# Presenting the diagnosis of pseudoseizure

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**Article abstract**—Simultaneous video-EEG monitoring has allowed pseudoseizures to be effectively diagnosed. Discussing the results of the monitoring with the patient is the 1st step in treatment. We outline a protocol for presenting the diagnosis of pseudoseizure with the goal of conveying to the patient the importance of knowing the nonepileptic nature of the spells and the need for psychiatric follow-up. The protocol also allows elicitation of a sexual abuse history and the use of suggestion to aid in controlling the pseudoseizures.

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Estimates of the prevalence of pseudoseizures range from 5 to 20% of an outpatient epilepsy population[1-3] with 20 to 30% of those with epileptic spells having concomitant nonepileptic events as well.[1,4,5] Female patients constitute 75 to 80% of those diagnosed with pseudoseizure,[4-6] and 83% of these patients are between ages 15 and 35.[3] Most of the neurology literature on pseudoseizures has concentrated on characterization of these spells.[1,5,6] These descriptions, along with simultaneous video-EEG monitoring,[7] have greatly facilitated the diagnosing of pseudoseizures. Lacking in the literature is any emphasis on the underlying etiologies and management of these patients.

Confronting the patient with the diagnosis of pseudoseizure is often the 1st step in therapeutic management.[1] The manner in which the diagnosis is presented has been only superficially addressed. The style of presentation depends upon the attending physician and varies from direct accusations of malingering to indirect suggestions of mental illness. This results in a spectrum of responses from the patient. The assertive accusations from some physicians usually alienate the patient and nullify the patient-physician relationship. Other physicians, fearful of the patient's adverse response, fail to adequately convey the diagnosis and direct the patient to appropriate therapy.

At the Indiana University Medical Center, we were impressed by how often the patients' medical care disintegrated after the diagnosis of pseudoseizure by simultaneous video-EEG recording. We assumed this might have resulted, in part, from the patients being angered by the manner in which the diagnosis was presented. To address this problem, we sought to develop a protocol for presenting the diagnosis of pseudoseizure. Our goals were (1) to stress to the patient the importance of knowing the nonepileptic nature of their spells, (2) to defuse the tension that may arise because of the nature of the diagnosis, (3) to elicit a possible underlying etiology for the pseudoseizure, (4) to promote compliance with medical and psychiatric follow-up, and (5) to pursue eventual control of the pseudoseizures. This paper is a preliminary report of the protocol we have developed, which appears to approach our objectives.

**Diagnosis of pseudoseizure.** Luther et al[7] demonstrated the effectiveness of a single 3-hour video-EEG recording in the diagnosis of pseudoseizures. Patients are referred to our laboratory for outpatient video/EEG monitoring when their primary caretaker suspects pseudoseizures. If the patient has not been previously seen by 1 of the physicians in our laboratory, a history is obtained from the patient and the family at the beginning of the test. Monitoring is performed for the entire day with the patient's family or friend present in the room to identify the habitual "seizures." As Luther et al also described, if spontaneous spells do not occur, activation procedures (suggestion, hyperventilation, photic stimulation, intravenous saline injection) are utilized in various combinations. The events captured during the all-day monitoring are diagnosed as pseudoseizures according to the following criteria:

1. The clinical events must be confirmed by the patient or witnesses to be typical of the patient's habitual spells. Comment cannot be made concerning habitual spells that have not been captured on monitoring or events not characteristic of the patient's typical "seizure" types.

2. The clinical events should involve either some alteration of consciousness or bilateral motor/sensory phenomenon. Events that may be consistent with simple partial seizures are not securely diagnosed as nonepileptic spells based solely upon lack of associated electrographic change on scalp EEG recording.

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3. The diagnosis of a nonepileptic spell is suggested by a lack of EEG changes during a clinical event that involves alteration of consciousness or bilateral motor/sensory phenomenon. The diagnosis is further supported by (a) presence of waking alpha rhythm during clinical alteration in consciousness; (b) nonparoxysmal or nonstereotypic nature of the events; (c) motor phenomenon that is atypical for epileptic convulsion; and (d) normal background EEG in different physiologic states during the entire day of continuous recording.

**Protocol for presentation of diagnosis.** We present the results of the video-EEG monitoring in detail only if specifically requested by the referring physician or if the patient will be followed long-term by 1 of the physicians in our laboratory. The approach to the patient diagnosed with nonepileptic spells is as follows:

A. The spells. *"First, we would like to show you the spells we have captured."*

- The spells (recorded on video) are shown to the patient as well as the family or companion. Comments are avoided at this time other than to describe the events that the patient and family are witnessing.
- The patient and family (or companion) are asked after the presentation whether these are like the patient's habitual spells, and whether there are other types of spells that have not been captured.
- The patient is asked whether she or he has any recall of the events during these spells.

B. Good news. *"The good news is that these spells are not epileptic in origin. They are not a result of brain damage with the brain firing out of control."*

- How this conclusion is arrived at is explained to the patient (ie, during these spells the EEG does not show any changes to suggest seizure activity).
- The results of the entire day's interictal EEG recording are also presented.
- At this point, the patient's unspoken or spoken response is usually, "Well, if these are not epileptic spells, what *are* they?"

