Lessons from practice

Minimising harm: avoiding intubation for psychogenic non-epileptic seizures

Clinical record

A 25-year-old man presented to the emergency department of a tertiary hospital following a seizure. His past medical history included epilepsy, for which he was taking levetiracetam 1000 mg and valproate 1000 mg, each twice daily.

While the patient was in the department, an emergency code was activated by nursing staff. On review, he was unresponsive, with waxing and waning bilateral upper and lower limb low amplitude movements. During these movements, his eyes were closed and intermittent eyelid fluttering was present. The movements continued beyond five minutes, and the treating medical officer considered whether there was a role for benzodiazepines, antiseizure medications, or intubation. A safe, calm environment was maintained, and no additional medications were administered. The movements ceased after ten minutes and the patient quickly returned to a normal level of responsiveness.

Discussion

Psychogenic non-epileptic seizures (PNES) are a common form of functional neurological disorder, which can at times mimic generalised convulsive status epilepticus (GCSE). PNES are also referred to as functional seizures, psychogenic non-epileptic attacks, non-epileptic seizures, and, formerly, pseudoseizures. The management of PNES is different from that of GCSE. If an individual with PNES erroneously receives treatment for GCSE, there is the potential to cause harm. In an influential status epilepticus trial, 8.1% of patients had a discharge diagnosis of PNES, some of whom suffered adverse effects from non-indicated treatment.[1] This risk is particularly evident for invasive procedures, such as intubation.

When considering PNES and GCSE, positive history and physical examination findings are fundamental to a diagnosis of PNES. Similar to functional unresponsiveness,[2] positive physical examination findings may enable a confident diagnosis (Box), as summarised elsewhere.[3,4] The highest level of certainty in the diagnosis of PNES is achieved through recording episodes on video electroencephalogram, in the setting of a consistent history. However, such an investigation is typically not readily available in emergency settings, highlighting the importance of the clinical evaluation. First line management of patients with PNES involves ensuring the patient is safe, psychoeducation, and reassurance, all of which should be undertaken in a sensitive and deliberate manner. Strategies to guide such discussions have been described previously.[4]

Patients experiencing PNES do not require benzodiazepines, antiseizure medications, or intubation for this condition. Aggressive

Overview of clinical features of psychogenic non-epileptic seizures compared with generalised convulsive epileptic seizures[2,3,5]

Clinical feature	Psychogenic non-epileptic seizures	Generalised convulsive epileptic seizures*
Onset and course	• Often gradual onset, although may be sudden onset • Fluctuating/undulating/waxing and waning course typical	• Sudden onset • May have multiple discrete seizures, but fluctuating/undulating course not supportive
Duration of event(s)	• Often > 2 minutes	• Usually < 2 minutes
Evidence of awareness	• May be present; examples include responding to external stimuli during episode (eg, responding to questions/commands) or intact recall from time during episode	• Absent
Semiology of abnormal movements	• Eyes often closed, although may be open • Asynchronous movements of left and right limbs may occur, although may also be synchronous • Eyelid fluttering • Side-to-side head movements may occur • Arc de cercle (opisthotonos) may occur • Pelvic thrusting may occur	• Eyes usually open • Synchronous movements of left and right limbs • No eyelid fluttering • Side-to-side head movements not consistent with bilateral tonic–clonic seizures • No arc de cercle (although may occur rarely in focal seizures) • Pelvic thrusting not consistent with bilateral tonic–clonic seizures (although may occur with frontal lobe seizures, which are rare)
Associated information	• Information including marked elevations in lactate, creatine kinase and prolactin may be considered supportive of generalised convulsive epileptic seizures; however, these laboratory tests may also be elevated in psychogenic non-epileptic seizures	

* Note, the table describes generalised convulsive epileptic seizures, not non-convulsive status epilepticus or focal seizures. ◆

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benzodiazepine treatment has been associated with intubation for PNES.[5] Intubation for PNES has been found to be associated with worsened inpatient outcomes, including prolonged length of stay.[5] There is also evidence that those with PNES who are intubated experience worse long term outcomes, with higher numbers of subsequent PNES-related hospitalisations.[5] Death in the setting of attempted intubation due to failure to recognise PNES has been described.[6]

A possible reason that patients may receive inappropriate treatments for PNES is the thought that, when there is diagnostic uncertainty with respect to the aetiology of involuntary movements, treating as for GCSE is the lowest risk strategy. It is true that there may be cases in which PNES is difficult to distinguish from epileptic seizures, resulting in diagnostic uncertainty. For example, this difficulty may occur in some patients with both epilepsy and PNES, with reported prevalence of PNES in patients with epilepsy of 3.4–29%.[3] When considering the benefits and risks of a management plan in the setting of diagnostic uncertainty, the relative risks of sustained GCSE should be considered, compared with those of sustained focal status epilepticus (either with intact awareness or with impaired awareness) and non-convulsive status epilepticus. Focal status epilepticus and non-convulsive status epilepticus can often be managed successfully without requiring anaesthetic agents and intubation.

However, patients with PNES may still require intubation for routine indications. For example, concurrent toxic ingestion resulting in impaired airway protective reflexes would still require intubation, irrespective of the presence or absence of PNES. This consideration is salient, as there is a high frequency of psychiatric comorbidity in patients with PNES.[3]

PNES is an important diagnosis that should be proactively considered in patients presenting with abnormal involuntary movements resembling seizures. The management of patients with PNES is different from that of those with GCSE. Inappropriate management of patients with PNES, such as unnecessary intubation, is associated with harm. By avoiding these non-indicated interventions, we can work towards better outcomes for these unwell patients. Given the potential iatrogenic harm associated with inappropriate treatment of PNES, we strongly recommend sufficient training in recognition of the positive clinical features of PNES.

Lessons from practice

- Positive history and examination findings can often distinguish psychogenic non-epileptic seizures (PNES) from epileptic seizures.
- PNES should not be managed with benzodiazepines, antiseizure medications, or intubation.
- Unnecessary intubation for PNES should be avoided.

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