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Teaching Video NeuroImage: Reflex Epilepsy Seizures Induced by Vigorous Exercise

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Contributions:

John Robert McLaren: Drafting/revision of the manuscript for content, including medical writing for content; Major role in the acquisition of data; Study concept or design; Analysis or interpretation of data
Fábio Augusto Nascimento: Drafting/revision of the manuscript for content, including medical writing for content; Major role in the acquisition of data; Study concept or design; Analysis or interpretation of data
Elizabeth Anne Thiele: Drafting/revision of the manuscript for content, including medical writing for content; Analysis or interpretation of data; Additional contributions: Supervision of project

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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 following 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

Video Title: Video-EEG shows one exercise-induced electroclinical seizure [sensitivity 20 uV/mm, LF 1 Hz , HFF 70 Hz, notch 60 Hz].

Video legend:

While cycling vigorously, the patient leans forward, extends his right arm, flexes his left arm and whimpers until the seizure ends. Electrographically, there was low-voltage fast activity followed by rhythmic 50-100 uV 4-6 Hz uV sharply contoured activity at T3/T5 more than T4/T6 with evolution in morphology, frequency, and location.

Teaching Slides --<http://links.lww.com/WNL/B710>

Video 1 --- <http://links.lww.com/WNL/B711>

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Appendix 1: Authors

Name	Location	Contribution
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