Ventral subpial and central cord enhancement in spinal neurosarcoidosis: the reverse trident sign.

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A 64-year-old female presented with 18-months of progressive scalp-neck dysesthesias, left leg weakness and urinary urgency. MRI revealed a longitudinally extensive transverse T2-hyperintensity, from obex to thoracic spine, with ventral subpial and central contrast enhancement[1] (Fig.1). CSF revealed mild hyperproteinorrachia and oligoclonal bands. Body CT-PET, MRI brain, and malignancy-granulomatous screenings were unremarkable (Suppl.Table.1). Isolated neurosarcoidosis was diagnosed and treatment with corticosteroids, rituximab, and infliximab yielded marked clinical and radiographic improvements over 2.5 years (Fig.1). A recognized radiographic presentation of neurosarcoidosis is the trident sign, characterized by dorsal subpial and central enhancement.[2] In this patient, the pattern was inverted, with ventral prominence, a finding we term the “reverse trident sign”. Both appearances reflect the prominent blood-CNS barrier leakiness, with leptomeningeal predilection, of neurosarcoidosis. Considering the diagnostic challenges of isolated spinal neurosarcoidosis and its responsiveness to immunotherapy, recognizing alternative radiographic presentations is crucial for accurate diagnosis and effective management.

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Figure 1. The reverse trident sign in neurosarcoidosis. *Sagittal T2 MRI demonstrating longitudinally extensive hyperintensity (A,C,E,G) with subpial cervical contrast enhancement (sagittal T1; B,D,F,H). Axial post-gadolinium MRI showing ventral subpial and central enhancement (the ‘reverse trident’ sign; yellow outline; M-P). T2 signal and cord swelling improved markedly with time. Drug timings shown.*

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Consent. The patient has provided informed written consent to share anonymized data (Mayo IRB 08-007846-128)

Competing interests statement.

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