

# Epileptic nystagmus due to a large parieto-temporo-occipital multilobar dysplasia

Harish Jayakumar<sup>1</sup>, Siby Gopinath<sup>1</sup>, Ashok Pillai<sup>1</sup>, Anand Kumar<sup>2</sup>

<sup>1</sup> Amrita Advanced Centre for Epilepsy, Amrita Institute of Medical Sciences, Kochi, India

<sup>2</sup> Department of Neurology, Amrita Institute of Medical Sciences, Kochi, India

Received July 10, 2020; Accepted July 19, 2020

**ABSTRACT** – We report a young female with medically refractory multiple daily seizures since childhood with semiology suggestive of an epileptic nystagmus. She had a large multilobar parieto-temporo-occipital dysplasia and became seizure-free after parieto-temporo-occipital disconnection with preserved visual functions.

**Key words:** epileptic nystagmus, oculoclonia, parieto-temporo-occipital dysplasia

A 12-year-old female, with normal birth and development, presented with multiple daily seizures since eight months of age. Her baseline extraocular eye movements were normal. She had focal seizures with semiology of epileptic nystagmus with a fast component to the right. MRI showed a large left parieto-temporo-occipital dysplasia with significant PET hypometabolism. She became seizure-free after parieto-temporo-occipital disconnection (figures 1, 2). Epileptic nystagmus or *oculoclonia* originates from cortical regions contralateral to the fast component (Lee *et al.*, 2014). Oculoclonia originating from saccadic areas results in contralesional ocular deviation with decreasing slow-phase velocity (SPV) and does not cross the midline (Tusa *et al.*, 1990). In contrast, Oculoclonia originating from smooth pursuit areas

results in ipsilesional ocular deviation with linear SPV and a reflex quick phase crossing the midline towards contralesional side (Tusa *et al.*, 1990). □

## Legend for video sequence

Epileptic nystagmus: the patient indicates aura (nods head) and then develops oculoclonia with a fast component to the right side.

**Key words for video research on [www.epilepticdisorders.com](http://www.epilepticdisorders.com)**

*Phenomenology:* epileptic nystagmus

*Localisation:* not applicable

*Syndrome:* not applicable

*Aetiology:* dysplasia



VIDEO ONLINE

## Correspondence:

Siby Gopinath  
Professor of Neurology,  
Amrita Advanced Centre for Epilepsy,  
Amrita Institute of Medical Sciences,  
Kochi, India  
<sibygopi@gmail.com>

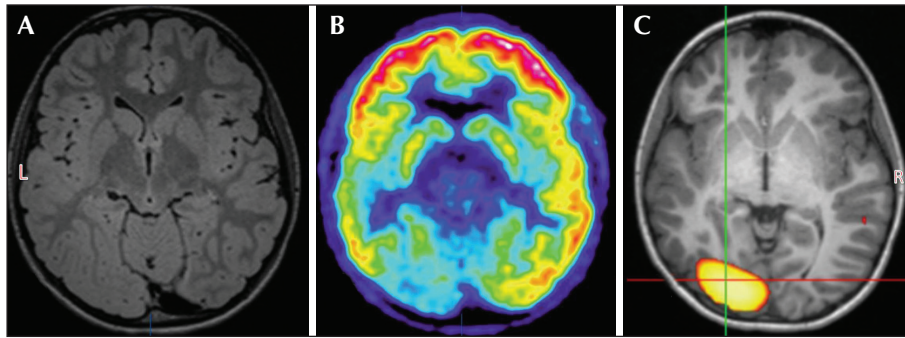
## Disclosures.

None of the authors have any conflict of interest to declare.

