

Chapter 14

Diagnosis of psychogenic nonepileptic seizures

CQ 14-1

How are psychogenic nonepileptic seizures differentiated from epileptic seizures?

Summary

- (1) Even in the presence of clinical symptoms suggesting psychogenic nonepileptic seizures (PNES), PNES cannot be diagnosed based on those symptoms alone.
- (2) A diagnosis of PNES can be made by an experienced doctor, who confirms typical PNES semiology without any EEG abnormal findings immediately before, during, and immediately after the seizure in an ictal video-EEG recording.
- (3) However, ictal video-EEG recording may not provide decisive findings for the diagnosis of simple partial seizures and seizures arising from supplementary motor area, orbital frontal cortex, or cingulate gyrus.
- (4) Even if a definite diagnosis of PNES has been established for one of the seizure types in a patient, we should avoid a hasty conclusion that all other seizures are PNES in the same patient.

Comment

Psychogenic non-epileptic seizures (PNES) are paroxysmal psychosomatic symptoms resembling epileptic seizures, which is not explainable by already accepted pathophysiological mechanisms. PNES are found in 5–20% of patients who first visit a hospital for suspected epilepsy, and in 15–30% of patients diagnosed with intractable epilepsy with an indication for surgery¹⁾. The male to female ratio varies depending on the subject population; PNES are female-dominant in patients with neither concomitant mental retardation (intellectual disability) nor epilepsy, but show no definite gender difference in patients with concomitant mental retardation or epilepsy. The frequencies of concomitant mental retardation vary from 17 to 37% depending on report. In PNES with concomitant epileptic seizures or mental retardation, direct inducing factors are often present. Therefore, we should take detailed history of the patient's living conditions and focus on any changes in lifestyle just before the onset of PNES. On the other hand, in PNES with neither concomitant epilepsy nor mental retardation, we should seek advice from psychiatrists and clinical psychologists because the life history such as family relationship is often critical in those patients.

Typical seizure semiology suggesting PNES includes (1) long duration of seizure, (2) fluctuating symptoms during seizure, (3) asynchronous (left-right) body movements, (4) pelvic thrusting, (5) side-to-side swinging of the head and body, (6) closed eyes during seizure, (7) crying during seizure, (8) memory recall of seizure event, (9) no postictal confusion, and (10) seizures appear to occur during sleeping, but EEG findings show an arousal state²⁾.

However, no symptoms can lead to a definite diagnosis on their own, and the above symptoms should be considered as reference findings.

In the case of suspected PNES, we should confirm the diagnosis over time while following the clinical symptoms as well as performing environmental adjustment and psychotherapy.

Urinary incontinence and tongue biting have been reported during seizures in patients with PNES, although the incidence is low³⁾. Therefore, incontinence and tongue biting do not exclude a diagnosis of PNES⁴⁾.

Abnormally high prolactin concentration within 10–20 minutes after the attack indicates the unlikelihood of PNES⁵⁾.

There are four levels of certainty for a diagnosis of PNES, ranging from possible to documented. **Table 1** shows the criteria for the four levels⁵⁾. Descriptions from a witness of seizure or a video of the actual seizure with routine EEG finding lead to a “possible”, “probable” or “clinically established” diagnosis, while a “documented” diagnosis requires visit to a specialized hospital equipped with simultaneous ictal video-EEG recording.

The main purpose of admission for making a definite diagnosis is to record ictal video-EEG. Moreover, the hospitalization also provides medical staff a chance to observe the actual seizures.

In the case of dose reduction or cessation of antiepileptic drugs at the hospital, we should pay attention to the following risks: manifestation of epileptic seizures that have been controlled until the reduction of drugs, withdrawal seizures in patients treated with phenobarbital and benzodiazepines for a certain period, and induction of status epilepticus.

■ References

- 1) Kanemoto K, Fujiwara T, Ikeda A, et al. Diagnosis and treatment guideline for psychogenic non-epileptic seizure (so-called pseudo-seizures). *Tenkan Kenkyu*. 2009; 26(3): 478-482 (in Japanese).
- 2) Avbersek A, Sisodiya S. Does the primary literature provide support for clinical signs used to distinguish psychogenic non-epileptic seizures from epileptic seizures? *J Neurol Neurosurg Psychiatry*. 2010; 81(7): 719-725.
- 3) Oliva M, Pattison C, Carino J et al. The diagnostic value of oral lacerations and incontinence during convulsive "seizures". *Epilepsia*. 2008; 49(6): 962-967.
- 4) Oto M, Conway P, McGonigal A, et al. Gender differences in psychogenic non-epileptic seizure. *Seizure*. 2005; 14(1): 33-39.
- 5) LaFrance WC Jr, Baker GA, Duncan R, et al. Minimum requirements for the diagnosis of psychogenic nonepileptic seizures: a staged approach: a report from the International League Against Epilepsy Nonepileptic Seizures Task Force. *Epilepsia*. 2013; 54(11): 2005-2018.

■ Search formula and secondary reference sources

((((psychogenic AND (nonepileptic OR non-epileptic)) OR PNES) AND (therapy [sh] OR psychotherapy [mh])) Filters: Publication date from 2008/01/01 to 2015/12/31; English; Japanese

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psychogenic seizures

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Table 1. Levels of certainty for diagnosis of PNES.

