MRI AS A TOOL IN THE DIAGNOSIS OF AFM

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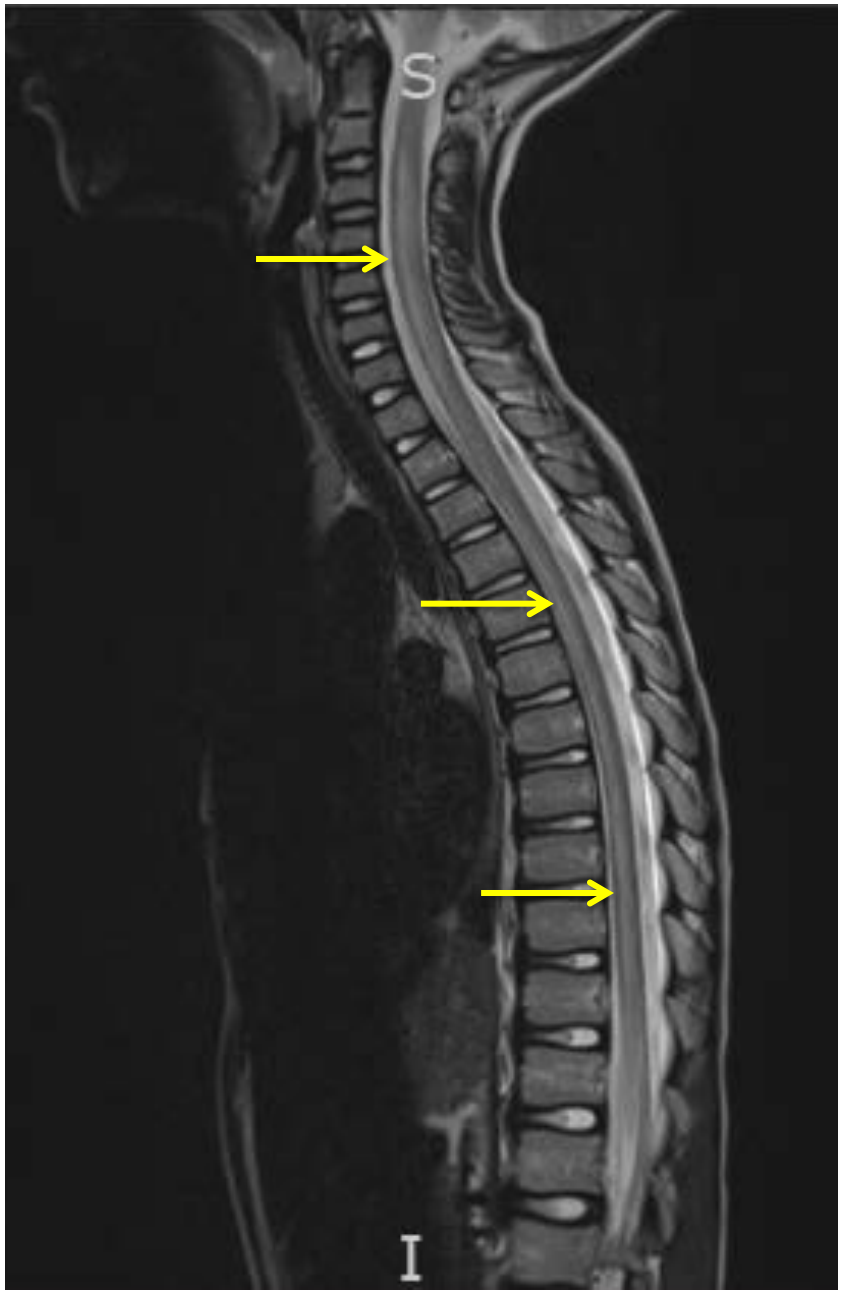