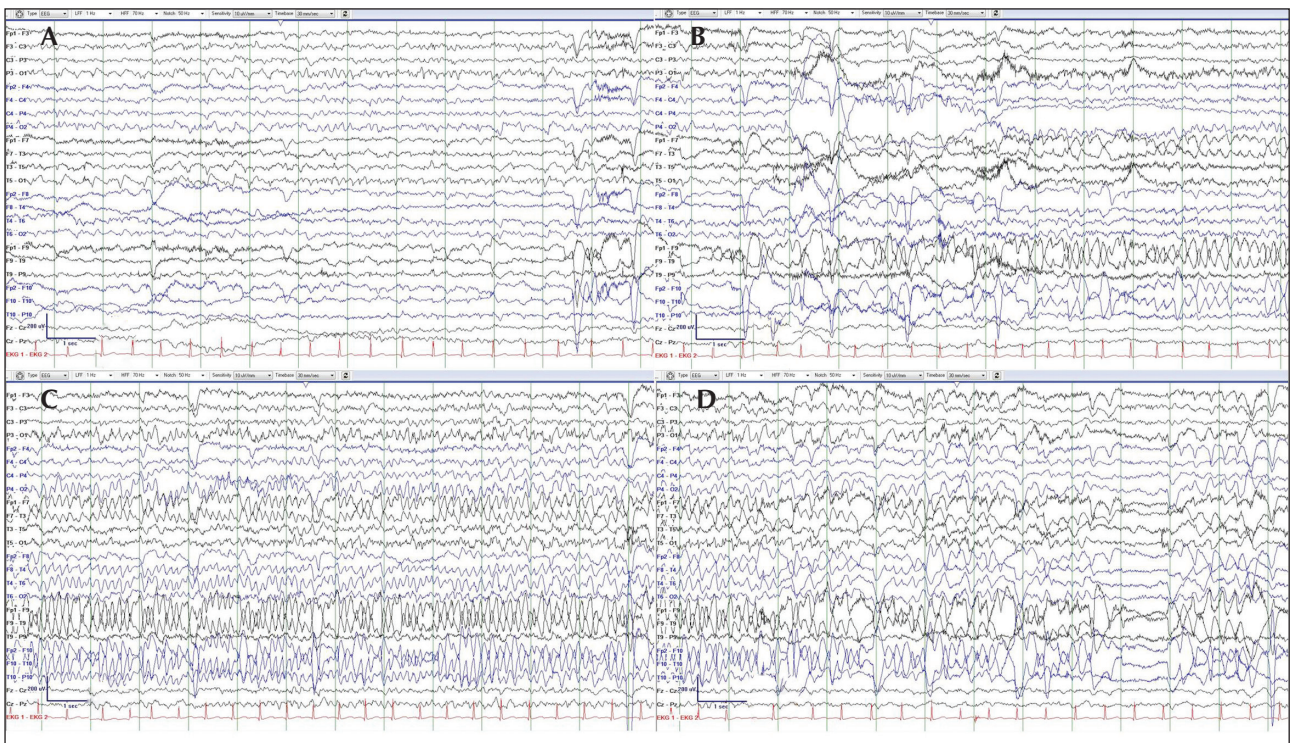
## References

Lee SU, Suh HI, Choi JY, Huh K, Kim HJ, Kim JS. Epileptic nystagmus: a case report and systematic review. *Epilepsy Behav Case Rep* 2014; 2: 156-60.

Tusa RJ, Kaplan PW, Hain TC, Naidu S. Ipsiversive eye deviation and epileptic nystagmus. *Neurology* 1990; 40(4): 662-5.



**Figure 1.** MRI, PET and SPECT imaging. (A) T2 FLAIR image shows a large left PTO multilobar dysplasia. (B) PET shows significant hypometabolism corresponding to the dysplasia. (C) SPECT tracer uptake over the left occipital region.



**Figure 2.** Ictal onset scalp VEEG. (A) Ictal onset showing a rhythmic irregular 1-2-Hz low-amplitude spike-wave complex evolving into rhythmic 8-9-Hz activity over the left PTO region (T5-O1 and P3-O1 channel). (B) Nystagmus artifacts. (C) Ictal activity spreading to other areas. (D) Resolution and offset.

**TEST YOURSELF**



- (1) What are the sites of origin of epileptic nystagmus?
- (2) How do you differentiate between epileptic nystagmus originating from saccadic areas and smooth pursuit areas?
- (3) What are the features of epileptic nystagmus originating from a central optokinetic region?

*Note: Reading the manuscript provides an answer to all questions. Correct answers may be accessed on the website, [www.epilepticdisorders.com](http://www.epilepticdisorders.com), under the section "The EpiCentre".*