Diagnostic Level	Source of information	EEG
Possible	By witness or self-reported descriptions	No epileptic activities on routine or sleep-deprived interictal EEG
Probable	Clinician-confirmed semiology typical of PNES by reviewing a video recording or seeing actual attack	As above
Clinically established	Clinician having much experience with epilepsy patients confirmed semiology typical of PNES by reviewing a video recording or seeing actual attack, but not on ictal EEG	No epileptic activities on routine or Holter EEG recorded at the attack with semiology resembling epileptic seizures (epileptic EEG activities would be expected in case of true epileptic seizure)
Documented	Confirmed by clinician having much experience with epilepsy patients on ictal video-EEG	No epileptic activities on video-EEG recorded immediately before, during or immediately after the attack with typical PNES symptoms

(Modified from: LaFrance WC Jr, Baker GA, Duncan R, et al. Minimum requirements for the diagnosis of psychogenic nonepileptic seizures : a staged approach : a report from the International League Against Epilepsy Nonepileptic Seizures Task Force. *Epilepsia*. 2013; 54(11): 2005-2018.)

How are psychogenic nonepileptic seizures treated?

Summary

- (1) The management of psychogenic nonepileptic seizures (PNES) includes: (1) clearly disclose the diagnosis to the patient as a good news, without nuance of condemnation, (2) explain no need for antiepileptic drug, (3) list up the factors that induce seizure and the factors that perpetuate symptoms, (4) offer psychiatric evaluation, (5) implement individual psychotherapy and family psychotherapy, and (6) consider the use of psychotropic drugs in patients with mood disorder, anxiety disorder, and somatization disorder.
- (2) In principle, antiepileptic drugs are tapered and stopped, but this involves risks such as transient deterioration of the psychological state or manifestation of epileptic seizures masked by antiepileptic drugs.
- (3) When associated with mental retardation (intellectual disability), disclose the diagnosis to the patient and the family, and at the same time adjust the social and psychological environments.
- (4) When PNES coexist with true epileptic seizures, explain in detail to the patients and their family which type of seizure is PNES and which type is epileptic seizure.

Comment

- (1) Even in patients with PNES confirmed by ictal video-EEG, all the seizures are not necessarily PNES. Considering this point, we should initially explain it to the patients as follows, “Attacks due to emotional problems, not real epilepsy, may coexist with attacks due to epilepsy”¹⁾.

In an RCT recruiting patients (IQ 70 or above) without coexisting epileptic seizures who had PNES attacks more than twice a month, cognitive behavioral therapy (CBT) for 4 months significantly reduced the seizure frequency with a moderate or greater effect size, and the odds ratio of seizure control for at least 3 months was 3.125²⁾.

In patients who have taken antiepileptic drugs for long periods of time, some feel that epilepsy is their major problem in life because they believe “they cannot get a job due to epilepsy” and “they cannot have children because of epilepsy”. These patients may have severe psychological disturbance due to loss of identity. Negating the diagnosis of epilepsy needs to go hand in hand with formation of new identity.

Showing the data of ictal video-EEG recorded during seizure to the patient and family is often educational and effective. However, care has to be taken not to convey a value judgment that PNES are false seizures. Most of the PNES are not malingering disorders, but are seizures caused by endogenous conflict.

When referring a patient to a psychiatrist, the message to the patient and family has to be carefully worded so as not to be perceived as sending them away from one’s care, such as, “To exclude all possible disorders and to try all possible treatments, let’s also ask the psychiatrist to give us some advice.” It is desirable to follow the patient by both departments for at least a certain period of time.

- (2) In principle, antiepileptic drugs are reduced in dose and stopped³⁾. Particularly at the cessation of drugs, it is necessary to explain in advance to the patient and family about the possibility of emergence of epilepsy seizures controlled by medications so far or appearance of withdrawal syndrome¹⁾.

When the patient and family are very anxious about seizure relapse during dose reduction or cessation of antiepileptic drugs, or when the family has difficulties in coping with urgent situations such as emergency hospital visit, then short-term inpatient treatment is indicated.

If the patient and family request inpatient treatment because they worry about frequent seizures, explain to them that he/she will be hospitalized as a part of psychotherapy in collaboration with the psychiatrist. We should try to prevent long-term hospitalization.

- (3) When the patient has coexisting mental retardation (intellectual disability), explain and disclose the diagnosis to the patient and family and at the same time adjust the psychological and social environments. Full-fledged psychotherapy accompanied by introspection is often difficult to conduct. Listen carefully to the situations leading to PNES, such as loss of parents who protected the patient, big changes in workplace, and human relation at work¹⁾.

Maintain an environment that does not encourage gain from illness, such as getting help from many staff members when seizures occur or admission to a hospital when the patient shows PNES. We should adjust the environment so that the patient can receive appropriate attention and protection even without showing PNES.

Disclosure of PNES coexisting with epileptic seizures is more easily accepted by the patient and family, because the presence of PNES does not entail changes in the basic treatment framework such as transfer to another department and cessation of medications.

- (4) When PNES coexist with true epileptic seizures, explain in detail to the patient and family which type of seizure is PNES and which type is epileptic seizure. For the antiepileptic drugs, reduce the doses and change to monotherapy if possible.

■ References

- 1) Kanemoto K, Fujiwara T, Ikeda A, et al. Diagnosis and treatment guideline for psychogenic non-epileptic seizure (so-called pseudo-seizures). *Tenkan Kenkyu*. 2009; 26(3): 478-482 (in Japanese).
- 2) Goldstein LH, Chalder T, Chigwedere C, et al. Cognitive-behavioral therapy for psychogenic nonepileptic seizures: a pilot RCT. *Neurology*. 2010; 74(24): 1986-1994.
- 3) Kerr MP, Mensah S, Besag F, et al. International consensus clinical practice statements for the treatment of neuropsychiatric conditions associated with epilepsy. *Epilepsia*. 2011; 52(11): 2133-2138.

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