Anterior spinal artery infarction causing man-in-the-barrel syndrome

Eoin P. Flanagan, MBBCh

Andrew McKeon, MBBCh

Brian G. Weinshenker, MD

Video

Neurology.org/cp

A 54-year-old man with history of hypertension, smoking, and prior myocardial infarctions developed quadriplegia over 90 minutes. Leg strength normalized within hours. Neurologic examination months later revealed man-in-the-barrel syndrome characterized by bilateral arm weakness and atrophy but preserved leg strength (video at Neurology.org/cp). Cervical magnetic resonance T2-weighted sequences showed “pencil-like” lesions on sagittal (figure, A) and “snake-eye pattern” lesions on axial images (figure, B, arrow), characteristic of spinal cord infarction.¹ Incidentally detected absence of left vertebral artery flow void (figure, B, arrowheads) led to magnetic resonance angiography, which confirmed occlusion

Figure MRI of antiphospholipid syndrome associated anterior spinal artery infarct

Sagittal T2-weighted images demonstrate a pencil-like hyperintensity in the anterior spinal cord (A) and axial images show a snake-eye pattern (B, arrow) and absence of the left vertebral artery flow void (B, arrowheads). Magnetic resonance angiography shows an occluded left vertebral artery (C).

Department of Neurology, Mayo Clinic, Rochester, MN.

Funding information and disclosures are provided at the end of the article. Full disclosure form information provided by the authors is available with the **full text of this article** at Neurology.org/cp.

Correspondence to: weinb@mayo.edu

(figure, C). β_2 -glycoprotein-1 antibodies and lupus anticoagulant were detected and persisted (for >12 weeks), confirming antiphospholipid syndrome. The patient was counseled to cease smoking and was treated with warfarin. Man-in-the-barrel syndrome typical of watershed infarcts between anterior/middle cerebral artery territories has also been reported with other bilateral cerebral pathology (metastases, hemorrhagic contusions, or multiple sclerosis), pontine damage (central pontine myelinolysis, odontoid fracture, or ischemia), cervical cord injury (anterior spinal artery infarction or degenerative spine disease including Klippel-Feil deformity), anterior horn cell disease (bi-brachial variant of amyotrophic lateral sclerosis), and bilateral brachial plexopathies (postoperative or infections, e.g., Lyme disease).² In our patient, vertebral artery occlusion likely caused anterior spinal artery hypoperfusion resulting in selective injury to anterior horn cells, which are highly vulnerable to ischemia, sparing corticospinal and spinothalamic tracts.¹

REFERENCES

1. Weidauer S, Nichtweiss M, Lanfermann H, Zanella FE. Spinal cord infarction: MR imaging and clinical features in 16 cases. *Neuroradiology* 2002;44:851–857.
2. Antelo MJ, Facal TL, Sanchez TP, Facal MS, Nazabal ER. Man-in-the-barrel: a case of cervical spinal cord infarction and review of the literature. *Open Neurol J* 2013;7:7–10.

STUDY FUNDING

No targeted funding reported.

DISCLOSURES

E.P. Flanagan reports no disclosures. A. McKeon receives research support from the Guthy Jackson Charitable Foundation. B.G. Weinshenker serves on Data Safety Monitoring Boards for Novartis, Biogen Idec, and Mitsubishi Pharmaceuticals; serves on the Editorial Boards of *Canadian Journal of Neurological Sciences* and *Turkish Journal of Neurology*; is author on a patent re: NMO-IgG for diagnosis of neuromyelitis optica, technology licensed to R.S.R. Ltd.; serves as a consultant for Elan Pharmaceuticals, GlaxoSmithKline, Ono Pharmaceuticals, Asahi Kasei Medical Company, Chugai Pharmaceuticals, Alexion Pharmaceuticals, and Chord Pharmaceuticals; and receives research support from the Guthy Jackson Charitable Foundation. Full disclosure form information provided by the authors is available with the **full text of this article at Neurology.org/cp**.

Download *Neurology*[®] *Clinical Practice* for the iPad[®]

The same information so critical to your practice is now brought to you on the iPad[®]. This dynamic app optimizes the best in digital technology to enhance the reading experience with article-sharing features, multimedia links, and more.

Enjoy the benefits:

- Easy-to-read articles you can share via email and social media
- Adjustable text sizing with “pinch and zoom” technology
- Engaging multimedia videos, images, and data supplements
- Ability to store downloaded issues
- Convenient notification when a new issue is available

For further information and download, go to: <http://bit.ly/NCPapp>