

CHANTER Syndrome:

cerebellar, hippocampal, and basal nuclei transient edema with restricted diffusion

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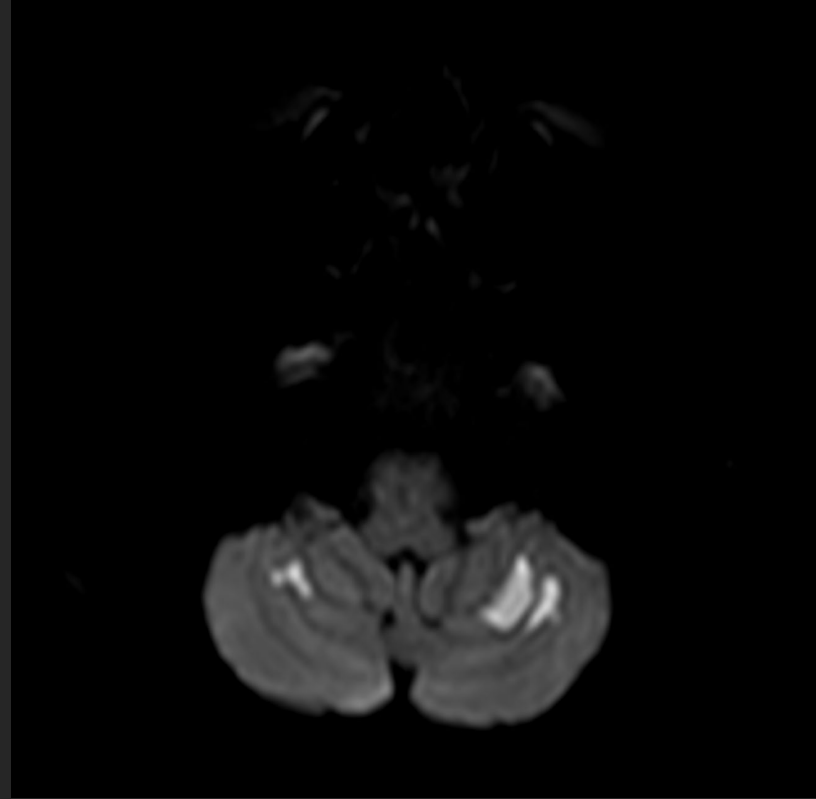
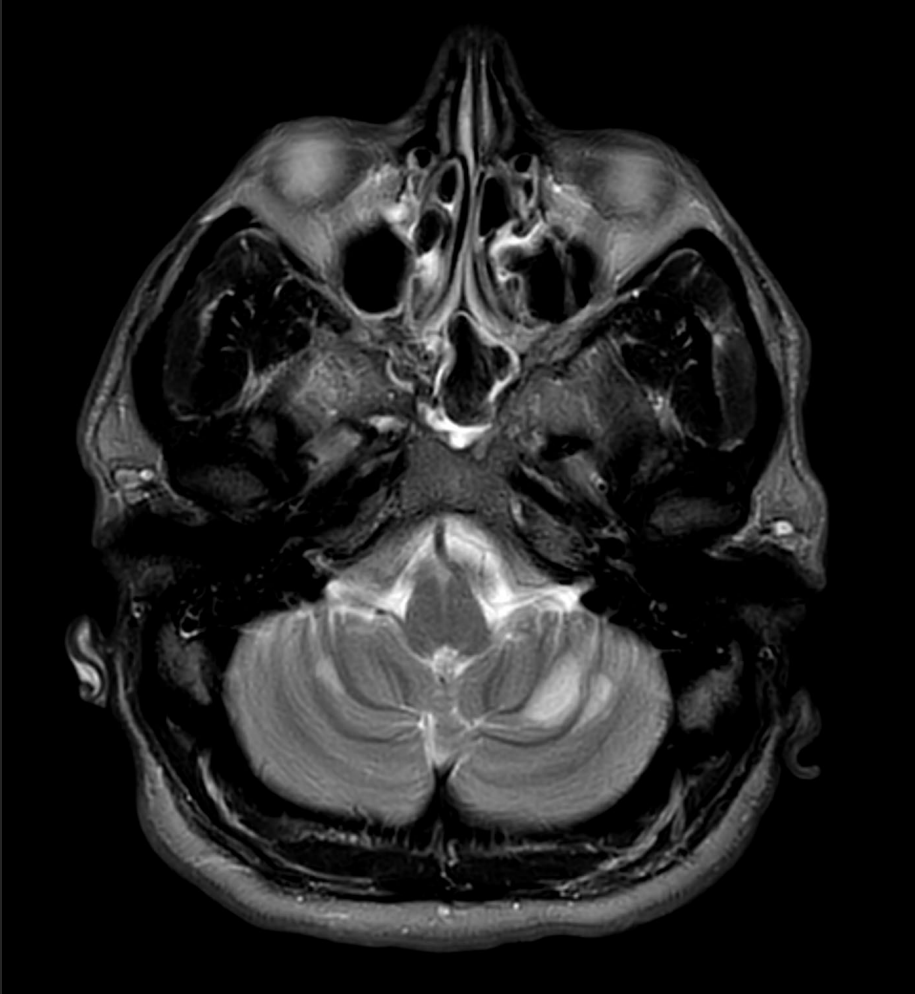
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Clinical Presentation