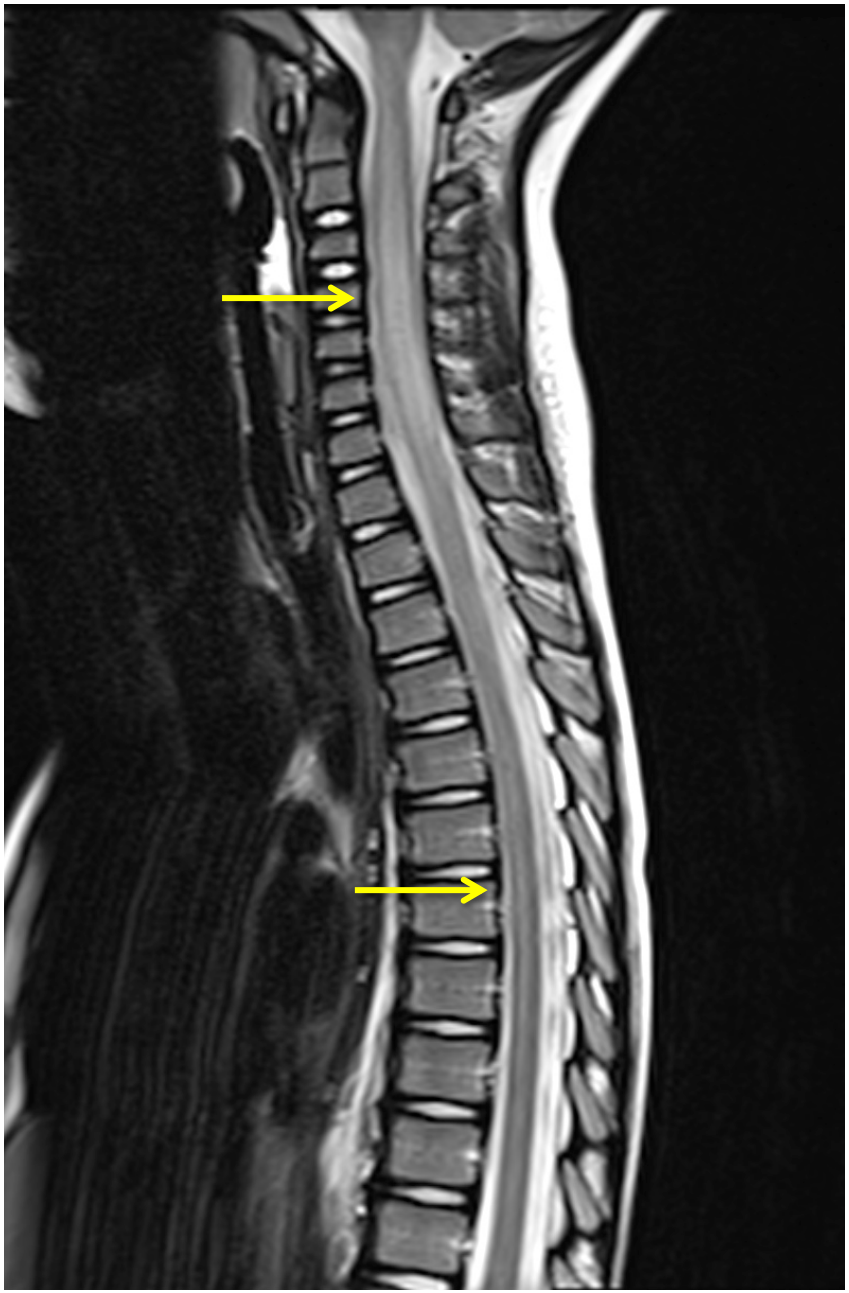
AFM: Acute sagittal T2/STIR images





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