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Neurology Publish Ahead of Print

DOI: 10.1212/WNL.000000000207753

Inverted patellar reflex localizes the site of spinal epidural arteriovenous fistula

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Equal Author Contribution:

Contributions:

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Marcus V. Pinto: Drafting/revision of the manuscript for content, including medical writing for content; Major role in the acquisition of data; Additional contributions (in addition to one or more of the above criteria)

Figure Count:

1

Table Count:

0

Search Terms:

[252] All Spinal Cord, [3] Arteriovenous malformation, [16] Clinical neurology examination

Acknowledgment:

Study Funding:

The authors report no targeted funding.

Disclosure:

The authors report no relevant disclosures.

Preprint DOI:

Received Date:

2023-03-14

Accepted Date:

2023-06-20

Handling Editor Statement:

Submitted and externally peer reviewed. The handling editor was Resident and Fellow Section Editor Whitley Aamodt, MD, MPH.

A 75-year-old male presented with episodes of bilateral lower extremity weakness and back pain. Examination demonstrated intact strength with spasticity of the lower extremities. While the right patellar reflex exhibited an extension response with clonus, the left leg demonstrated knee flexion (video). This inverted patellar reflex implicated left L2-L4 segment/root dysfunction, leading to an absence of quadriceps response, alongside pathologic hyperreflexia triggering activation of the opposing hamstring.¹ Together, these findings suggested a thoracic myelopathy with superimposed left radiculopathy at L2-L4. MRI of the thoracic spine demonstrated T2 hyperintensity from T6 through the conus with abnormal flow voids (Figure 1A). Spinal angiogram confirmed an epidural arteriovenous fistula (AVF) originating from the L2/L3 arteries with an epidural venous pouch at the left L3 that was embolized with onyx (Figure 1B). The mechanism of myelopathy and radiculopathy in spinal AVFs is venous hypertension and congestion that may lead to ischemia and degeneration.²

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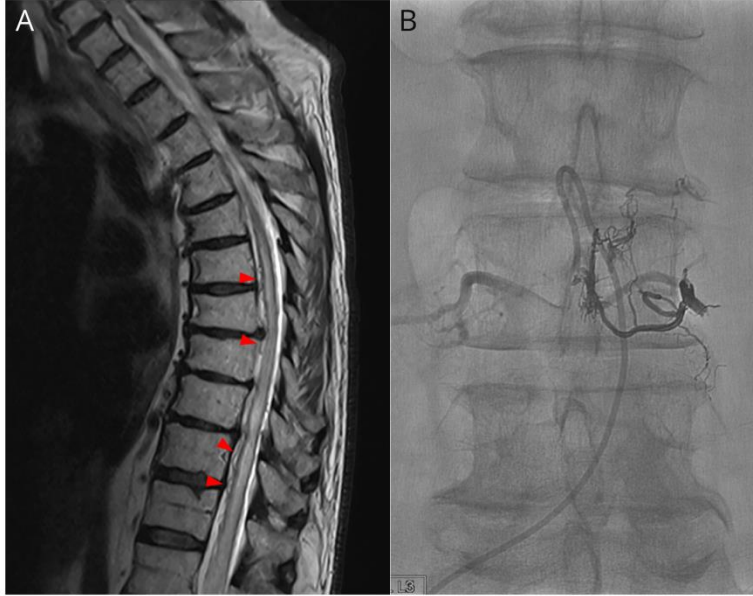
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2. Muralidharan R, Saladino A, Lanzino G, et al. The clinical and radiological presentation of spinal dural arteriovenous fistula. *Spine* 2011;36(25):E1641-E47.

Video/Figure Legends:

Video: The inverted patellar reflex (patient's left leg) is characterized by flexion of the lower limb due to hyperreflexia of the hamstring reflex (L5-S1) with concomitant absent quadriceps response (L2-L4), whereas the right patellar (L2-L4 segmental innervation) reflex is hyperreflexic with clonus. Asymmetric hyperreflexia, left greater than right, is shown by sustained (left) and nonsustained (right) ankle clonus.

Figure 1: (A) Sagittal MRI of the thoracic spine demonstrating diffuse T2 hyperintensity of the spinal cord with abnormal flow voids (arrows) and (B) spinal artery angiogram identifying an L2/L3 epidural arteriovenous fistula with a venous pouch at the level of the left L3 nerve root.



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Neurology published online August 14, 2023

DOI 10.1212/WNL.0000000000207753

This information is current as of August 14, 2023

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