

# Unusual presentations of reflex epilepsy in psychiatric practice: A case series

Kuruppuarachchi KALA<sup>1</sup>, Kapugama KGCL<sup>2</sup>, Wijesinghe CA<sup>3</sup>

<sup>1</sup> Senior Professor of Psychiatry, University of Kelaniya, Sri Lanka.

<sup>2</sup> Senior Registrar in Psychiatry, Colombo North Teaching Hospital, Ragama, Sri Lanka.

<sup>3</sup> Lecturer in Psychiatry, University of Kelaniya, Sri Lanka.

## Introduction

Reflex seizures have various definitions. According to one well accepted definition, they are a 'collection of different seizure types distinguished by their ability to be precipitated by a specific stimulus' (Ritaccio, 1994). A proposed diagnostic scheme for people with epilepsy and epileptic seizures by the International League Against Epilepsy (ILAE) Task Force Report on Classification and Terminology, reflex epilepsies are regarded as a syndrome in which all seizures are precipitated by sensory stimuli. Further, it proposes the inclusion of reflex seizures that occur in focal and generalized epilepsy syndromes under the rubric of seizure types in order to facilitate the understanding of the aetiology and improve the therapeutic approach (Engel, 2001). In the majority of patients with reflex epilepsy, seizures are precipitated by either internal stimuli such as fatigue, sleep and stress or external stimuli such as visual cues, reading, heat, eating and bathing. Sometimes the precipitants may be quite exotic. Visually provoked seizures account for 5% of the total 6% of reflex seizures. Visual stimuli may include television, disco lights and video games (Kasteleijn-Nolst Trenité, 2012).

The term 'reflex epilepsy' has attracted criticism since no specific reflexes are involved in this phenomenon. An alternative term 'sensory precipitation epilepsy' also has drawbacks as some of the seizures are precipitated by stimuli such as mental arithmetic, which has no sensory component (Senanayake, 1998).

Clinical categories of reflex epilepsies are pure reflex epilepsies, reflex seizures that occur in generalized or focal epilepsy syndromes (that are also associated with spontaneous seizures), and

isolated reflex seizures manifesting in circumstances that do not necessarily need a diagnosis of epilepsy (Xue & Ritaccio, 2006).

Sometimes patients with reflex epilepsy expose themselves to the triggering stimuli and induce seizures, which may be an important aspect to consider in patients with poor seizure control. Most self-inducers are people with photosensitive primary generalized epilepsy (Ng, 2002). Other types of reflex seizures such as eating epilepsy are also well described (Koul, Koul, & Razdan, 1989; Nagaraja & Chand, 1984).

A Sri Lankan study demonstrated that 18.2% of patients attending an epilepsy clinic had the majority of their seizures precipitated by a specific stimulus; of these patients 7.7% had exclusive reflex epilepsy (Senanayake, 1998).

Patients with reflex epilepsy may present to psychiatry with unusual precipitants and symptomology. They may be referred by other physicians or neurologists for psychiatric evaluation. The presentations are often intertwined with sociocultural beliefs and life stressors, which make their recognition difficult. A thorough knowledge of diverse presentations and a high index of suspicion is needed to diagnose and manage these patients as exemplified by the four cases given below.

## Case 1

A young male army recruit was referred by a neurologist for psychiatric evaluation with the complaint of having episodes of stopping and stooping down suddenly while walking. His army colleagues and the medical staff thought that he was doing this purposefully to keep away from army duties. The patient did not have any

recollection of why and for how long he was motionless. His colleagues reported that after a few minutes he would resume walking. He appeared 'dazed' when this occurred. Detailed assessment revealed that he enjoyed mental arithmetic and sometimes challenged himself with mental calculations to avoid boredom. The sudden halting when walking was clearly temporally associated with these mental calculations. Although the initial electroencephalograms (EEG) were normal, subsequent EEGs were reported as having non-specific changes. His clinical history and observations were very suggestive of a seizure disorder. CT scan of the brain and other investigations including random blood sugar, serum electrolytes, serum calcium, liver and renal function tests were normal. He was commenced on sodium valproate and his symptoms resolved completely.

### Case 2

A teenage girl developed episodes of severe anxiety after having shifted her residence and her school. When the episodes occurred, she would become intensely anxious, start to run and sometimes even try to jump down from her balcony. The episodes mostly occurred when she was reading. She was started on fluoxetine and a small dose of risperidone by a psychiatrist. Since there was no improvement after a few weeks, she was seen by a different psychiatrist. At the interview she developed an episode. She became anxious, started to sweat profusely, appeared dazed and crawled under the table. She recovered after 10-15 minutes and complained that she was sleepy. Complex partial seizures were suspected and investigations were carried out. EEG showed seizure activity characterized by left temporal lobe spikes and secondary generalization. CT scan of the brain showed a suspicious area and she was referred for MRI. It showed a cyst in the left hippocampal area which was suspected to be the cause of the seizures. She was referred to a neurologist and subsequently to a neurosurgeon. Surgery was considered risky and she was commenced on antiepileptic drugs. Her symptoms resolved and she was able to continue her studies.

