Teaching NeuroImage: CHANTER Syndrome

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Contributions:
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A 44-year-old man with alcohol use disorder presented with unresponsiveness. Toxicology was positive for cocaine and fentanyl. Brain magnetic resonance imaging (MRI) showed multiple foci of restricted diffusion and extensive edema in the cerebellum, hippocampus, and basal ganglia (Figure 1). 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 passed away after transition to comfort measures only.
Figure legend:

Axial brain MRI demonstrating diffuse edema on FLAIR (left column) and corresponding foci of restricted diffusion on DWI (right column) in the cerebellum (AB), hippocampus (CD) and basal ganglia (EF). Restricted diffusion correlated with hypointensity on ADC sequences (not shown).
References:


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.
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