Bilateral extensive corticospinal tract lesions in MOG antibody–associated disease

Vincenzo Mastrangelo, MD, Gian Maria Ascoli, MD, Matteo Foschi, MD, Marina Padroni, MD, Lucia Pavolucci, MD, Patrizia Cenni, MD, and Pietro Querzani, MD

Neurology® 2020;95:648–649. doi:10.1212/WNL.00000000000010662

Correspondence

Dr. Mastrangelo
vincenzo.mastrangel2@studio.unibo.it

Figure 1 Brain and spinal cord MRI at presentation

T2 sequences show bilateral hyperintensity of corticospinal tracts, extending from the internal capsule to pons (A), and a longitudinally extending hyperintense lesion of the spinal cord (B). Axial fluid-attenuated inversion recovery (FLAIR) sequences document bilateral lesions of corticospinal tracts (C) and middle cerebellar peduncles (D). Axial T2-fast field echo (T2-FFE) slice shows involvement of the central portion of the spinal cord (E, T3 level).

A healthy 53-year-old man developed acute flaccid paraplegia, spinal sensory level, and urinary retention. Examination revealed bilateral pronator drift. MRI demonstrated demyelinating non-enhancing lesions involving corticospinal tracts (CSTs), middle cerebellar peduncles, and spinal cord (figure 1). CSF analysis disclosed lymphocytic pleocytosis and mildly elevated protein.

From the Department of Biomedical and Neuromotor Sciences (V.M., G.M.A.), University of Bologna; and Neurology Unit (M.F., M.P., L.P., P.Q.) and Neuroradiology (P.C.), S. Maria delle Croci Hospital-AUSL Romagna, Ambito Di Ravenna, Italy.

Go to [Neurology.org/N](https://www.neurology.org/N) for full disclosures. Funding information and disclosures deemed relevant by the authors, if any, are provided at the end of the article.

Figure 2 Brain and spinal cord MRI after treatment

Follow-up brain and spinal cord MRI after 24 days shows reduction of corticospinal tract hyperintensity in axial fluid-attenuated inversion recovery images (A); spinal cord MRI demonstrates resolution of cord lesion in sagittal T2 sequences (B).

Euroimmun fixed cell-based assay for serum anti-myelin oligodendrocyte glycoprotein (MOG) and anti-aquaporin-4 (AQP4) antibodies showed low positivity for MOG immunoglobulin G (IgG) (1:10). Treatment with high-dose glucocorticoids and IV immunoglobulin was effective (figure 2). Long CST lesions were found in anti-AQP4 IgG-seropositive neuromyelitis optica spectrum disorders.¹ Bilateral extensive lesions following CST are a novel finding in MOG-related CNS autoimmunity.²

Study funding

No targeted funding reported.

Disclosure

The authors report no disclosures relevant to the manuscript. Go to [Neurology.org/N](https://www.neurology.org/N) for full disclosures.

Appendix Authors

Name	Location	Contribution
Vincenzo Mastrangelo, MD	Department of Biomedical and Neuromotor Sciences, University of Bologna, Italy	Designed and conceptualized study, analyzed the data, drafted the manuscript
Gian Maria Ascoli, MD	Department of Biomedical and Neuromotor Sciences, University of Bologna, Italy	Acquisition of data, drafted the manuscript
Matteo Foschi, MD	Neurology Unit, S. Maria delle Croci Hospital-AUSL Romagna, Ambito Di Ravenna, Italy	Revised the manuscript for intellectual content
Marina Padroni, MD	Neurology Unit, S. Maria delle Croci Hospital-AUSL Romagna, Ambito Di Ravenna, Italy	Acquisition of data
Lucia Pavolucci, MD	Neurology Unit, S. Maria delle Croci Hospital-AUSL Romagna, Ambito Di Ravenna, Italy	Acquisition of data
Patrizia Cenni, MD	Neuroradiology, S. Maria delle Croci Hospital-AUSL Romagna, Italy	Acquisition of data, revised the manuscript for intellectual content
Pietro Querzani, MD	Neurology Unit, S. Maria delle Croci Hospital-AUSL Romagna, Ambito Di Ravenna, Italy	Revised the manuscript for intellectual content

References

- Kim HJ, Paul F, Lana-Peixoto MA, et al. MRI characteristics of neuromyelitis optica spectrum disorder: an international update. *Neurology* 2015;84:1165–1173.
- Denève M, Biotti D, Patsoura S, et al. MRI features of demyelinating disease associated with anti-MOG antibodies in adults. *J Neuroradiol* 2019;46:312–318.

Neurology® Online CME Program

Earn CME while reading *Neurology*. This program is available only to online *Neurology* subscribers. Read the articles marked CME, go to [Neurology.org](https://www.neurology.org), and click on CME. This will provide all of the information necessary to get started. The American Academy of Neurology (AAN) is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to sponsor continuing medical education for physicians. *Neurology* is planned and produced in accordance with the ACCME Essentials. For more information, contact AAN Member Services at 800-879-1960.

Neurology®

Bilateral extensive corticospinal tract lesions in MOG antibody–associated disease

Vincenzo Mastrangelo, Gian Maria Ascoli, Matteo Foschi, et al.

Neurology 2020;95:648-649 Published Online before print August 14, 2020

DOI 10.1212/WNL.0000000000010662

This information is current as of August 14, 2020

Updated Information & Services	including high resolution figures, can be found at: http://n.neurology.org/content/95/14/648.full
References	This article cites 2 articles, 1 of which you can access for free at: http://n.neurology.org/content/95/14/648.full#ref-list-1
Subspecialty Collections	This article, along with others on similar topics, appears in the following collection(s): All Demyelinating disease (CNS) http://n.neurology.org/cgi/collection/all_demyelinating_disease_cns 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 © 2020 American Academy of Neurology. All rights reserved. Print ISSN: 0028-3878. Online ISSN: 1526-632X.