Brain MRI evolution of metronidazole intoxication

A 64-year-old woman presented with a 6-month history of intermittent episodes of ataxia and dysarthria. She had been on metronidazole 1,500 mg daily for ulcerative colitis for 10 months. Cranial MRI 3 months before admission revealed hyperintensity in corpus callosum and bilateral dentate nuclei (figure 1, A–C). MRI on admission indicates less prominent hyperintensity of corpus callosum on an axial (D) and midsagittal FLAIR (E) image; note the cystic degeneration in the genu of the corpus callosum. Dentate nuclei appear normal (F).

On admission, diffusion-weighted imaging (A) and apparent diffusion coefficient (B) sequences were consistent with cytotoxic edema in corpus callosum.
callosum, whereas dentate nuclei appeared normal (figure 1F). The cumulative metronidazole dose was 450 g, relatively high,¹ which could cause white matter injury by various mechanisms (appendix e-1 on the Neurology® Web site at www.neurology.org). Although early MRI findings are typical for metronidazole toxicity,² delayed cystic necrosis is unusual.

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Author contributions: All authors were involved in clinical care and investigative workup of the patient. S.E.E. drafted the manuscript; T.K. and N.D. critically revised the manuscript.

Study funding: No targeted funding reported.

Disclosure: The authors report no disclosures relevant to the manuscript. Go to Neurology.org for full disclosures.

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Neurology 2013;80;1816-1817
DOI 10.1212/WNL.0b013e3182918cf2

This information is current as of May 6, 2013

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