- 42 y.o. male with a PMHx of ocular myasthenia gravis, bipolar disorder, HTN, and polysubstance use who was brought in by EMS after being found down at home.
- Initial CT Head at presentation was negative for acute intracranial abnormality.

Imaging Discussion:

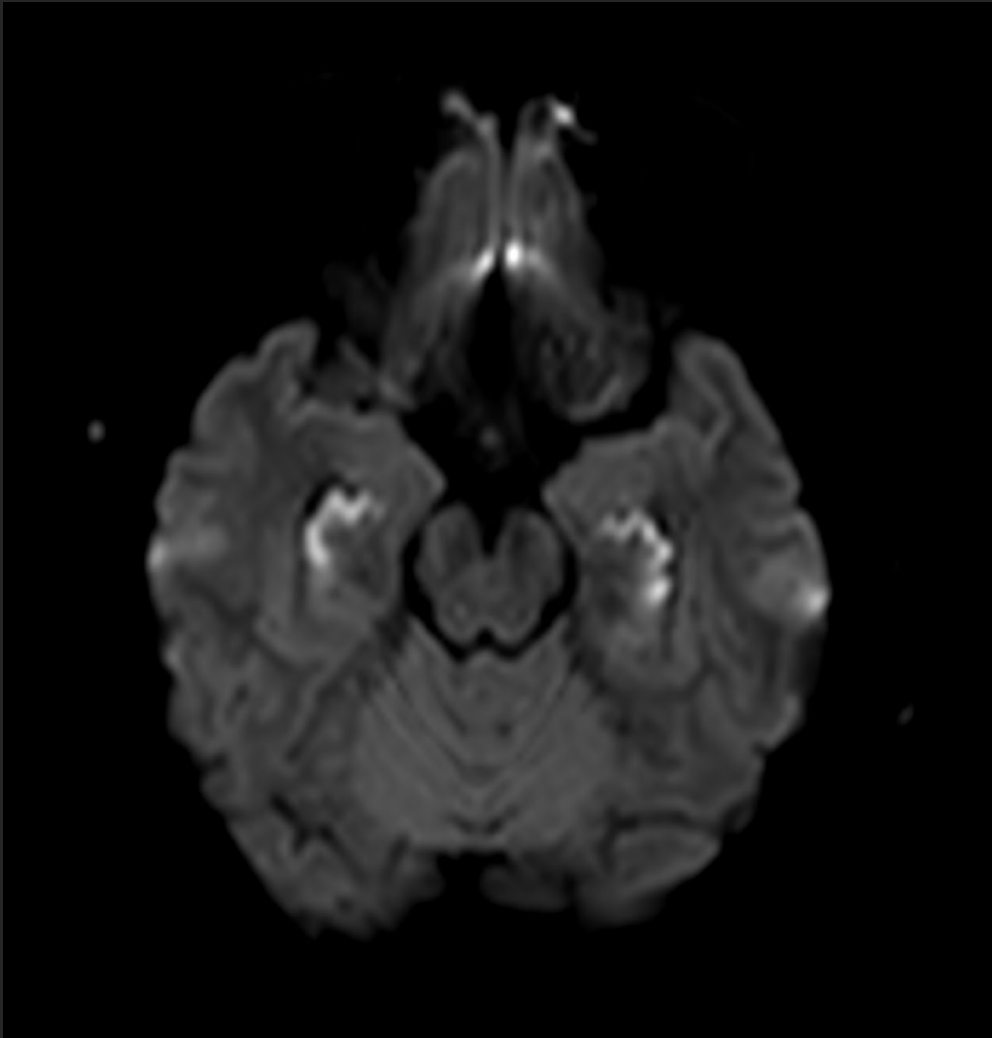
Cerebellum



MRI without contrast demonstrates abnormal restricted diffusion in the bilateral cerebellar hemispheres with correlating T2/FLAIR hyperintensity. The cerebellar edema has no significant mass effect.

