Case Report

A case of reading epilepsy in a patient having idiopathic generalized epilepsy

Vijay Sardana[1], Pallav Jain[2], Prashant Shringi[2]

From [1]Senior Professor & Head, [2]Senior Resident, Department of Neurology, Government Medical College, Kota, Rajasthan, India

Correspondence to: Dr. Pallav Jain, Department of Neurology, Government Medical College, Rangbari, Kota - 324010, Rajasthan, India. E-mail: jainpallav89@gmail.com

Received - 07 January 2019 Initial Review - 23 January 2019 Accepted - 04 March 2019

ABSTRACT

Reflex seizures are defined as epileptic events that are triggered only by specific stimuli which can be external or complex internal mental processes. Reading epilepsy is one such rare form of reflex epilepsy. In primary reading epilepsy, typical attacks are jaw jerks (clicking sensation or stammering), that may evolve into GTCS if reading continues. As reading epilepsy is task-specific, they are generally misdiagnosed as non-epileptic and thought to be due to stress related to studies. We report the case of a young male who have jaw jerks along with blank staring spells while reading which was misdiagnosed as pseudoseizures. This rare case highlights this easily treatable benign reflex epilepsy syndrome.

Key words: *Pseudoseizures, Reading epilepsy, Reflex epilepsy, Task specific*

Reflex seizures are defined as epileptic events thatare triggered only by specific stimuli which can be external or complex internal mental processes [1]. Reflex seizures have traditionally been classified into generalized and focal. Generalized reflex seizures such as myoclonic, absence or generalized tonic–clonic fits, may occur in patients with idiopathic generalized epilepsy.Different kind of focal reflex seizures may occur in patients with symptomatic or cryptogenic epilepsy [2]. In 2017, International League Against Epilepsy Classification said that reflex seizures are to be identified according to seizure type and etiology in an individual case [3]. Versatile studies of cerebral function demonstrated that iatrogenic mechanisms in reflex epilepsies generally originated from the stimulation of functional anatomic networks ordinarily functioning for highly complex physiological activities [4].

Reading epilepsy is one such rare form of reflex epilepsy characterized by orofacial myoclonus or partial seizures, precipitated by reading or other language-related activities such as writing or speaking [5]. Cases have been described that overlap clinically with benign partial epilepsy of childhood (BPEC), with juvenile myoclonic epilepsy (JME) and with absence epilepsy [6]. Reading epilepsy is very rare in our practice; its early diagnosis allows treatment and avoids the impact on the students' academic future

CASE REPORT

A 26-years-old male reported to the department with complaints of generalized tonic-clonic seizures (GTCS) since 4 years of age. The patient was a known case of idiopathic generalized epilepsy with normal birth history, developmental history and without any positive family history or any history of encephalitic like illness in childhood. The patient was on valproate 1000 mg and clobazam 10 mg and well controlled.

Since last 2 years, the patient had jaw jerks along with blank staring spells while reading which was misdiagnosed as pseudoseizures and co-related with the stress of competitive exams. Each attack used to last for 1-2 seconds. These attacks were more when he used to read aloud. On general examination, his Blood pressure was 110/70 mm/Hg and pulse rate-80/minute. Fundus examination was normal. On Neurological examination, the patient was cooperative. His mental status examination was normal. The patient had no neurological deficit.

Electrocardiogram (ECG) was normal. All the serum biochemical parameters were found normal and their values were mentioned as follows: Serum Sodium=132 meq/l, serum Pottasium=4.1meq/l, Serum Calcium=9.8 mg/dl, Serum Magnesium=2.1 meq/l. Fasting blood sugar=82mg/dl, Serum

