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.

STUDY FUNDING

No targeted funding reported.

DISCLOSURE

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

Download teaching slides:
Neurology.org

From NYU Langone Medical Center, New York, NY.

REFERENCES

1. Kruer MC, Koch TK, Bourdette DN, et al. NMDA receptor encephalitis mimicking seronegative neuromyelitis optica. *Neurology* 2010;74:1473–1475.
2. Pennington C, Livingstone S, Santosh C, et al. N-methyl d-aspartate receptor antibody encephalitis associated with myelitis. *J Neurol Sci* 2012;317:151–153.

Neurology®

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

Sarah Zubkov, Puja Aggarwal Joshi, Timothy M. Shepherd, et al.

Neurology 2015;85:e55-e56

DOI 10.1212/WNL.0000000000001839

This information is current as of August 10, 2015

Updated Information & Services	including high resolution figures, can be found at: http://n.neurology.org/content/85/6/e55.full
Supplementary Material	Supplementary material can be found at: http://n.neurology.org/content/suppl/2015/08/07/WNL.0000000000001839.DC1
References	This article cites 2 articles, 1 of which you can access for free at: http://n.neurology.org/content/85/6/e55.full#ref-list-1
Subspecialty Collections	This article, along with others on similar topics, appears in the following collection(s): Autoimmune diseases http://n.neurology.org/cgi/collection/autoimmune_diseases Encephalitis http://n.neurology.org/cgi/collection/encephalitis MRI http://n.neurology.org/cgi/collection/mri Transverse myelitis http://n.neurology.org/cgi/collection/transverse_myelitis
Permissions & Licensing	Information about reproducing this article in parts (figures, tables) or in its entirety can be found online at: http://www.neurology.org/about/about_the_journal#permissions
Reprints	Information about ordering reprints can be found online: http://n.neurology.org/subscribers/advertise

Neurology® is the official journal of the American Academy of Neurology. Published continuously since 1951, it is now a weekly with 48 issues per year. Copyright © 2015 American Academy of Neurology. All rights reserved. Print ISSN: 0028-3878. Online ISSN: 1526-632X.