MRI ANALYSIS IN 62 CASES OF SARCOIDOSIS-ASSOCIATED MYELITIS IDENTIFIES CHARACTERISTIC IMAGING FEATURES AND CLUES TO PATHOGENESIS

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BACKGROUND

• Sarcoïdosis-associated myelitis (SAM) is a rare manifestation of sarcoidosis
• It presents a diagnostic challenge as many of the clinical and radiological features may overlap with other inflammatory spinal cord disorders
• Physicians frequently fail to recognize neurosarcoidosis as a specific cause of myelitis
• Identifying characteristic clinical, imaging and CSF features of SCS is critically important to facilitate timely diagnosis and treatment

METHODS

• Retrospective study of patients diagnosed with SAM at the Johns Hopkins Transverse Myelitis Center
• We included patients with a myelopathic syndrome in whom MRI spine was available from the acute phase of the myelopathy
• Patients without biopsy-proven granulomatous disease were excluded
• MRI spine with and without contrast was reviewed in each case to identify lesion morphology and enhancement patterns.

RESULTS

Clinical characteristics Total (n=62)
Male 33 (53%)
Mean age, years (SD) 47 (11)
Ethnicity
African American 30 (48%)
Caucasian 29 (47%)
Other 3 (5%)
Prior diagnosis of sarcoidosis 13 (21%)
Temporal profile of symptom evolution
Chronic (>3 weeks to nadir) 50 (81%)
Subacute (2 to 21 days to nadir) 9 (14%)
Acute (6 to 48 hours to nadir) 3 (5%)
Myelopathic symptoms
Sensory symptoms 54 (87%)
Motor symptoms 33 (53%)
Bladder/bowel dysfunction 19 (31%)

MRI patterns Total (n=62)
A. Longitudinally extensive myelitis 28
B. Short tumefactive myelitis 14
C. Spinal meningitis/meningoradiculitis 14
D. Anterior myelitis with disc degeneration 6
E. Atypical non-enhancing 1

A. Longitudinally extensive myelitis with dorsal subpial enhancement:

B. Short tumefactive myelitis:

C. Spinal meningitis:

D. Anterior myelitis with disc degeneration:

CONCLUSIONS

• Distinct imaging patterns occur in SAM and recognition of these features may aid in differentiating this myelopathy from other subacute or chronic evolving myelopathies
• Enhancement is typically seen in a dorsal subpial or meningeal/radicular distribution, but can also occur at areas of mechanical stress
• The previously-described trident sign was identified in 6 cases overall (9%)
• Enhancement patterns suggest that the blood-spinal-cord barrier may play a role in the development of SAM lesions