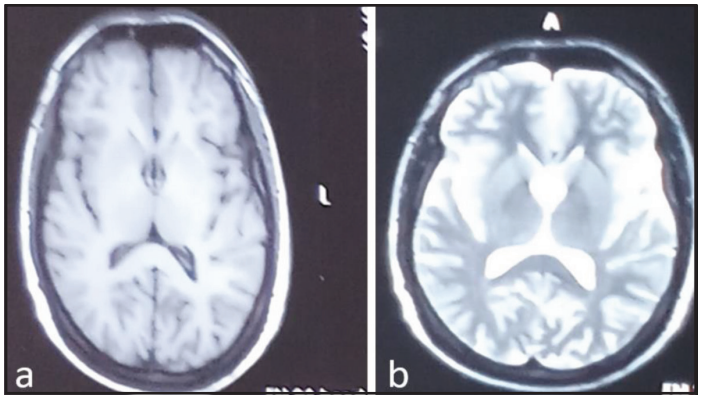

Figure 1: (a) T1 weighted image; (b) T2 weighted image

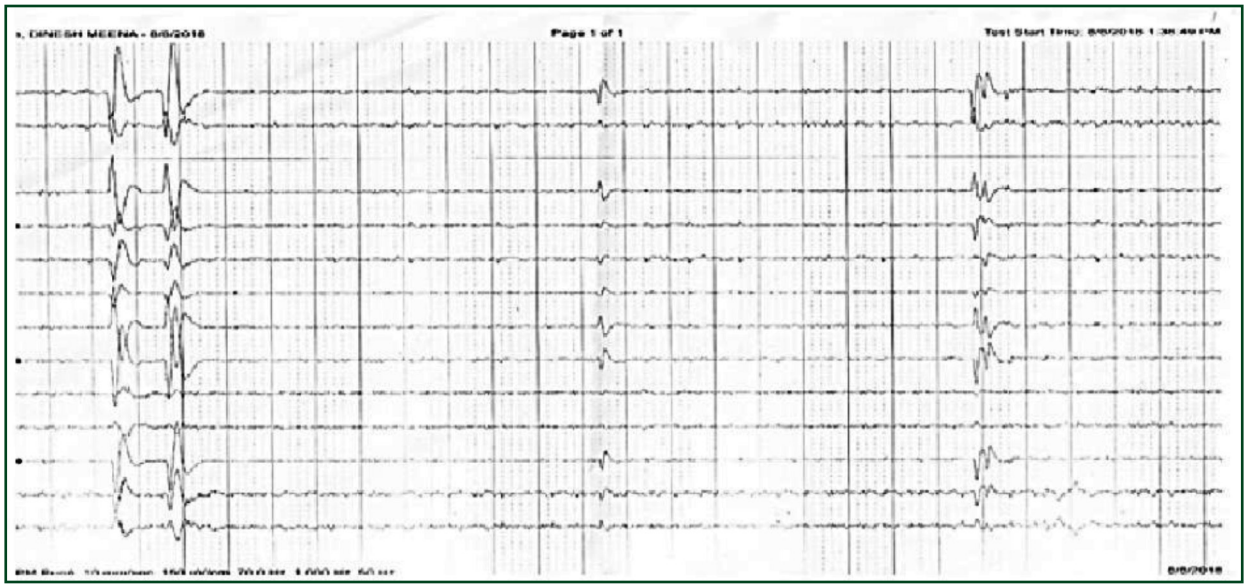

Figure 2: EEG showing generalized spike discharges

Creatinine=0.9 mg/dl and Blood Urea=32mg/dl. Magnetic resonance imaging (MRI) of the brain was normal (Fig. 1). Provocative Electroencephalography (EEG), done on 16 channel digital EEG machine while reading, showed generalized spike discharges (Fig. 2). The patient was diagnosed as reading epilepsy and dose of sodium valproate was increased. Currently, the patient is in regular follow up. The patient is seizure free and has no problem while reading.

DISCUSSION

Reading epilepsy was first described in 1956 by Bickford *et al.* Its onset is generally seen in early adulthood (range 10–40 years) with a male predominance (male to female ratio 2:1). The syndrome may have autosomal dominant inheritance pattern [3,7]. In primary reading epilepsy, typical attacks are jaw jerks (clicking sensation or stammering), that may evolve into GTCS if reading continues. Many other distinct reading-induced ictal symptoms have been described such as abrupt loss of consciousness, blank staring spells, paroxysmal alexia or dyslexia, prolonged stuttering [7]. Reading is a complex cognitive process involvingvisual analysis, memory functions, conversionof written words to phonetic language and articulation and acoustic monitoring [5].

