of choice. If heart failure persists even after pacemaker implantation and children who have serious internal systemic manifestations, may be treated with systemic steroid(2,3). As many as 8.3% cases of NLE may progress to systemic lupus erythematosus (SLE) in later childhood(6).

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Psychogenic Non-Epileptic Seizures

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Psychogenic non-epileptic seizures (PNES) need to be differentiated from epileptic seizures as the management varies for both. Presence of tongue biting, falling and urinary incontinence favors a diagnosis of epileptic seizures. We report two children with features suggestive of epileptic seizures that were eventually diagnosed as PNES with the help of video-EEG monitoring.

Key words: Epilepsy, Psychogenic non-epileptic seizures.

Psychogenic non-epileptic seizures (PNES) are usually differentiated from epileptic seizures on the basis of absence of tongue biting, falling, incontinence, post-ictal phenomena and concomitant abnormalities on the electroencephalogram (EEG)(1,2). It is important to make an early diagnosis of PNES as a delay in diagnosis leads to overtreatment including polytherapy, repeated hospitalization, poor response to treatment, and mechanical ventilation(3,4). However, PNES are frequently misdiagnosed as epileptic seizures and delays in diagnosis are
common(1). This is mainly due to the presence of clinical features thought to be typical of epileptic seizures among those with PNES.

**Case Reports**

*Case 1:* A 12-year-old child was brought with repeated episodes of “seizures” of four years duration. The episodes were characterized by tonic-clonic movements of all four limbs associated with blinking of eyes. The child was “unresponsive” and had urinary incontinence during each of the episodes. There was no history of tongue biting, falling or sustaining injuries. The child had 8-10 episodes per day and there were no episodes during nights. Though majority of episodes occurred in front of others, a few occurred when none was around. He was previously treated with various antiepileptic drugs and was on maximum therapeutic doses of phenytoin, carbamazepine and clobazam at presentation. Clinical examination was normal. MRI scan of the brain and EEG were normal. Video-EEG monitoring showed that the child’s attacks were non-epileptic in origin as during the attacks, he would stand up and jerk his limbs in a bizarre fashion and pass urine. He would maintain eye contact but would not answer questions. The episode would last for about 5-30 minutes and concomitant EEG recording was normal except for movement artifacts. A psychiatric evaluation revealed the presence of learning disability and over-expectation from parents. Both parents and the child were counseled and antiepileptic drugs were gradually withdrawn. The child became seizure-free four weeks after starting treatment and remains well at the last follow up after two years.

*Case 2:* A seven-year-old boy presented with episodic jerking movements of limbs associated with unresponsiveness of two-year duration. During the attacks, the child would gradually slump to the ground and start violent jerking of hands and legs with thrusting movements. He would also produce bizarre incomprehensible sounds. These would persist for 15-20 minutes and would occur 2-3 times per week. Birth and development were normal. He was studying in second standard and was doing well in studies. There was no family history of seizures. Neurological examination was normal. MRI of the brain and EEG were normal. He was referred to us as “seizures” were uncontrolled on maximum therapeutic doses of sodium valproate and lamotrigine. Episodes were witnessed during video-EEG monitoring and they were suggestive of non-epileptic seizures as the child would avoid all possibilities of getting hurt and he would hold his hands in air if they were lifted and let drop by the examiner. Further questioning of parents revealed that the child suffered from chronic constipation and would pass stools once in 7-10 days. Extensive investigations by gastroenterologists for the same were normal. At this stage, psychiatrist saw him and it was found that the child felt extremely embarrassed to go to toilet and pass stools, especially in school. He learnt to habitually constipate himself. The urge to pass stools were constantly suppressed and resulted in NES. He was adequately counseled and showed a marked improvement in frequency of attacks.

**Discussion**

Psychogenic nonepileptic seizures (PNES) are episodes of altered movement, sensation, or experience similar to those due to epilepsy but caused by a psychogenic process and not associated with abnormal electrical discharges in the brain(5). “Pseudoseizures” as a term is better avoided as it attempts to deny the validity of the events altogether. PNES are common in children and
adolescents. The prevalence of PNES has been estimated to be between 2-33 per 100,000 population(6). Moreover, about 25% of neurologically normal patients and up to 60% of children with mental retardation referred for evaluation of seizures have PNES(7). PNES also accounts for about 20% of cases referred for evaluation of refractory epilepsy(8).

Although PNES are common, a significant delay often occurs prior to their diagnosis. The mean time-lapse between the first attack and PNES diagnosis has been found to range from 7.2 years(9) to 8.7 years(1). In our cases, the diagnosis was made after a delay of four and two years respectively. The reasons for a delayed diagnosis are manifold. Presence of clinical signs typically associated with epileptic seizures (such as tongue biting, falling, incontinence) is thought to be against a diagnosis of PNES. However, in a recent study(1), at least one of these signs was reported by 66% of patients finally diagnosed to have PNES. One of our patients too had urinary incontinence during most of the attacks. Interictal EEG abnormality is also thought to be a factor supporting a diagnosis of epilepsy; however, about 16% of patients finally diagnosed to have PNES had interictal EEG abnormalities(1). Delayed diagnosis of PNES hampers child’s education and poses an undue economic burden on families. A diagnosis of PNES should be suspected in children with uncontrolled seizures, atypical clinical presentation, learning disability, mental retardation and history of physical or sexual abuse. Video-EEG monitoring is extremely useful in making an early diagnosis(10). An encouraging point to note is that the outcome of children with PNES after treatment is better than that of adults, perhaps because causes are more likely to be external to the child, more easily identified, and more amenable to prompt intervention(11).

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