### Case 3

A young male presented to the psychiatric outpatient clinic with the complaint of intense fear while travelling in buses. The fear was associated with profuse sweating that lasted for several minutes. These episodes seemed to be more when he has seated next to young females. A diagnosis of social phobia with panic attacks was made and he was commenced on fluoxetine and engaged in cognitive behavioral therapy. There was no improvement despite several months of treatment. Further assessment revealed that the fear seemed to be precipitated exclusively while travelling in buses and sitting adjacent to females, who were wearing strong perfumes. He also had social anxiety, which forced him to gaze at the moving scenery while travelling. The complex nature of the presentation led to further investigations to exclude a seizure disorder. EEG revealed spikes in the left temporal region suggestive of complex partial seizures. CT scan of the brain was normal. He was commenced on carbamazepine and achieved a good recovery.

### Case 4

A teenage boy was brought by the parents due to 'passing out' several times and falling on the floor. The parents claimed that most episodes occurred in the kitchen when eating spicy food that also had a strong aroma. The parents were very concerned and sought relief from local witch doctors thinking that it could be related to spiritual influence. Subsequently he was brought for psychiatric assessment. Seizure disorder was suspected as there was a sudden loss of consciousness associated with falling and amnesia for the episode. EEG revealed generalized seizure activity. His condition became reasonably stable with reduction in episode frequency on a combination of carbamazepine, sodium valproate and clonazepam.

### Discussion

Visual stimuli are the commonest trigger for reflex seizures. However, unusual precipitants have been reported such as emotionally gratifying stimuli (Aguglia et al., 1999), being startled (Aguglia, Tinuper, & Gastaut, 1984), defecation

(Harbord & Mitchell, 2002), micturition (Whitney & Callen, 2013) both defecation and micturition (Higuchi et al., 2011), eating (Nagaraja & Chand, 1984), passive tooth brushing (Kumada et al., 2013) and orgasms (Ozkara et al., 2006; Sengupta, Mahmoud, Tun, & Goulding, 2010). Listening to and/or playing music is also a precipitant (Avanzini, 2003). A Sri Lankan study has shown that the commonest type of reflex epilepsy was eating epilepsy (Senanayake, 1998).

Our first case highlights reflex seizures which were precipitated by mental arithmetic. Similar cases have been reported previously (Goossens, Andermann, Andermann, & Remillard, 1990; Rey et al., 1996). The patient made a good recovery with antiepileptic drugs. The second case was of a patient who developed seizures secondary to an organic pathology. The seizures were both spontaneous and precipitated by reading. Our third case highlights the complex nature of the problem and the necessity to evaluate the patient thoroughly to come to a diagnosis. The nature of the sensory stimuli was confusing and we found it difficult to distinguish the exact precipitants. The smell of perfume that the patient experienced may have even been an aura preceding a seizure. Unfortunately, we were unable to simulate the same conditions and evoke seizures in this patient, to confirm the precipitant. This presentation at a glance was however, very similar to that of an anxiety disorder and the correct diagnosis was arrived at several months later. In our fourth case, the seizure activity was precipitated most probably by eating. Again, there were other possible precipitants such as cooking noises, being startled or even the nature of the food (spicy food with strong aroma). The patient dropped on the kitchen floor suddenly while eating and this led the parents to suspect a supernatural or demonic influence. Both these patients recovered with antiepileptic drugs.

Various treatment options have been reported in the literature for reflex seizures. Generalized reflex seizures normally respond to valproate (Xue & Ritaccio, 2006). Lamotrigine has been used as adjunctive or monotherapy for startle-induced or other forms of reflex epilepsies (Faight, 1999). The choice of antiepileptic drug depends on the type of seizure than the precipitant.

When the provoking factors are very exotic, patients are referred for psychiatric evaluation (Kasteleijn-Nolst Trenité, 2012). In our case series, apparent secondary gains, life events, social stressors and cultural beliefs could have easily provided plausible psychological explanations of causation. These cases therefore highlight the importance of keeping an open mind and considering all possibilities when such patients are assessed. Reflex seizures are in this way, easily missed and one needs to be vigilant as not to overlook subtle symptoms and signs in the history and examination and make a thorough evaluation. Identifying the correct precipitant is also a challenging task. Revisiting the histories and reconsidering the diagnoses of patients who do not make the expected response to treatment is equally important. This case series encompasses yet another example of the overlap between neurology and psychiatry, which each discipline cannot afford to ignore. Awareness of the common and exotic precipitating factors may help to improve the management and unravel the pathophysiology.

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