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Spinal Cord Infarction: Are We Concerned Enough?

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Keywords

Spinal Cord Infarction; MRI; MRA; Cerebral Strokes

Abbreviations

SCI: Spinal Cord Infarction; MRI: Magnetic Resonance Imaging; DWIBS: Diffusion-Weighted Whole-Body Imaging with Background Body Signal Suppression; MRA: Magnetic Resonance Angiography; NFL: Neurofilament Light Protein.

Editorial

Spinal cord infarction (SCI) (which may be spontaneous like cerebral strokes or peri-procedural as a complication of vascular surgery) constitutes almost 6% of all acute myelopathic syndromes and 1.2% of all strokes. But is it that uncommon?

SCI is often misdiagnosed due to its non-specific initial symptoms and the possibility of mimicking other conditions like transverse myelitis, leading to delayed diagnosis and potentially poor outcomes (only 47% of patients ambulate independently on follow-up, with younger patients having poorer outcomes) [1]. In many situations, infarction in the spinal cord (misunderstood as demyelinating pathology) underwent immunomodulator therapy, sometimes inviting unnecessary costs and unwanted complications. Plasmapheresis in this disease may precipitate hemodynamic instability, increasing vascular ischemia and increasing deficits. The clinical presentation of SCI includes acute to sub-acute onset severe paraplegia or tetraplegia (92%), sensory deficits (85%), autonomic dysfunction (76%), and back pain (70%) [2]. An absence of cranial nerve involvement and normal brain MRI with the above presentation warrant ruling out of spinal cord stroke. In a clinically suspected 90 patients with an initially normal MRI, a repeat MRI performed 1.5–42 days later showed abnormalities consistent with SCI in 83 patients [2].

Specific MRI sequences, such as spinal DWI, DWIBS (diffusion-weighted whole-body imaging with background body signal suppression), and spinal MRA, are important in all cases of acute spinal cord pathology. In doubtful cases, a repeat MRI of the spine should be in the protocol. Though we are yet to have guidelines regarding stroke intervention in acute spinal cord infarction, there are already many instances of successful treatment with systemic thrombolysis (good outcomes were noted in 89% of cases, with few cases treated in an extended time window had no adverse outcome) [1] and effective intra-arterial thrombolytic therapy [3].

So, besides searching for classical diagnostic findings in MRI (bilateral hyperintense lesions in the anterior horns: owl's eyes on transverse sections, pencil-like hyperintensities on sagittal sequences) [1], we may search for other supportive findings: significantly higher neurofilament light protein (NFL) in serum (can be distinguished from acute myelitis by the ratio between NFL and the largest sagittal lesion area on MRI), more prolonged tibial somatosensory evoked potential latency, and shorter lesion length on MRI (compared to myelitis) [4].

Therefore, we should be more cautious about spinal cord infarction because a proper diagnosis may open the option for an immediate intervention (possibly more in the future), prevent serious sequelae, avoid unnecessary intervention and possible medicolegal litigation.

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