

Teaching Video NeuroImage: Reflex Epilepsy

Seizures Induced by Vigorous Exercise

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Neurology® 2022;98:e875. doi:10.1212/WNL.0000000000013216

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Case

A 7-year-old right-handed boy with tuberous sclerosis complex and focal epilepsy presented with new episodes of exercise-induced full body tonic posturing, whimpering, and preserved awareness. He underwent video-EEG investigation where he had a representative seizure after vigorous pedaling on a stationary bike associated with bitemporal (left more than right) ictal correlate (Video 1). Brain MRI demonstrated stability of his cortical tubers, none with temporal topography. Exercise-induced seizures are a rare form of reflex epilepsy.¹ Available data suggest these seizures typically localize to the temporal region (left more commonly than right) and tend to be refractory to treatment, depending on the etiology.² The mechanisms of epileptogenesis in TSC are presumed to be related to the neuropathologic features of the disorder, including cortical tubers and other dysgenesis.³

MORE ONLINE

Teaching slides

links.lww.com/WNL/B710

Video

Study Funding

The authors report no targeted funding.

Disclosure

F. Nascimento is a member of the Neurology Resident and Fellow Section Editorial Board. J. McLaren and E. Thiele report no disclosures relevant to the manuscript. Go to Neurology.org/N for full disclosures.

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Name	Location	Contribution
John R. McLaren, MD	Massachusetts General Hospital, Boston, MA	Drafting/revision of the manuscript for content, including medical writing for content, major role in the acquisition of data, study concept or design, and analysis or interpretation of data
Fábio A. Nascimento, MD	Massachusetts General Hospital, Boston, MA	Drafting/revision of the manuscript for content, including medical writing for content, major role in the acquisition of data, study concept or design, and analysis or interpretation of data
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References

- Kim J, Jung DS, Hwang KJ, et al. Can an exercise bicycle be safely used in the epilepsy monitoring unit?: an exercise method to provoke epileptic seizures and the related safety issues. *Epilepsy Behav*. 2015;46:79-83.
- Kamel JT, Badawy RA, Cook MJ. Exercise-induced seizures and lateral asymmetry in patients with temporal lobe epilepsy. *Epilepsy Behav Case Rep*. 2014;2:26-30.
- Thiele EA. Managing and understanding epilepsy in tuberous sclerosis complex. *Epilepsia*. 2010;51(suppl 1):90-91.

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Neurology 2022;98:e875 Published Online before print December 14, 2021

DOI 10.1212/WNL.0000000000013216

This information is current as of December 14, 2021

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