

Intermittent photic stimulation-provoked seizure associated with ictal asystole

Xiaoli Wang, Yonghong Liu

Epilepsy and Sleep Disorders Unit, Department of Neurology, The Fourth Military Medical University, Xi'an, China

A 19-year-old female presented with an eight-year history of epilepsy. The seizures were very infrequent, with a yearly frequency. The seizure presented as cephalic aura at onset, followed by rotation of the whole body with eye and head left deviation, associated with loss of awareness, and then left-sided dystonia that rapidly progressed to a bilateral tonic-clonic seizure. Brain MRI was normal. EEG monitoring revealed an interictal epileptic discharge mainly located in the occipital region, which indicated a spontaneous seizure type, as "focal to bilateral tonic-clonic" according to the ILAE 2017 classification of seizure types (Fisher *et al.*, 2017). During the intermittent photic stimulation (IPS) procedure, the photo paroxysmal responses limited to the stimulus train occurred mainly in the occipital region at 8-25 Hz, and the seizure associated with asystole was provoked by IPS at 15 Hz (*video and supplementary figures 1-10*). The ictal clinical symptoms manifested as nausea and fear, followed by syncope. The ictal EEG showed epileptiform discharges emanating from the occipital region and then spreading to the temporal lobe, followed by a generalized "slow-flat-slow" pattern during asystole. ECG revealed sinus bradycardia which progressed to asystole, followed by resumption of sinus rhythm. Interictal ECGs revealed normal sinus rhythm. The patient reported that she had never previously

experienced the seizure type captured in the EEG laboratory. It was therefore necessary to pay more attention to the IPS procedure for the safety of the patient (Kasteleijn-Nolst Trenite *et al.*, 2012). Our study reveals seizure with asystole triggered by IPS as a novel finding, and it is important to raise awareness of the possibility of asystole triggered by IPS during EEG recordings. □

Legend for video sequence

Seizure associated with asystole provoked by IPS. The ictal clinical symptoms manifested as nausea and fear, followed by syncope.

Key words for video research on
www.epilepticdisorders.com

Phenomenology: IPS induced ictal asystole
Localisation: focal
Syndrome: unknown
Aetiology: unknown

Supplementary data.

Summary didactic slides and supplementary figures are available on the www.epilepticdisorders.com website.

Disclosures.

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

References

- Fisher RS, Cross JH, D'Souza C, *et al.* Instruction manual for the ILAE 2017 operational classification of seizure types. *Epilepsia* 2017; 58: 531-42.
- Kasteleijn-Nolst Trenite D, Rubboli G, Hirsch E, *et al.* Methodology of photic stimulation revisited: updated European algorithm for visual stimulation in the EEG laboratory. *Epilepsia* 2012; 53: 16-24.



VIDEO ONLINE

Correspondence:

Yonghong Liu
Epilepsy and Sleep Disorders Unit,
Department of Neurology,
The Fourth Military Medical University,
Xi'an, China
<liuyhong@fmmu.edu.cn>

TEST YOURSELF



- (1) Does IPS provoke other focal seizures other than occipital seizures?
- (2) Is asystole related to seizure?

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