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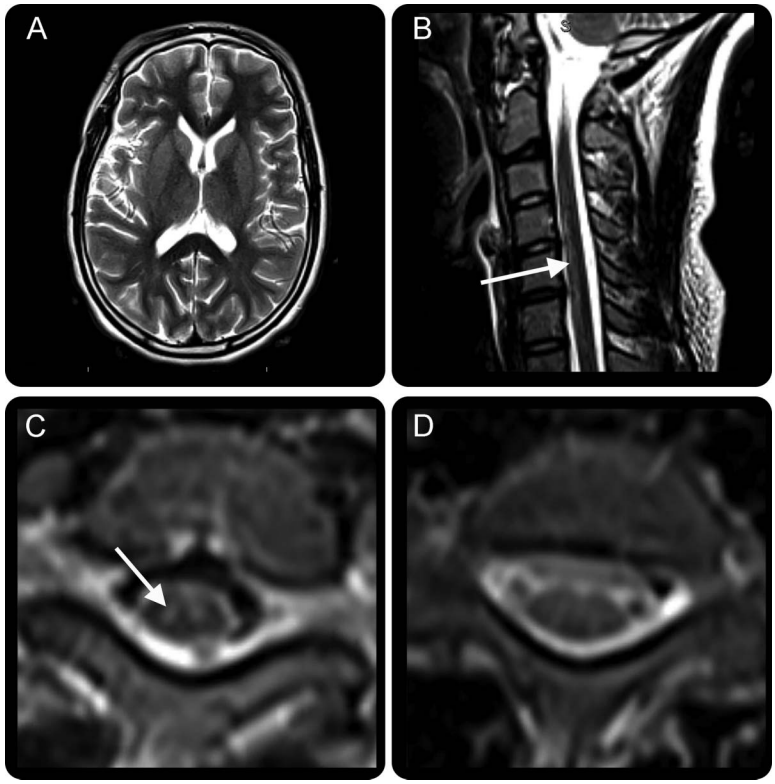
Teaching NeuroImages: NMDA encephalomyelitis with MRI abnormalities isolated to ventral spinal cord gray matter

Sarah Zubkov, MD
Puja Aggarwal Joshi, MD
Timothy M. Shepherd, MD, PhD
Sanjeev V. Kothare, MD

Correspondence to Dr. Zubkov: sarah.zubkov@gmail.com

Figure MRI spinal cord without contrast



The brain appeared normal on MRI (A) whereas sagittal cervical MRI (B) demonstrated subtle T2 hyperintensity in the ventral C4-C7 spinal cord that correlated axially with symmetric T2 hyperintensities in the ventral gray matter (C). There was no corresponding contrast enhancement. Repeat MRI after resolution of myelopathy appeared normal (D).

A 17-year-old girl presented with a month of anxiety followed by acute psychosis, catatonia, choreoathetosis, seizures, autonomic instability, lower extremity spasticity, and hyperreflexia. CSF was positive for the NMDA antibody; additional antibodies and infectious etiologies tested negative. MRI brain was normal. MRI spine revealed symmetric T2 hyperintensities in ventral gray matter (figure). EEG showed extreme delta brush. She received the following sequentially: IV gammaglobulin, methylprednisolone, ovarian teratoma resection, and plasmapheresis, only improving after rituximab. At 3 months, repeat MRI spine and motor examination results were normal. NMDA encephalitis with myelopathy is rare[1,2]; spinal cord gray matter involvement has not been reported previously.

AUTHOR CONTRIBUTIONS

Sarah Zubkov: drafting and revision of manuscript, clinical care of patient. Puja Aggarwal Joshi: clinical care of patient, revision of manuscript. Timothy M. Shepherd: interpretation and preparation of images, revision of manuscript. Sanjeev V. Kothare: clinical care of patient, revision of manuscript.

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DISCLOSURE

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