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Teaching NeuroImages: Reversible paradoxical lithium neurotoxicity

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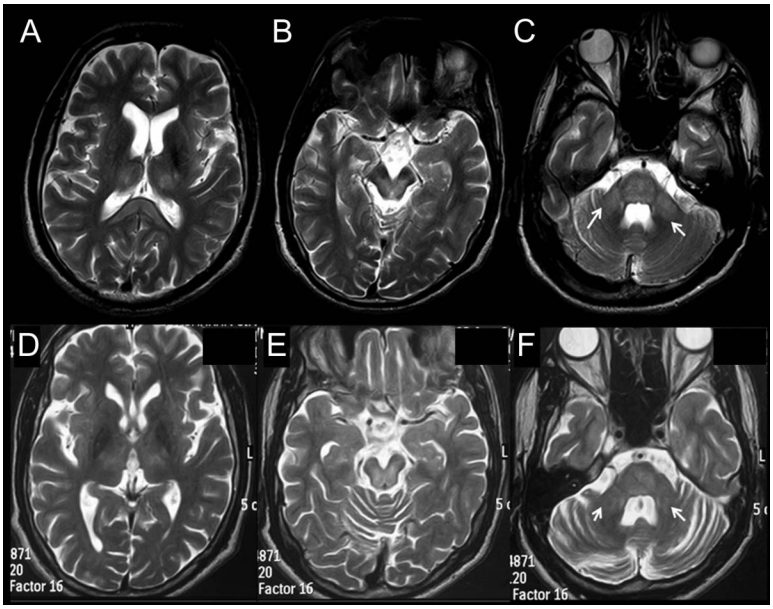
Figure Baseline cranial gadolinium-enhanced MRI



T2 hyperintensities involve (A) bilateral posterior limb of internal capsule and thalami, (B) midbrain, and (C) pons and bilateral middle cerebellar peduncles (arrows). One-month follow-up cranial MRI shows resolution of T2 hyperintensities in bilateral thalami (D), midbrain (E), and pons and bilateral middle cerebellar peduncles (F) (arrows).

A 33-year-old man with bipolar affective disorder presented with acute onset of rigidity, tremors, and confusion. He had been taking oral lithium (1,200 mg daily) for the past 2 months. Baseline blood, EEG, and CSF analyses were normal. Serum lithium level was 0.67 mEq/L (0.3–1.3). Gadolinium MRI brain showed multiple bilateral symmetric T2-weighted hyperintensities (figure, A–C). On suspicion of lithium-induced neurotoxicity, lithium was replaced with valproate. At 1-month follow-up, his extrapyramidal symptoms had resolved completely, with significant resolution noted on cranial MRI (figure, D–F). Paradoxical lithium neurotoxicity occurs at therapeutic or low serum levels due to lithium-induced toxic demyelination.[1–3]

AUTHOR CONTRIBUTIONS

Dr. Vishnu: data collection, drafting of manuscript. Dr. Kesav: data collection, review of literature. Dr. Goyal: concept and revision of manuscript. Dr. Modi: revision of the manuscript. Dr. Prabhakar: revision of the manuscript.

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DISCLOSURE

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

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