-IV of Conversion Disorder with seizures and convulsions [300.11.5].<sup>12</sup> Four fundamental aspects had been considered: 1) the symptoms were not intentionally produced or under voluntary control, on the contrary to that which occurs in the factitious disorders and in simulation; 2) temporal relationship between the existence of the stressful psychosocial factor and the appearance of the symptoms; 3) all of the complementary examinations made were normal and 4) on the contrary to somatization disorder, the course was more chronic and the symptomatic variability was less. This picture is included within the group of Somatomorphic Disorders and its diagnostic criteria are shown in Table 1.

The absence of a cause of the epileptic episode justifying the picture is communicated. It points towards a psychiatric etiology of the seizures. At the time of discharge (after two weeks of hospitalization), the patient was asymptomatic and did not require psychopharmacological treatment. Up to date, she is being monitored in the outpatient consultations of Neurology and Psychiatry, and no new episodes have been reported.

## DISCUSSION AND CONCLUSIONS

In spite of having attempted to find specific biological markers that make it possible to differentiate between a true epileptic episode and the PNES,<sup>13-15</sup> the clinical

Table 1

### DSM-IV Diagnostic criteria for Conversion disorder [300.11]<sup>12</sup>

A. One or more symptoms or deficits affecting voluntary motor or sensory function that suggest a neurological or other general medical condition.

B. Psychological factors are judged to be associated with the symptom or deficit because the initiation or exacerbation of the symptom or deficit is preceded by conflicts or other stressors

C. The symptom or deficit is not intentionally produced or feigned (as in Factitious Disorder or Malingering)

D. The symptom or deficit cannot, after appropriate investigation, be fully explained by a general medical condition, or by the direct effects of a substance, or as a culturally sanctioned behavior or experience.

E. The symptom or deficit causes clinically significant distress or impairment in social, occupational, or other important areas of functioning or warrants medical evaluation.

F. The symptom or deficit is not limited to pain or sexual dysfunction, does not occur exclusively during the course of Somatoform Disorder, and is not better accounted for by another mental disorder.

Specify the type of symptom or deficit:

- .4 With symptom or motor deficit
- .5 With seizures and convulsions
- .6 With symptom or sensory deficit
- .7 Of mixed presentation

examination (see Table 2) and the EEG video study performed during the seizures<sup>16</sup> continue to be very important to establish a correct differential diagnosis.<sup>1</sup> Even so, most of the cases of PNES are generally very difficult to distinguish from epileptic episodes, even for the most experienced observers.

Once the diagnosis is made with certainty, it should be explained to the patient. It is beneficial to program an information session, explaining the differential diagnosis, psychogenic basis of the seizures and the therapeutic alternatives.<sup>17, 18</sup>

Due to the evidence of absence of true epileptic seizures, the first step is to slowly discontinue the anti-seizure treatment. After, adequate psychopharmacological treatment should be initiated in relationship with the psychopathological alterations detected.

It is necessary to identify the different emotional and psychological variables (personality traits, coping and

Table 2 Differential clinical aspects between epileptic seizures and Psychogenic NonEpileptic Seizures (PNES)<sup>1</sup>

CHARACTERISTICS	PNES	EPILEPTIC SEIZURES
Stereotypical Seizures	It can be variable	Normally stereotypical
Duration	It can be prolonged	Short
Daytime variation	Daytime	Nocturnal or Daytime
Physical harms	Rare	May occur in TC seizure
Tongue biting	Rare	May occur in TC seizure
Urinary incontinence	Rare	Common
Motor Activity	Prolonged, Uncoordinated	Automatisms or coordinated TC seizures
Cyanosis	No	Frequent
Post-ictal confusion	Rare	Frequent
NRL Signs Reflex alteration	No	Frequent
Relation Changes Medication	No relation	Usually related
Inter-ictal EEG	Normal	Frequently altered
Ictal EEG	Normal	Altered
Presence secondary gain	Common	Rare
Psychiatric alterations	Common	Rare

NRL: Neurologic; TC: Tonic-Clonic seizures; EEG: Electroencephalogram

interpersonal relationship style, familial dynamics, etc.) that may be influencing the appearance of perpetuation of the PNESs and approach them with personalized psychological treatment. According to the case, different techniques, from cognitive-behavior to systemic or dynamics, may be necessary.

The interest of an early diagnostic and therapeutic approach is found in that in this way, progressive clinical deterioration would be avoided. This progressive clinical deterioration is manifested in the high incidence of patients with incapacity for work activity and elevated comorbidity of psychiatric disorders, including personality disorders.<sup>7</sup> Furthermore, the delay in the diagnosis of the type of seizure (between 8 and 9 years according to the series<sup>9, 19</sup>) and its correct treatment implies that the disorder will be chronic and a high cost of health care due to the number of admissions by the patients in the Neurology Services.<sup>9</sup>

It can be concluded that patients with conversion-type PNES are a clinically severe population, of difficult diagnosis and therefore, who suffer a long course prior to the initiation of treatment. This causes significant alterations in mental health and in the principal standards established for an acceptable quality of life. The joint collaboration between psychiatrist and neurologists is very important in order to

achieve a favorable course of these patients and avoid pharmacological iatrogeny.

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