Teaching NeuroImage: CHANTER Syndrome

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A 44-year-old man with alcohol use disorder presented with unresponsiveness. Toxicology was positive for cocaine and fentanyl. Brain MRI showed multiple foci of restricted diffusion and extensive edema in the cerebellum, hippocampus, and basal ganglia (Figure). Imaging findings suggested cerebellar, hippocampal, and basal nuclei transient edema with restricted diffusion (CHANTER) syndrome, a rare radiographic pattern observed in acute intoxication. Diagnosis is based on these specific MRI findings. In contrast to anoxic-ischemic injury, patients exhibit relative sparing of the cerebral cortex and subcortical white matter. Early recognition allows for aggressive edema management and may obviate unnecessary testing or inappropriate treatment. Prognosis is variable with reports ranging from complete recovery to progressive cerebellar edema and herniation. In this case, despite hyperosmolar therapy, ventriculostomy placement, and suboccipital craniectomy, the patient’s clinical status continued to deteriorate. He died after transition to comfort measures only.

Consent and Research Ethics
The submitting author has received a signed consent form from the participants involved in this study, and the original document has been added to this submission. The study fulfilled all local requirements for the “research ethics board” and principles of the COPE have been reviewed.

Author Contributions
B. Rizkallah Alves: 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. D. B. Rubin: drafting/revision of the manuscript for content, including medical writing for content and analysis or interpretation of data.

Study Funding
No targeted funding reported.

Disclosure
The authors report no relevant disclosures. Go to Neurology.org/N for full disclosures.

Publication History
Received by Neurology May 17, 2023. Accepted in final form August 22, 2023. Submitted and externally peer reviewed. The handling editor was Resident & Fellow Section Deputy Editor Ariel Lyons-Warren, MD, PhD.

References
Figure Axial Brain MRI Demonstrating Diffuse Edema on FLAIR (Left Column) and Corresponding Foci of Restricted Diffusion on DWI (Right Column) in the Cerebellum (A and B), Hippocampus (C and D), and Basal Ganglia (E and F).

Restricted diffusion correlated with hypointensity on ADC sequences (not shown). DWI = diffusion-weighted imaging; FLAIR = fluid-attenuated inversion recovery.
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Neurology 2023;101:e2338-e2339 Published Online before print October 9, 2023
DOI 10.1212/WNL.00000000000207907

This information is current as of October 9, 2023

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