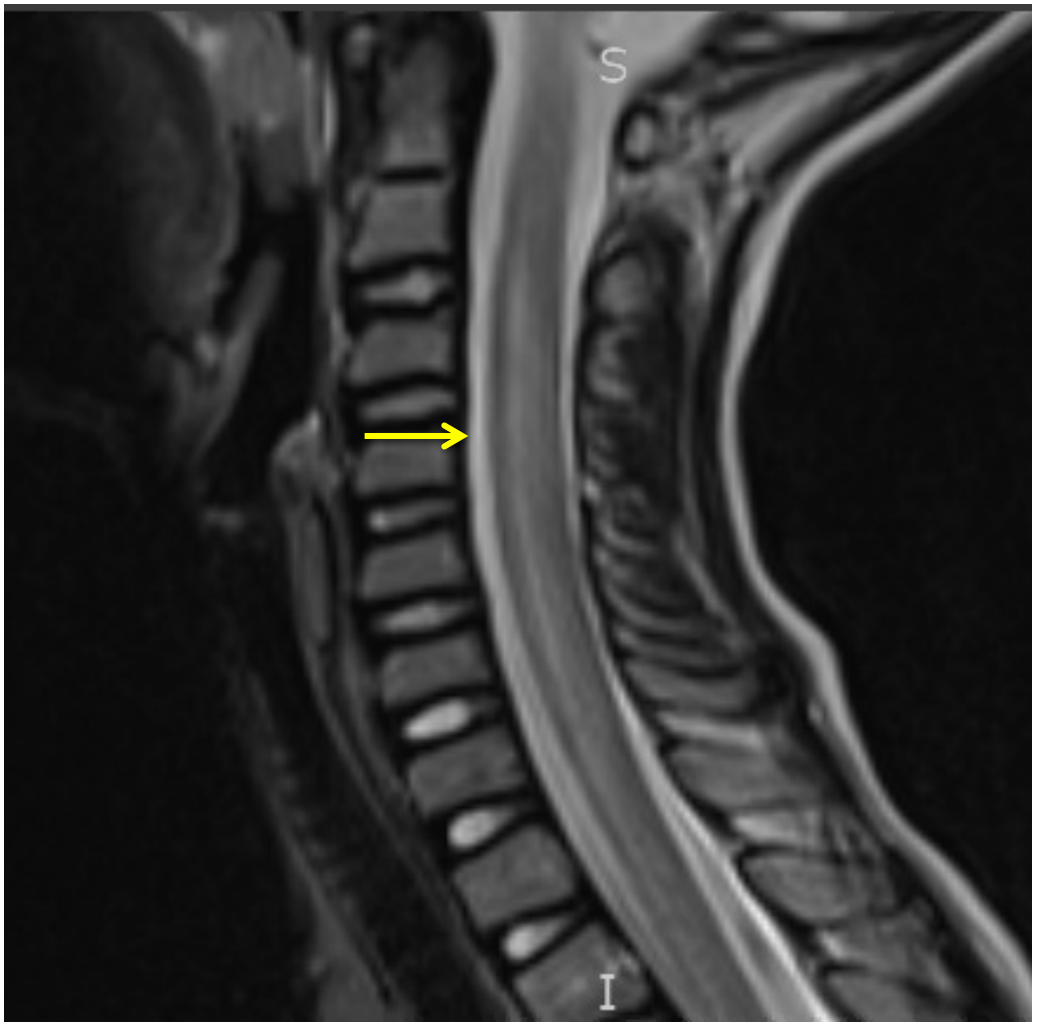
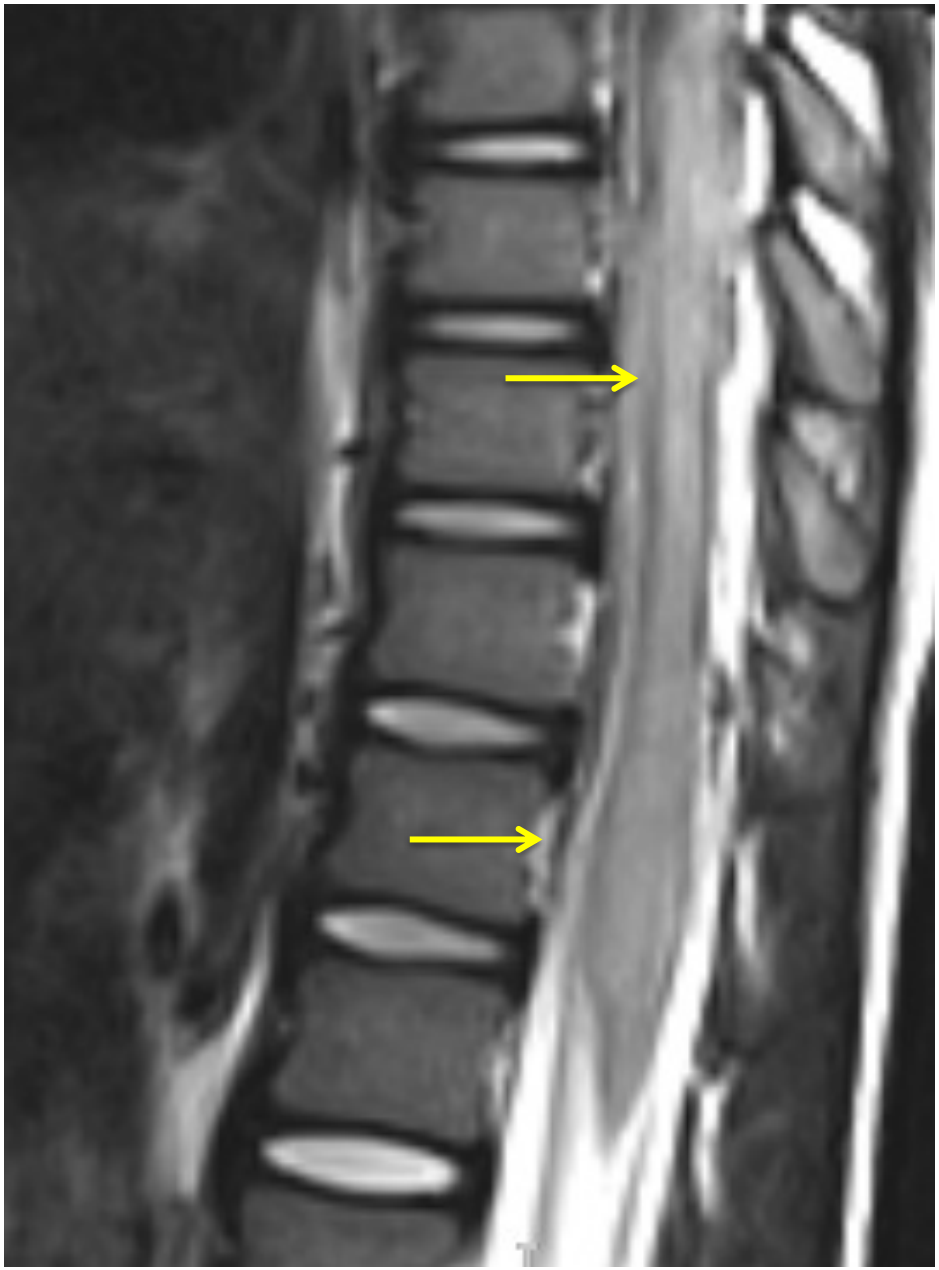


AFM: Acute sagittal T2/STIR images