C. Bad news. *"The bad news is that at this time we cannot tell you exactly what these spells are."*

1. *"However, knowing what they are not is as important as knowing what they are. Because these are not epileptic in origin, (a) they will not respond to antiepileptic medications; (b) continued or additional trials of anticonvulsants may produce medication side effects while providing no benefit; and (c) physicians assuming these to be epileptic seizures* [especially with presumed status epilepticus] *could institute treatment that could result in significant morbidity or death."*

2. *"We may* never *know what these spells are* [relieves physician of the expectation to be *always immediately all-knowing*], *but that does not mean we cannot continue to work together on these problems"* [maintains physician-patient relationship].

D. Seek psychiatrist. *"In most patients with spells like these we eventually discover that the causes are related to upsetting emotions of which the patient is not aware* [can give example of physiologic response of hand sweating when a person is nervous or anxious.] *This may be best addressed by a psychiatrist, psychologist, or a counselor—people with expertise in emotional factors."*

- At this point, patients usually begin to become defensive or upset.

E. Not "crazy." *"This is not to say we think you are crazy* [may add "or doing these things on purpose" if no obvious evidence for malingering]. *These spells usually occur on a subconscious level."*

- If the patient is not overtly psychotic or with obvious psychiatric illness, these aspects may be conveyed to the patient to emphasize that the physician does not consider the patient crazy.
- Physician may share with the patient that, when progress is made in counseling, the control over the nonepileptic spells improves concomitantly. However, progress may not be immediate with counseling.
- It should be conveyed to the patient that the attending physician will continue to follow the patient along with the psychiatrist in case new developments in the future need to be addressed.

F. Sexual abuse? *"We do not want to jump to conclusions, but in some patients we eventually discover a history of sexual abuse that may be related to these spells. Is there any such history in your case?"*

- This may need to be pursued with the patient individually, without other family members or friends present.

G. Power of suggestion. *"These spells may spontaneously resolve on their own with time. Although 1 component is subconscious in nature, one can exert a conscious voluntary effort to abort these attacks."*

- Physician may give some helpful hints:

1. If there is a warning to the spell, suggest that with onset of warning the patient (a) make a voluntary effort to "fight off" the spell; (b) concentrate on breathing slowly; (c) perform any maneuver that allows patient to exert control.

2. If no warning, (a) patient may say to herself or himself each morning, "I am not going to have any attacks today"; (b) again, any maneuver may be performed that allows patient a sense of control.

*"A few more spells may occur before you can completely control them. You should not be discouraged if progress is not immediate."*

- Emphasize to the patient the importance of maintaining a positive attitude and outlook.

**Discussion.** The prevalence of pseudoseizures has been estimated to be greater than 10% of the epilepsy clinic population.[1] Much of the neurology literature on pseudoseizures has concentrated on characterizing the nonepileptic events without emphasizing a systematic approach to the patient after the diagnosis is made.

The 1st step in management, after diagnosis, is presentation of "the diagnosis" to the patients and their families. How this is accomplished depends on the individual physician. It may vary from accusations of voluntary malingering to implications that the patient is hysterical. Patients usually respond adversely to the suggestion that they either are "faking it" or are "crazy." Physicians do not like to be

**Table. Patients presented with the diagnosis of pseudoseizure**

| Pt | Age | Accepts DX | Sexual abuse? | Sought psychiatrist | Follow-up | Result |
|---|---|---|---|---|---|---|
| Au.S. | 33 | Yes | Incest | Yes | 13 mos | Temporary improvement* |
| J.P. | 21 | Yes | Incest | Yes | 11 mos | Temporary improvement* |
| C.K. | 36 | Yes | Incest | Yes | 11 mos | No pseudoseizures† |
| H.H. | 15 | Yes | Raped | Yes | 10 mos | Occasional spell |
| B.M. | 49 | Yes | Denied | Yes | 8 mos | No pseudoseizures‡ |
| J.J. | 20 | Yes | Raped | Yes | 3 mos | No pseudoseizures† |
| An.S. | 31 | Yes | Raped | Yes | 1 mo | Improving‡ |
| L.D. | 23 | Yes | Denied | No | 1 mo | No pseudoseizures‡ |

* Significantly handicapped by psychosocial issues.
† Doing quite well overall.
‡ Able to exert voluntary control to abort attacks.

placed in the uncomfortable position of having to explain what these spells are if they are not seizures. Yet, the initial approach to the patient after diagnosis may be crucial in determining the ultimate course of treatment.

At our institution we have developed the above protocol to systematize our initial approach to the patient and to address some of the difficulties inherent in presenting a diagnosis of pseudoseizure. Our main purpose was to accurately convey the nonepileptic nature of the spells to the patients without alienating them in the process.

