

Novel Treatment Options for Two Forms of Reflex Seizures

Saumya H Mittal^{1*}, Nikhil Mehrotra², Sudhanshu Bajaj³ and Salony Mittal⁴

¹Consultant Neurologist, Felix Hospital, Noida, India

²Consultant Pediatrician, Felix Hospital, Noida, India

³Consultant Anesthetist and Intensivist, Felix Hospital, Noida, India

⁴Assistant Professor, Department of Pathology, Sharda Medical College, Uttar Pradesh, India

*Corresponding Author: Saumya H Mittal, Consultant Neurologist, Felix Hospital, Noida, India.

Received: September 30, 2019; Published: November 07, 2019

Abstract

Epileptic events that are caused by external stimuli, internal processes or both are known as reflex epilepsies. The external stimuli can be simple or complex. The intrinsic stimuli can be elementary or related to higher mental functions. Many stimuli have been described since 1850. We report 2 cases of reflex seizures with triggers that have been rarely reported.

Keywords: Reflex Seizures; Stimuli; Micturition Seizures; Menstrual Seizures; Catamenial Seizures

Introduction

Epileptic events that are caused by external stimuli, internal processes or both are known as reflex epilepsies. They can be focal or generalized. Almost 4 to 7 % epilepsy patients have been reported to be suffering from epilepsy [1].

Reflex epilepsies are quite similar to unprovoked seizures, except for the fact that they have a stimulus. The external stimuli can be simple such as light flashes, hot water; or complex such as reading, listening to music. The intrinsic stimuli can be elementary such as movement or even related to higher mental function such as thinking, calculation and cognitive functions. Many stimuli have been described since 1850 (Table 1). The external stimuli are usually more common a cause compared to the internal stimuli [1,2].

A good history taking of the environmental factors is essential as avoidance of the trigger is essential in prevention of these seizures. Evaluation of these factors and their interaction may help understand the seizures and may help in avoidance of the trigger and therefore help give a better control of the seizure. More commonly the seizure triggers affect the sensory modality. Reflex seizures can occur at any age group and in adults and children alike. The trigger may be a short one or a prolonged one. The patients have a refractory phase and this is usually longer if the seizure has been a long one. Patients can even learn how to self induce a seizure. And children and adolescents are known to trigger their seizure for a pleasant sensation. A careful history needs to be sought, at least in intelligent patients, to identify the trigger. Questioning about specific circumstances in which the seizures occur may help identify the trigger. An EEG with the trigger, if possibly replicable in the laboratory, may be diagnostic [1,2].

Some common causes of the reflex seizures are listed in table 1.

<p>Photosensitive Epilepsy</p> <ul style="list-style-type: none"> • Flickering lights • Photosensitivity • Striped black and white pattern • Television induced seizures • Video games induced seizures
Musicogenic Epilepsy
Thinking Epilepsy
<p>Somatosensory Seizures</p> <ul style="list-style-type: none"> • Skin friction • Pricking • Touching • Tapping • Tooth brushing • External ear stimulation
Proprioceptive Induced Seizures
Eating Epilepsy
Reading Epilepsy
Hot Water Epilepsy and Bathing Seizures
Vacuum Cleaner Epilepsy
Praxis Induced Seizures
Orgasm Induced Seizures

Table 1: Common causes of reflex seizures.

Case Histories

Case 1

A 34-year-old lady presented to the hospital with sudden onset of loss of consciousness, the lady had prior episodes of loss of consciousness. However, no treatment was started. The family had noted that the lady developed an episode of loss of consciousness every month and would not develop any similar complaints during the month. The son described that she had occasional episodes of jerky movements and a scream at the time of development of the loss of consciousness. She would usually be unconscious for approximately half an hour where after she would regain consciousness and gradually recover. The CT scan and the EEG done showed no significant changes. The lady improved over the next couple of days. An ultrasound of the pelvis was done that showed the endometrial thickness of 5 - 10 mm with multiple fibroids. A gynecological history and evaluation were sought and the lady revealed that the lady had irregular menses. She was taken up for dilatation and curettage. The histopathology was suggestive of benign leiomyomas. However, on the follow up in OPD she revealed that she had developed no further seizures.

Case 2

This 7-year-old girl presented to the hospital with recurrent episodes of seizures. She developed the seizures multiple times during the day. During the interictal period, she was completely normal. The mother stated that she would develop a seizure every time she passed urine. A CECT of the brain and EEG were done. There was however no significant finding on the CECT scan or the EEG. The patient

was initiated on multiple antiepileptics but continued to develop seizures. A foley's catheter was inserted and she stopped developing any further seizures. The urine routine, culture, and ultrasound of the abdomen were normal as well. The child was thereafter started on Flavoxate and the girl developed no further seizures thereafter even after the foley's catheter was removed.

Discussion

In humans, it has been found that estrogen infusion can exacerbate seizures and rapid interictal activity, especially in premenstrual phase. It is therefore possible that estrogen facilitates catamenial seizures. Leiomyomas react to estrogen levels and grow with the levels of circulating estrogen. It is therefore possible that the removal of fibroids and the correction of the hormonal balance may therefore have been responsible for decrease in the seizure activity [3].

Micturition is a finely tuned brain and spinal cord mechanism for bladder control and function (of storage and voiding process) modulated by the central mechanisms (pontine and suprapontine) and, normally, social appropriateness especially after 3 to 5 years of age when it becomes a voluntary process. Many diseases are known to affect this process leading to urinary dysfunctions. Micturition triggers seizures, though rarely. Seizure focus is usually midline or frontotemporal in the reported cases. An excess activation of these areas during voiding may be the possible mechanism of these seizures. Detrusor overactivity may be another mechanism especially among children with developmental delay. Flavoxate hydrochloride is a papaverine-like smooth muscle relaxant whose actions include activity on the detrusor muscle. And this may be the possible reason why our patient benefitted with the use of flavoxate [4].

Conclusion

Reflex epilepsy syndrome is defined as a syndrome in which all epileptic seizures are precipitated by a sensory stimuli. An ILAE report reduced the reflex seizures and epilepsy to a heading under 'electroclinical syndromes'. The trigger and treatment of these seizures is ever expanding [2].

We hereby describe two causes of reflex seizures that are rarely reported. Micturition and menses have thus far been rarely reported as triggers of reflex seizures. Typically, their treatment needed measures other than antiepileptic drugs. We hereby describe treatment that has not been commonly suggested for these epilepsies.

Bibliography

1. Zeynep Vildan Okudan and Çiğdem Özkara. "Reflex epilepsy: triggers and management strategies". *Neuropsychiatric Disease and Treatment* 14 (2018): 327-337.
2. Dorothee GA and Kasteleijn-Nolst Trenite. "Provoked and reflex seizures: Surprising or common?" *Epilepsia* 53.4 (2012): 105-113.
3. Alberto Verrotti., *et al.* "Diagnosis and management of catamenial seizures: a review". *International Journal of Women's Health* 4 (2012): 535-541.
4. Hyun-Jong Jang., *et al.* "Central Regulation of Micturition and Its Association With Epilepsy". *International Neurology Journal* 22.1 (2018): 2-8.

Volume 11 Issue 12 December 2019

©All rights reserved by Saumya H Mittal., et al.