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).

Acknowledgement

We thank Dr. Sharmila Mishra, Department of Pathology, ICMR, Delhi for reviewing the skin biopsy.

Contributors: NA, PP worked up the case, reviewed the literature and drafted the article. RM planned the management; PP will act as the guarantor.

Funding: None

REFERENCES

1. McCuiston CH, Schoch Jr EP. Possible discoid lupus erythematosu in a newborn infant. Arch Dermatol Syph 1954; 70: 781-785.
2. Lee LA Frank MB, Victoria R, McCubins Reichlin M. Auto antibodies of Neonatal Lupus Erythematosus. J Invest Dermatol 1994; 102: 963-966.
3. Lee LA, Neonatal Lupus Erythromatosus. J Invest Dermatol 1993; 100: 9S- 13S.
4. Crowley E, Frieden IJ, Neonatal lupus erythematosus: An unusual congenital presentation with cutaneous atrophy, erosions, alopecia and pancytopenia. Pediatr Dermatol 1998; 15: 38-42.
5. Maynard B, Leiferman KM, Peters MS. Neonatal lupus erythematosus Syndrome. J Cutan Pathol 1991: 18: 333-338.
6. Jenkins RE, Kurwa AR, Atherton DJ, Black MM. Neonatal lupus erythematosus. Clin and Exp Dermatol1994; 19: 409-411.

Psychogenic Non-Epileptic Seizures

S. Kumar

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.*

From the Neurology Unit, Department of Neurological Sciences, Christian Medical College Hospital, Vellore, Tamilnadu- 632 004, India.

Correspondence to: Dr. Sudhir Kumar, Consultant Neurologist, Department of Neurological Sciences, Christian Medical College Hospital, Vellore, Tamilnadu, India-632 004.
E-mail: drsudhirkumar@yahoo.com

Manuscript received: January 21, 2004;
Initial review completed: February 27, 2004.
Revision accepted: March 24, 2004.

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 upto 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).

Funding: None.

Competing interests: None.

REFERENCES

1. de Timary P, Fouchet P, Sylin M, Indriets JP, de Barsy T, Lefebvre A, *et al.* Non-epileptic seizures: delayed diagnosis in patients presenting with electroencephalographic (EEG) or clinical signs of epileptic seizures. Seizure 2002; 11:193-197.
2. Tamer SK. The pediatric non-epileptic seizure. Indian J Pediatr 1997; 64:671-676.
3. Tuxhorn IE, Fischbach HS. Pseudostatus epilepticus in childhood. Pediatr Neurol 2002; 27: 407-409.
4. Holmes GL. Overtreatment in children with epilepsy. Epilepsy Res 2002; 52: 35-42.
5. Lesser RP. Psychogenic seizures. Neurology . 1996; 46: 1499-1507.
6. Benbadis SR, Allen Hauser W. An estimate of the prevalence of psychogenic non-epileptic seizures. Seizure 2000; 9: 280-281.
7. Paolicchi JM. The spectrum of nonepileptic events in children. Epilepsia 2002; 43 Suppl 3: 60-64.
8. Wada JA. Differential diagnosis of epilepsy. Electroencephalogr Clin Neurophysiol Suppl 1985; 37: 285-311.
9. Reuber M, Fernandez G, Bauer J, Helmstaedter C, Elger CE. Diagnostic delay in psychogenic nonepileptic seizures. Neurology 2002; 58: 493-495.
10. Bhatia M, Sinha PK, Jain S, Padma MV, Maheshwari MC. Usefulness of short-term video EEG recording with saline induction in pseudoseizures. Acta Neurol Scand 1997; 95: 363-366.
11. Irwin K, Edwards M, Robinson R. Psychogenic non-epileptic seizures: management and prognosis. Arch Dis Child 2000; 82: 474-478.