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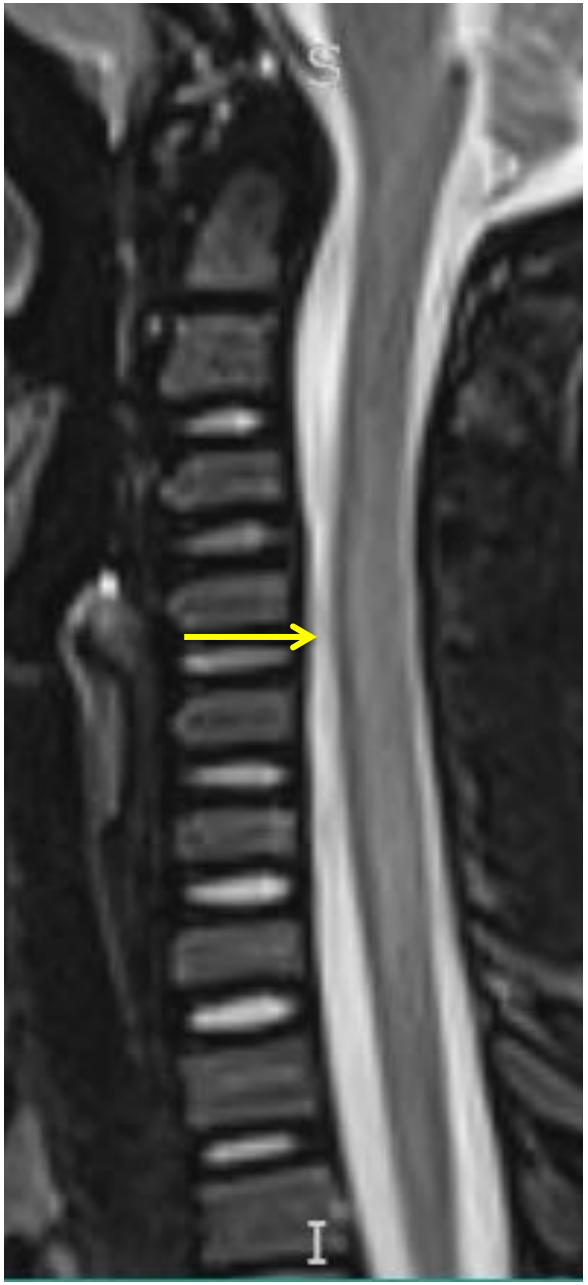
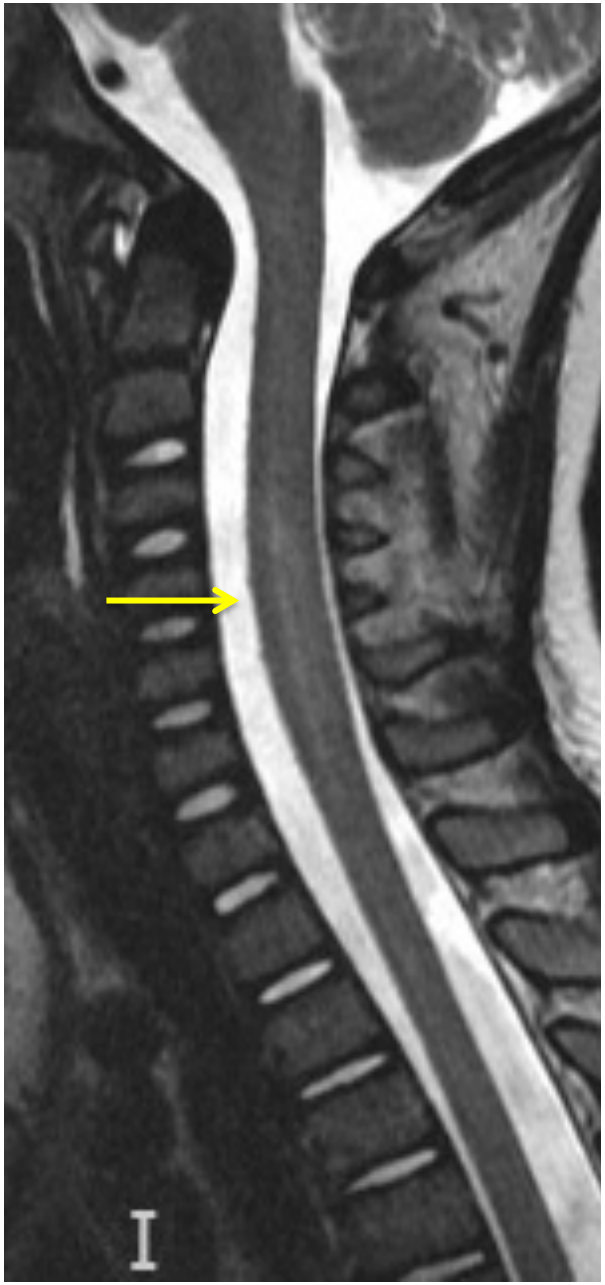