The 1st step of presenting the spells (on video) to patients and their families allows (1) the patients to view their actions during the spells, (2) the families to confirm that we have captured the patients' habitual spells, and (3) the physician to later explain how the nonepileptic nature of the spells is determined with the concomitant EEG recording.

The 2nd step, presenting the nonepileptic nature of the spells as "good news," allows the patient to recognize this as an important negative finding that should be viewed as progress in the evaluation process and not a setback in the search for a cause of these spells. The patient should be informed of the importance of knowing that these are not epileptic seizures and that, relatively speaking, it *is* good news.

The next step, of "bad news," is an honest statement that, at the time of diagnosis, the specific underlying etiology of the spells is often not immediately apparent. It relieves the physician of the unrealistic expectation to be immediately all-knowing, but conveys continued interest in the patients' care.

The goal of the next 2 steps is to direct the patient to psychiatric care while defusing the tension that may arise from this recommendation. In patients without overt psychiatric illness, it is not difficult to provide reassurance that the physician does not consider them crazy. Those with overt psychiatric symptoms have usually been exposed to psychiatric intervention in the past and are able to view this recommendation as an extension of their previous psychiatric care.

Assuring continued medical care by the attending physician avoids their feeling abandoned into the sole care of a psychiatrist. Often the cause of the pseudoseizure is revealed to the treating physician instead of the psychiatrist. However, the psychiatrist should be available to address possible long-term emotional adjustment issues. A 5-year follow-up of patients with pseudoseizure has revealed that the major disability in 80% was related to psychosocial issues rather than the pseudoseizures themselves.[4]

Detailed review of the literature indicates that sexual abuse and incest are frequently noted in patients with pseudoseizures.[6,8,9] Histories of sexual abuse are almost never offered upon routine history-taking and, on some occasions, are initially denied upon specific questioning. However, the neutral manner in which the sexual abuse history is elicited in our protocol and presented in the context of searching for a possible cause of the documented pseudoseizure has frequently allowed a history of rape or incest to be reported.

Patients with pseudoseizures are highly suggestible. This trait has been exploited successfully with induction of the nonepileptic events by suggestion in association with maneuvers varying from vibrating tuning forks placed on the forehead[2] to intravenous saline injection.[10] This suggestibility is exploited in the last step of our protocol, to help in the superficial management of the spells themselves. This has been successful in some of our patients.

Preliminary assessment of our protocol suggests that it approaches our goals. Eight patients personally followed by 1 of the authors (W.S.) are briefly described in the table. In general, the patients were able to accept the nonepileptic nature of the spells and comply with psychiatric referral. To our surprise, a history of sexual abuse is eventually discovered in many patients when they and their families have been sensitized to this possibility. The majority experience an immediate reduction of the pseudoseizures after the diagnosis is conveyed and abortive maneuvers are encouraged. However, psychosocial issues continue to significantly handicap many of the patients upon long-term follow-up, and in some the pseudoseizures recur.

**Summary.** The comprehensive management of patients with pseudoseizures often requires an individualized approach. Treatment modalities include psychotherapy, hypnotherapy, and family therapy.[1,9,11] However, the therapeutic process begins with confronting the patient with the nonepileptic nature of the spells. The method of presenting the diagnosis will differ from one physician to another. We report in detail 1 approach we have utilized and found helpful with our patient population. These guidelines may be beneficial for other physicians who have not developed their own approach or who feel uncomfortable with the process. Whether our approach alters the long-term outcome of the patients requires further study.

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# Trigeminal sensory neuropathy associated with decreased oral sensation and impairment of the masseter inhibitory reflex

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**Article abstract**—We describe 4 patients with severe trigeminal sensory neuropathy whose main disability resulted from impaired intraoral sensation associated with disturbances of mastication and swallowing. Each patient had an abnormal blink reflex and jaw jerk. In addition, the masseter inhibitory reflex was absent in 3 patients and abnormal in the 4th. This reflex plays a role in the reflex control of mastication and can easily be elicited in normal subjects by stimulation of the skin and mucous membrane in the distribution of the 2nd and 3rd divisions of the trigeminal nerve while the jaw-closing muscles are contracting. Disturbed intraoral sensation combined with impaired trigeminal reflexes (particularly the masseter inhibitory reflex) interferes with neural mechanisms that regulate chewing and can be a source of severe disability in patients with trigeminal sensory neuropathy.

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Trigeminal sensory neuropathy (TSN) may be seen in association with connective tissue diseases, including scleroderma, Sjögren's syndrome, mixed connective tissue disease, and, rarely, lupus erythematosus and dermatomyositis.[1-10] In many cases it may represent the initial manifestation of the underlying disease. It may also occur in the absence of a detectable systemic illness, but, even in this group of patients, autoantibodies are often found.[9] We encountered 4 patients with severe TSN who had marked impairment of intraoral sensation and whose main disability resulted from impaired mastication. In addition, swallowing was impaired and speech was distorted secondary to the sensory deficit. In order to gain a better understanding of disturbed function in these patients, electrophysiologic studies of the trigeminal nerve were conducted. These included mea-

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