Salek-Haddadi reported that most ictal cortical areas highlighted by simultaneous EEG, Electromyography (EMG) and functional MRI in nine patients withreading epilepsy were close to or directly overlying areas activated by cognitive and motorfunctions relating to speech.When a critical massof these areas is recruited during reading, thereis a subsequent spread of this excitation, prompting epileptogenic discharges with or without clinical seizures [8]. Structural brain imaging is generally normal in cases of reading epilepsy [5]. Interictal EEG can be normal in 80% of patients, spontaneous spike and wave discharges can be present in 11% andtemporal paroxysmal discharges are present in 5% [2]. A combined EEG/functional MRIstudy in patients of reading epilepsy has shown to involve theactivation of left motor and premotor areas, left striatum and mesiotemporal/limbic areas during reading induced seizures [2]. Sodium valproate is considered the first choice of drug and Levetiracetam and clonazepam as second-line drugs [3]. There was a report of 25-year-old women with reading epilepsy who was given phenobarbital at a dose of 100 mg per day. This resulted, after three weeks of treatment, a good clinical-electrical improvement [9]. Non-pharmacological measures like stimulus avoidance (interruption of reading) can be tried [3].

CONCLUSION

Reading is an important aspect of life, particularly students.As reading epilepsy is task-specific, they are generally misdiagnosed as non-epileptic and thought to be due to stress related to studies. Detailed history and provocative EEG gives the final diagnosis. Such patients when treated with a proper dosage of the anti-epileptic drug, do well and can be free of seizures. This rare case highlights this easily treatable benign reflex epilepsy syndrome and the importance of proper history taking and task-specific EEG.

I would like to thank neurology department of our college who helped a lot during preparation of this case report.

REFERENCES

1. Glass HC, Prieur B, Molnar C, *et al*. Micturition and emotion-induced reflex epilepsy: Case report and review of the literature. Epilepsia 2006;47:2180-2.
2. Italiano D, Ferlazzo E, Gasparini S, Spina E, Mondello S, Labate A, *et al*. Generalized versus partial reflex seizures: A review. Eur J Epilepsy 2014;23:512-20.
3. Okudan ZV, Özkara C. Reflex epilepsy: Triggers and management strategies. Neuropsychiatr Dis Treat 2018;14:327-37.
4. Koepp MJ, Caciagli L, Pressler RM, Lehnertz K, Beniczky S. Reflex seizures, traits, and epilepsies: From physiology to pathology. Lancet Neurol 2016;15:92-105.

5. Miller S, Razvi S, Russell A. Reading epilepsy. Pract Neurol 2010;10:278-81.
6. Gupta SK, Gupta A, Gandotra D, Gupta A. Reading Epilepsy. JK Science 2008;10:52-8.
7. Koutroumanidis M, Koepp MJ, Richardson MP. The variants of reading epilepsy. A clinical and video-EEG study of 17 patient with reading-induce seizures. Brain 1998;121:1409-27.
8. Salek-Haddadi A, Mayer T, Hamandi K, *et al*. Imaging seizure activity: A combined EEG EMG-fMRI study in reading epilepsy. Epilepsia 2009;50:256-64.
9. Diallo IM, Boubacar S, Ndong ME, Mansaré ML, Boubacar Aw, Ngoungoure HFS, *et al*. Reading epilepsy in senegalese young woman: A case report. International Journal of Brain and Cognitive Sciences 2017;6:17-9.

Funding: None; Conflict of Interest: None Stated.

How to cite this article: Sardana V, Jain P, Shringi P. A case of reading epilepsy in a patient having idiopathic generalized epilepsy. Indian J Case Reports. 2019;5(2):114-116.

Doi: 10.32677/IJCR.2019.v05.i02.007