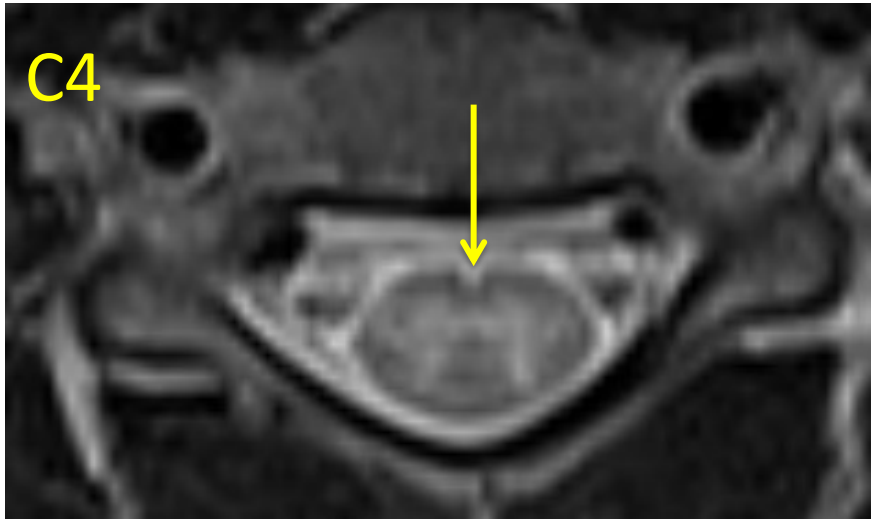
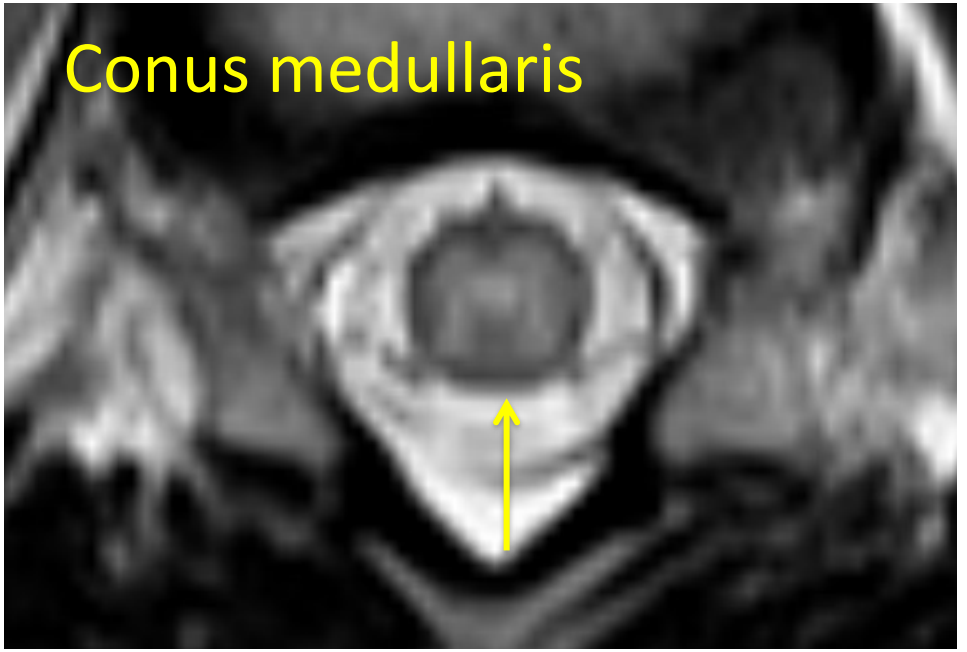
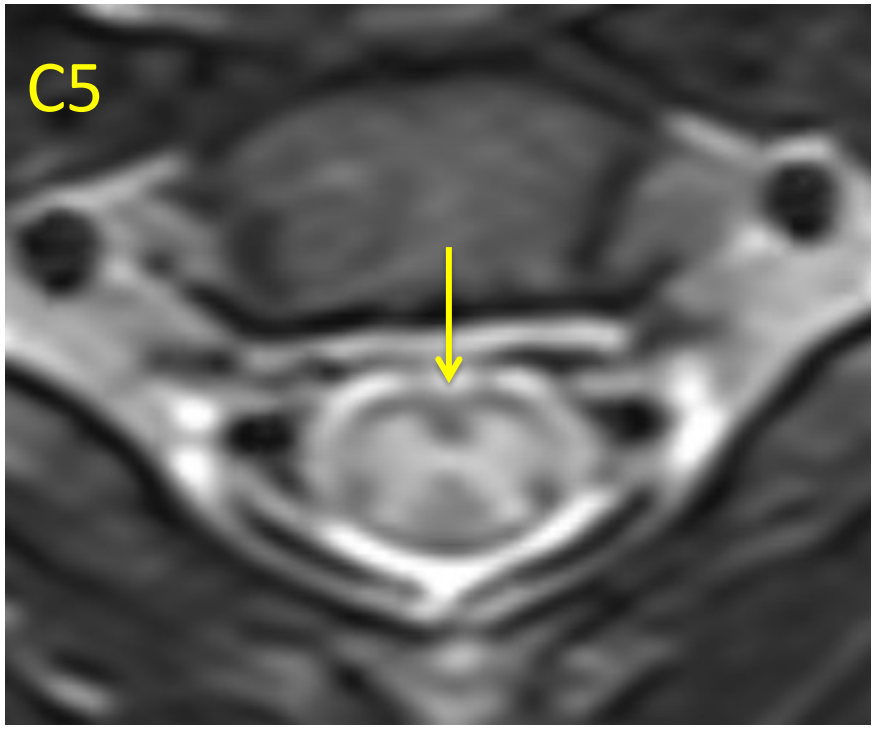


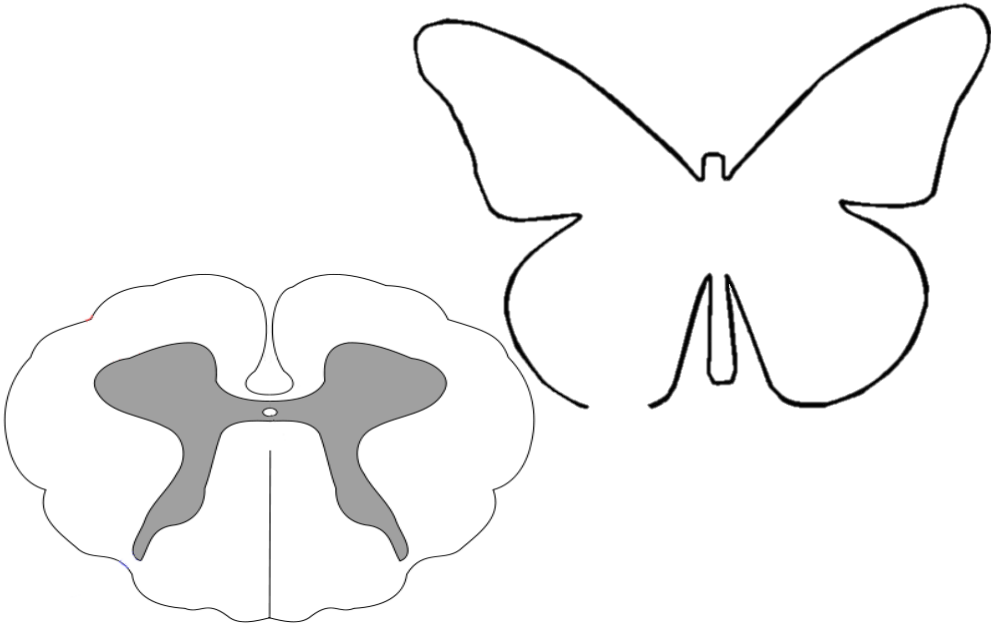


