Teaching NeuroImages: The dentate sign in subacute cerebellar ataxia

Metronidazole neurotoxicity

Mérida Terán Jiménez, MD, Philippe Salles Gándara, MD, and Alberto J. Espay, MD, MSc

Neurology® 2020;94:e878-e879. doi:10.1212/WNL.0000000000009006

Correspondence

Dr. Espay
alberto.espay@uc.edu

Figure Hyperintense dentate nucleus on brain MRI

Fluid-attenuated inversion recovery sequences 1 month after initiation of metronidazole (A) showed bilateral symmetrical hyperintensities in the dentate nucleus. Within 15 days after metronidazole discontinuation (B), the signal in the dentate had normalized.

A 79-year-old woman developed infectious periaortitis after an abdominal aortic aneurysm repair. A month later, she exhibited vertigo, dysarthria, and unsteady gait, progressing to inability to stand, painful paresthesia, and disorientation. Her examination showed dysmetria, dysdiadochokinesia, and severe cerebellar ataxia. She underwent extensive laboratory investigations, including autoimmune and paraneoplastic panels. Prominent dentate hyperintensity on T2-weighted and fluid-attenuated inversion recovery sequences had been overlooked (figure). The cerebellar syndrome, and the abnormal dentate signal, resolved within 15 days from discontinuing metronidazole. Besides encephalopathy and polyneuropathy, metronidazole can induce subacute cerebellar ataxia by selectively affecting the dentate nucleus.^{1,2} Recognizing this imaging hallmark identifies a reversible iatrogenic complication and prevents unnecessary testing.

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Study funding

No targeted funding reported.

Disclosure

M.T. Jiménez and P.S. Gándara report no disclosures relevant to the manuscript. A.J. Espay has received grant support from the NIH, Great Lakes Neurotechnologies, and the Michael J. Fox Foundation; personal compensation as a consultant/scientific advisory board member for AbbVie, Adamas, Acadia, Acorda, Neuroderm, Impax, Sunovion, Lundbeck, Osmotica Pharmaceutical, and USWorldMeds; publishing royalties from Lippincott Williams &

From CETRAM (M.T.J., P.S.G.), Santiago de Chile; and Department of Neurology (A.J.E.), UC Gardner Neuroscience Institute, Gardner Center for Parkinson's Disease and Movement Disorders, University of Cincinnati, OH.

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Wilkins, Cambridge University Press, and Springer; and honoraria from USWorldMeds, Lundbeck, Acadia, Sunovion, the American Academy of Neurology, and the Movement Disorders Society. Go to Neurology.org/N for full disclosures.

Appendix Authors

Name	Location	Role	Contribution
Mérida Terán Jiménez, MD	CETRAM, Santiago, Chile	Author	Acquisition of data, analysis and interpretation, drafting of manuscript

Appendix *(continued)*

Name	Location	Role	Contribution
Philippe Salles Gándara, MD	CETRAM, Santiago, Chile	Author	Acquisition of data, analysis and interpretation
Alberto J. Espay, MD, MSc, FAAN	University of Cincinnati	Author	Case analysis, critical revision of the manuscript

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Neurology 2020;94:e878-e879 Published Online before print February 7, 2020
DOI 10.1212/WNL.00000000000009006

This information is current as of February 7, 2020

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