Psychogenic Non-epileptic Seizures

**DEFINITION**

The definition of a psychogenic non-epileptic seizure (PNES) is an event with an observable and abrupt paroxysmal change in consciousness and/or behaviour resembling an epileptic seizure, but not associated with the electrophysiological changes seen with an epileptic seizure.\(^1\)

Recognition of PNES as non-epileptic is essential, as incorrect diagnosis of epilepsy brings with it unnecessary investigations and use of anti-epileptic medication.\(^2\)

**Terminology:**

Terminology used to describe PNES has changed over time and continues to vary in published studies.\(^2\)

Common terms include:

- Pseudoseizure
- Psychogenic seizure
- Non-epileptic seizure (NES)
- Psychogenic non-epileptic seizure (PNES)

The term ‘PNES’ is frequently used by clinicians, and both PNES and ‘psychogenic seizure’ currently dominate the medical literature.\(^2\) However, when communicating with patients and families the term ‘non-epileptic seizure’ is most commonly used. Clinicians need to be highly sensitive regarding terminology, as some terms are considered pejorative.\(^3\) For example, ‘pseudoseizure’, ‘symptoms in the mind’ and ‘hysterical seizure’ can be considered highly offensive by patients. Whereas, ‘stress-related seizures’, ‘functional seizures’ or ‘non-epileptic seizures’ are seen as less offensive.

**DEMOGRAPHICS**

**Prevalence:** A recent study found 4.8% (27/568) of their sample of children undergoing video EEG-telemetry to have PNES. However, prevalence is difficult to establish due to methodological differences between studies and a lack of population-based data. Literature estimates vary between 1% and 9%.\(^5\)

**Age of Onset:** PNES can occur in children as young as 5 years of age,\(^2\) the majority, however, will have onset in adolescence.\(^4\)

**Sex:** Approximately two-thirds of children with PNES are female.\(^1\) However, this gender distinction may only be apparent in adolescence.\(^3\)

**Aetiology:** PNES have an underlying psychological origin.\(^5\) Most common stressors include school related difficulties, family/interpersonal conflict, and physical/sexual abuse.\(^2\)

**SYMPTOMS AND SIGNS**

**Manifestation/Semiology:**

PNES and epileptic seizures can share similar features, such as convulsions and/or alteration to consciousness and changes in behaviour.\(^6\) This can make differentiation between the two difficult. PNES can include a broad range of clinical presentations and there is no one clinical feature that is absolutely diagnostic. One must analyse the event as a whole and not base diagnosis on one isolated feature. In general, PNES events are long and signs may fluctuate. The patient is not compromised and events never occur from sleep.
A comprehensive description is provided by Szabó et al. who analysed 75 events in 27 children. The study emphasised that events are usually long compared to seizures. They are often characterised by apparent unresponsiveness or excessive and flagrant motor activity and communication and emotional expression may be seen in PNES. Further details of the study include:

- Mean duration of PNES (4.5mins) was longer compared to seizures (1.5mins)
- Abrupt start (80%); abrupt finish (68%)
- Eyes closed at onset (15%); eyes closed during entire event (22%)
- Unresponsiveness (34%)
- Most frequent motor sign was tremor in the upper limbs (25%)
- Pelvic thrusting was only seen in 2 events
- Non-verbal communication (16%), verbal communication (32%)
- Emotional signs included weeping, whimpering or crying (43%).

Other childhood studies commonly classify events into two groups: unresponsive (and/or subtle motor events) and motor events. Unresponsiveness/subtle motor are more likely in younger children; whereas, prominent motor activity is more likely in older children.

Clues to PNES:
Other observations regarding semiology include:

- The eyes are usually wide open in 90% of patients during the tonic phase of a generalised tonic-clonic seizure; whereas, in PNES there is sustained, forceful eye closure with active opposition to opening
- Weeping is extremely rare but a true ictal phenomenon in epileptic seizures; whereas, in PNES it is usually demonstrated during or immediately following an event. Post-PNES, the child may also smile or laugh.