AFM: Acute axial T2 images

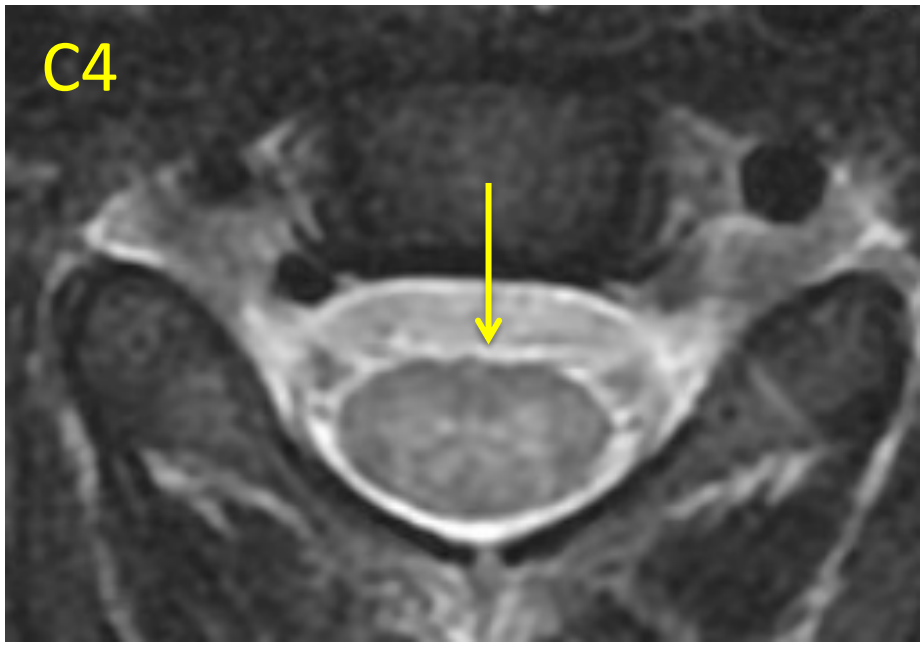


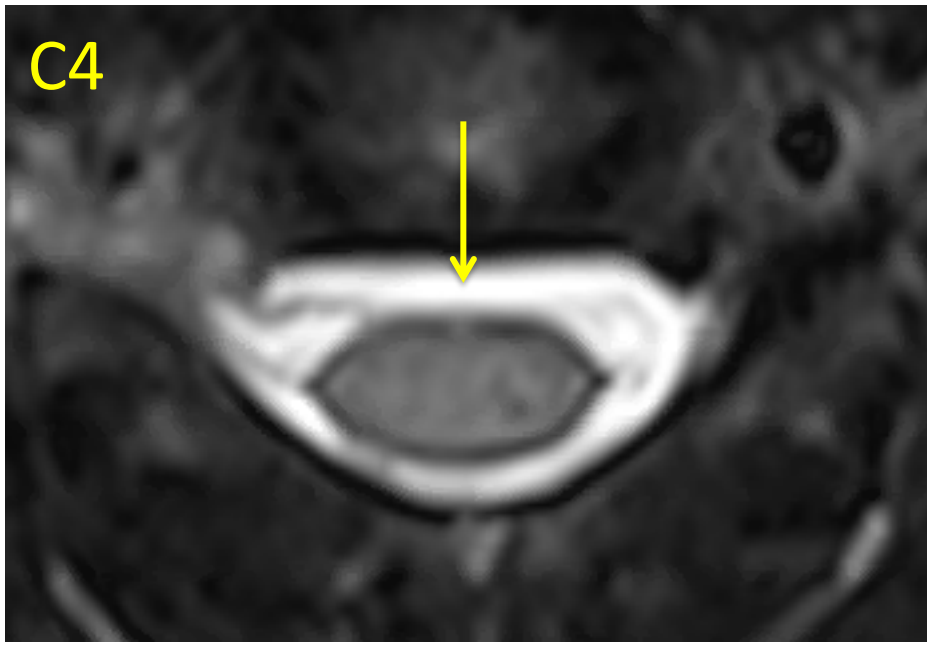