Imaging Discussion:

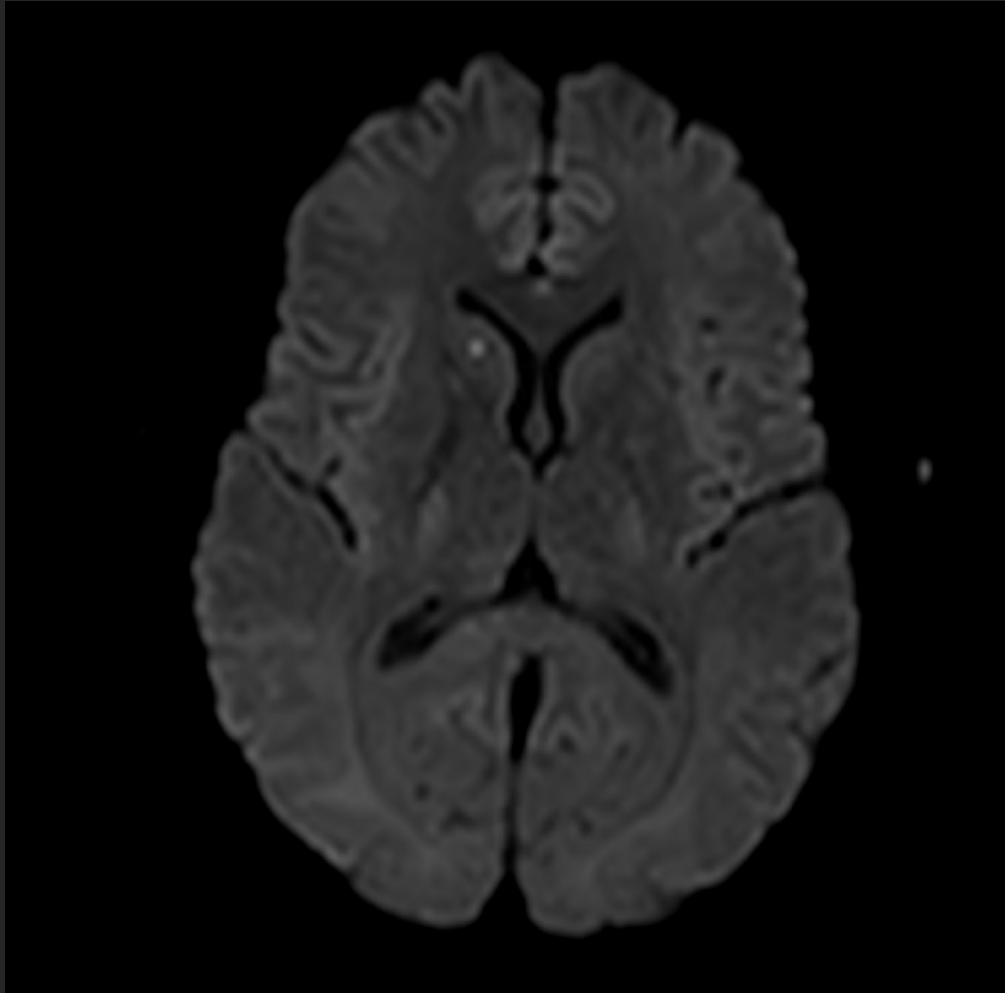
Hippocampus



There is abnormal restricted diffusion along the hippocampal gyri bilaterally with correlating T2/FLAIR hyperintensity (not shown).

Imaging Discussion:

Basal Ganglia



There is a punctate focus of restricted diffusion in the right caudate head with correlating T2/FLAIR hyperintensity (not shown).

Management and Outcome

- Patient was intubated upon arrival
- His urine toxicology was positive for cocaine and fentanyl
- Keppra initiated
- Patient extubated day after admission
- Patient monitored for development of hydrocephalus; no further head imaging deemed necessary
- Acute encephalopathy improved and patient discharged on Keppra with neurology follow up

Take Home Points

- CHANTER is a constellation of imaging findings associated with opioid neurotoxicity.
- The cerebellar edema, if extensive, can lead to obstructive hydrocephalus. If hydrocephalus does occur and etiology is recognized and treated appropriately the patient can have significant recovery.
- Does not involve cerebral cortex to any significant degree, making it distinct from hypoxic ischemic encephalopathy.

References

- K.S. Mallikarjun, M.S. Parsons, Z. Nigogosyan, M.S. Goyal, R.W. Eldaya. Neuroimaging Findings in CHANTER Syndrome: A Case Series. American Journal of Neuroradiology Aug 2022, 43 (8) 1136-1141; DOI: 10.3174/ajnr.A7569
- Jasne AS, Alsherbini KH, Smith MS, Pandhi A, Vagal A, Kanter D. Cerebellar Hippocampal and Basal Nuclei Transient Edema with Restricted diffusion (CHANTER) Syndrome. Neurocrit Care. Oct 2019, 31(2):288-296. doi: 10.1007/s12028-018-00666-4. PMID: 30788708; PMCID: PMC6757017.