Co-Diagnosis with Epilepsy:
This is a common phenomenon and necessitates careful analysis of all event types. One reason a patient may be 'intractable' is the presence of PNES. Studies show that concurrent or past diagnosis with epilepsy in children ranges from 25% to 33%.

Psychiatric Features of PNES:
The study below of 34 patients (9-18 years) illustrates the breadth of comorbidity:

- Severe family stresses 44%
- History of sexual abuse 32%
- Mood disorders 32%
- Separation anxiety (incl. school refusal) 24%
- Personality disorders 12%
- Brief reactive psychoses 6%

INVESTIGATIONS/DIAGNOSIS

Useful Pointers:

- Take a comprehensive history from multiple sources.
- Interview the child/teenager and family separately.
- Take a psychosocial history looking specifically at traumatic life events and family stress.
- A home or mobile phone video to capture the event is valuable and may avoid the need for video-EEG.
- Use of common provocative techniques to elicit an event can also be used, including suggestion, hyperventilation and photic stimulation.
- Video-EEG recording can be used if there is diagnostic doubt or as a tool to explain to the family that the event is not epileptic.
DIFFERENTIAL DIAGNOSIS

Diagnosis of PNES currently relies on the exclusion of epilepsy. Similar features include:
- Frontal lobe epilepsy (FLE) may be accompanied by pelvic thrusting, vocalisations, thrashing movements and minimal post-ictal recovery times, similar to PNES.
- The EEG may be normal in FLE and simple partial seizures.

True seizures and PNES commonly co-exist, it is therefore essential to assess changes in semiology. It is important to always consider PNES in the differential diagnosis of epilepsy, particularly for the ‘refractory’ patient. It is estimated that 10-50% of patients with refractory epilepsy have PNES or a combination of PNES and epilepsy.

MANAGEMENT

To date there is a lack of guidelines and evidence-based treatment for PNES. General recommendations for management include:
- It is most important to determine the event is not epileptic and to avoid the use of anti-epileptic medication for PNES
- It is critical to convey clearly to the child and family that events are real and not faked, and that they have a psychogenic basis, including an explanation of the role of stress or emotional factors in precipitating events (this may take time and repeated reviews to reach this point)
- The rationale for a psychological rather than a medical approach to management should be made clear.

PROGNOSIS

To date there is a paucity of systematic studies of interventions for children with PNES. Limited literature suggests that some children with PNES experience significant reduction or freedom from events post-diagnosis. The available data shows between 18% and 72% are free of events at follow-up. Better prognosis may be related to shorted duration of symptoms and early diagnosis and treatment.

PHILOSOPHY OF TREATMENT APPROACH

The major take-home message is to not get caught up in what one calls the event. The important point is that something can be done about it. It is not helpful to continue to dwell on the event. What is essential to know is; ‘What is it like to be in the patient’s shoes in the patient’s home’. The first treatment goal is to ensure acceptance of the diagnosis by the family and acknowledgement that PNES is not epilepsy. Involvement of a mental health professional is highly recommended, but continued involvement from a neurologist or general paediatrician should occur in order to ensure that epilepsy has not been missed.

There are no controlled intervention studies investigating treatment in PNES in the paediatric population, but some descriptive studies suggest that psychotherapy, family counselling, reduction of secondary gain if functional impairment, normalising the child’s activities, and school support for those with academic problems can be effective treatments for children with PNES.

TAKE HOME MESSAGES:
- Be clear that it is a diagnosis of PNES and therefore anti-epileptic medication is not helpful and potentially harmful.
- Emphasise that this is not epilepsy – this needs to be explained carefully to parents.
- Avoid labels; rather, speak of a mind/body interaction, a stress response where the mind is overwhelmed and the body shuts down.
- Seek a clear understanding of the symptoms and secondary gains.
- Avoid reinforcement and entrenchment.
- Emphasise strategies of coping in the patient’s environment.
- Always consider that PNES may coexist with epileptic seizures and may be the reason why the patient is refractory.
- Include psychological management in any treatment plan.
REFERENCES