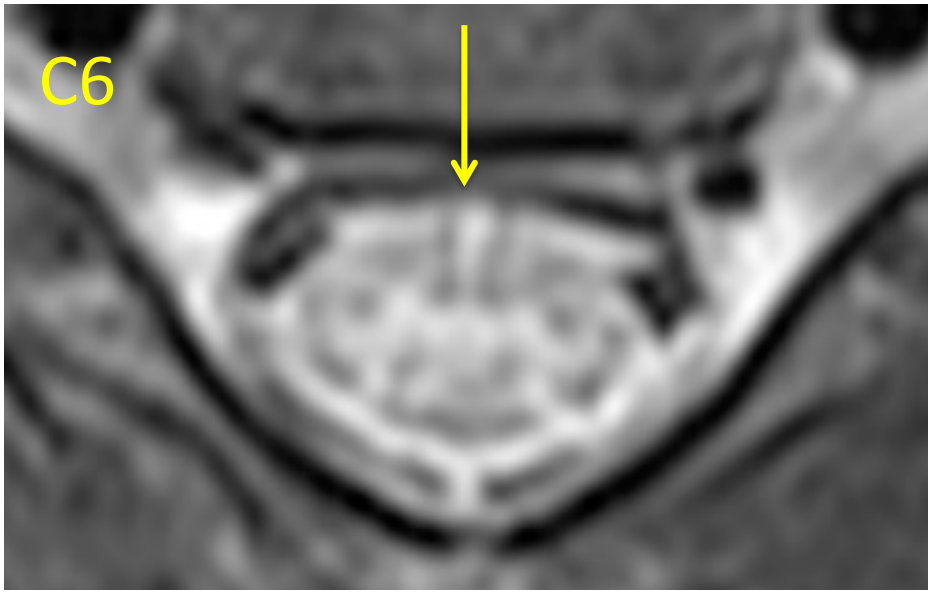




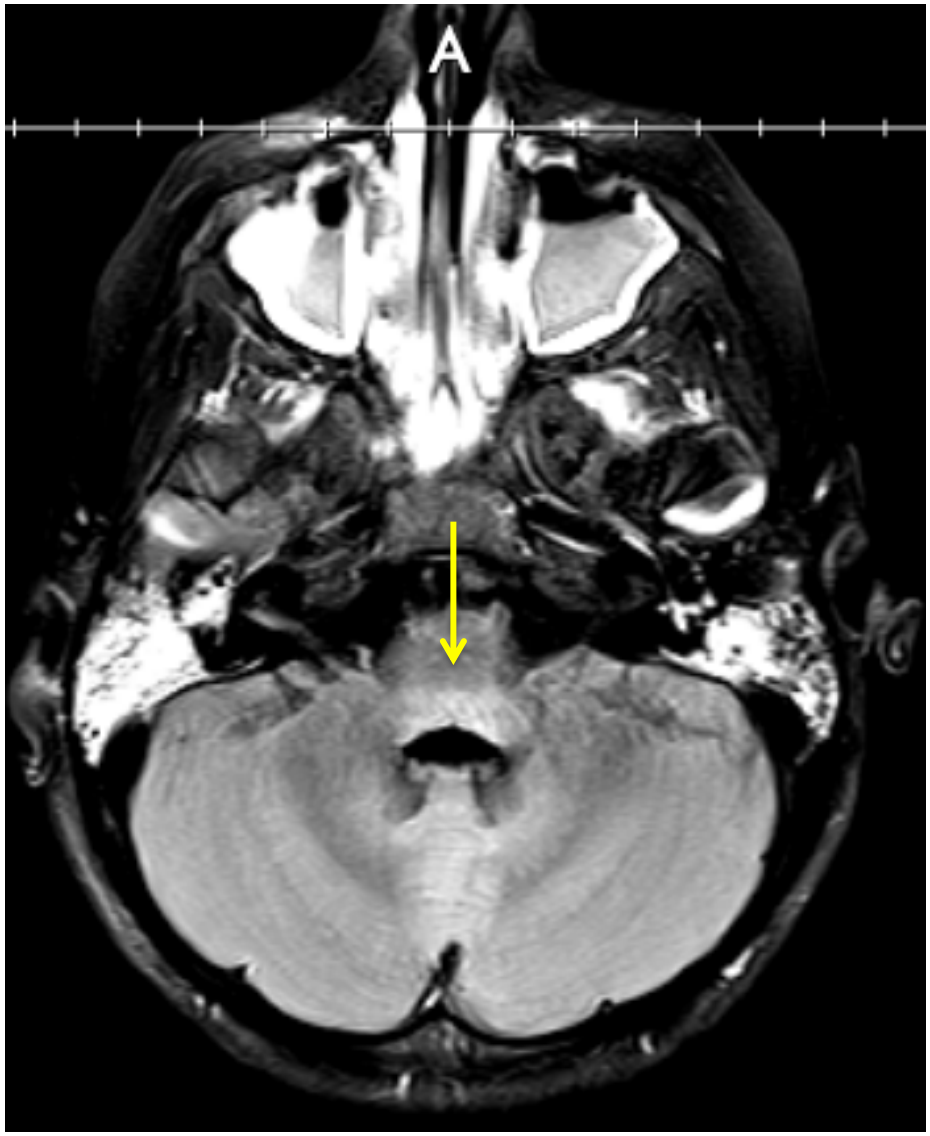
AFM: Acute axial T2 images, spectrum of abnormalities

