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

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BACKGROUND

- Sarcoidosis-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

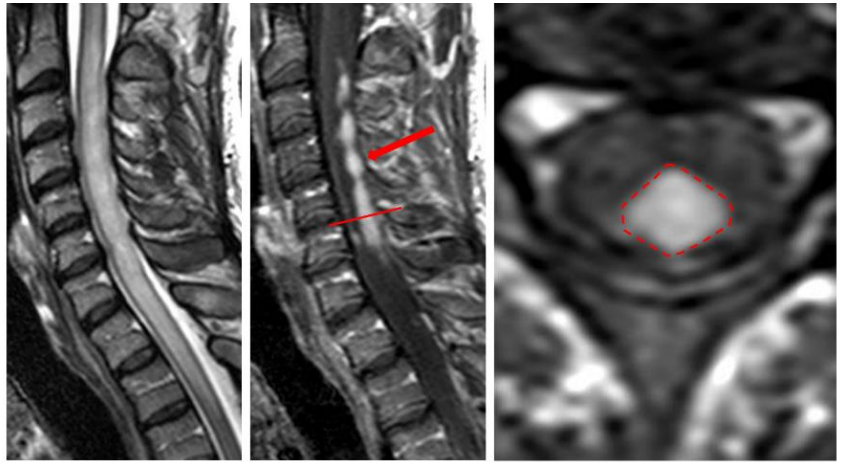
- Retrospective study of patients diagnosed with SAM at the Johns Hopkins Transverse Myelitis Center
- We included patients with a myelopathic syndrome in whom MRI spine was available from the acute phase of the myelopathy
- Patients without biopsy-proven granulomatous disease were excluded
- MRI spine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

RESULTS

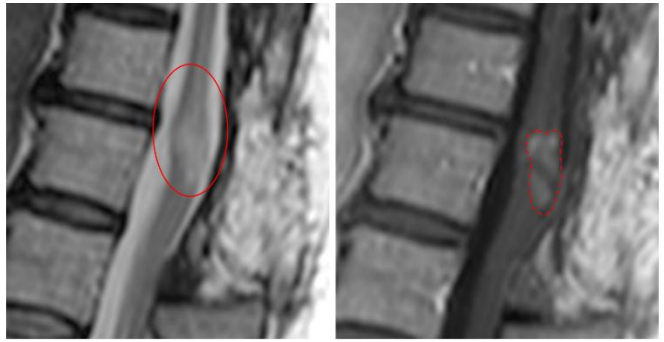
Clinical characteristics	Total (n=62)
Male	33 (53%)
Mean age, years (SD)	47 (11)
Ethnicity	
African American	30 (48%)
Caucasian	29 (47%)
Other	3 (5%)
Prior diagnosis of sarcoidosis	13 (21%)
Temporal profile of symptom evolution	
Chronic (>3 weeks to nadir)	50 (81%)
Subacute (2 to 21 days to nadir)	9 (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

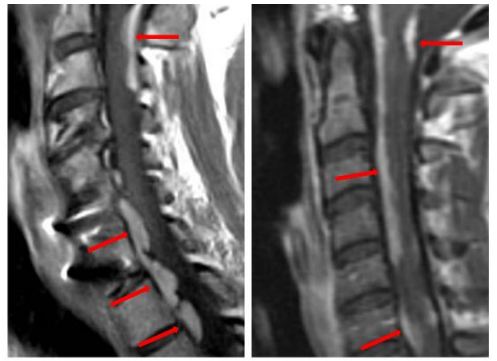
A. Longitudinally extensive myelitis with dorsal subpial enhancement:



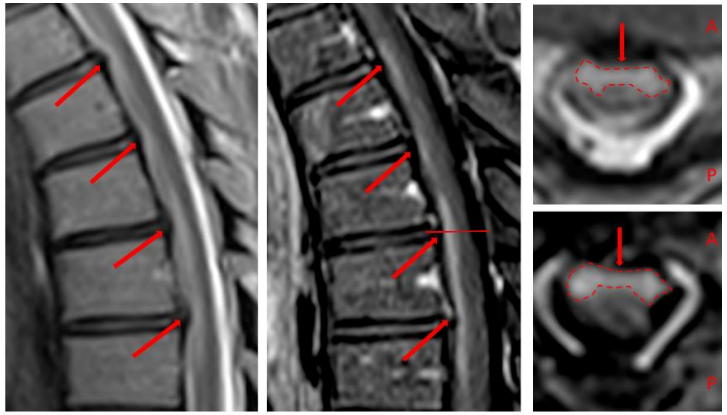
B. Short tumefactive myelitis:



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