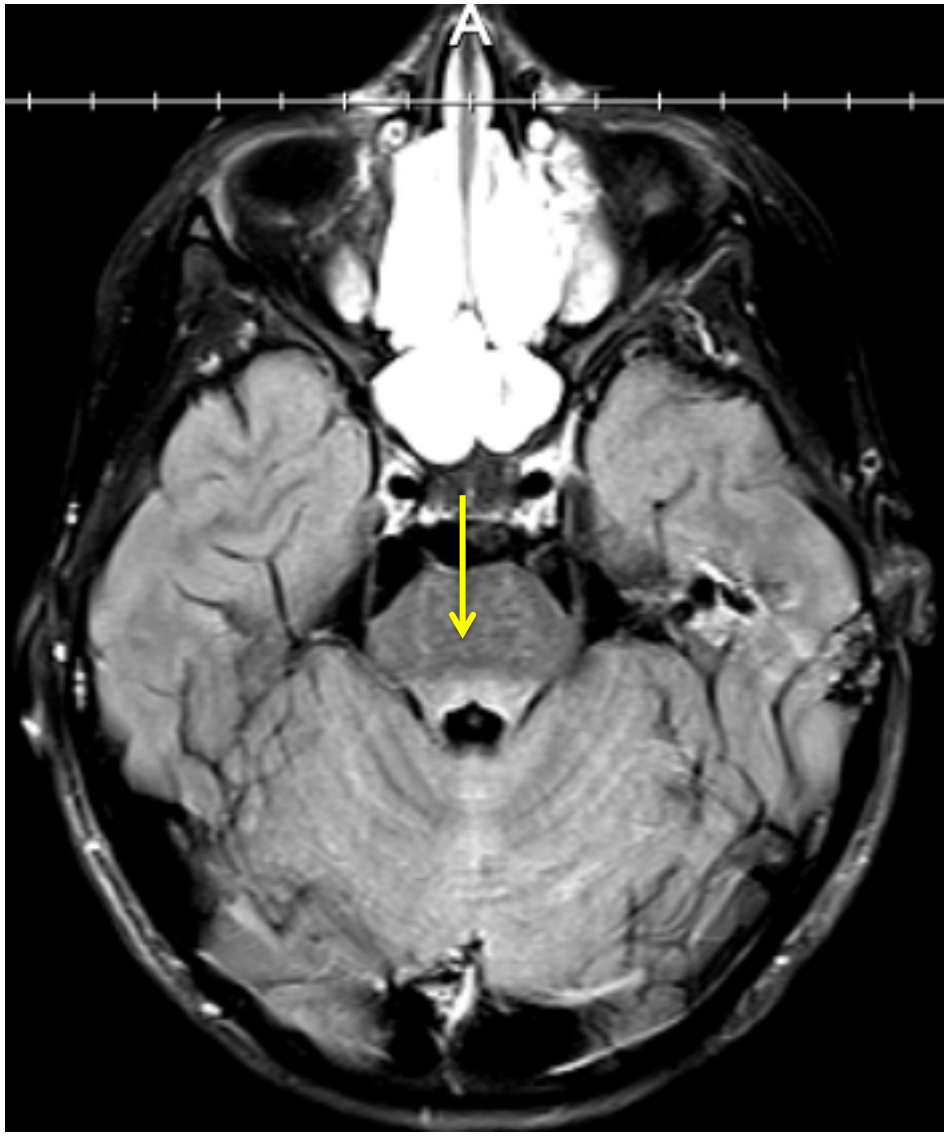






AFM: Brainstem abnormalities





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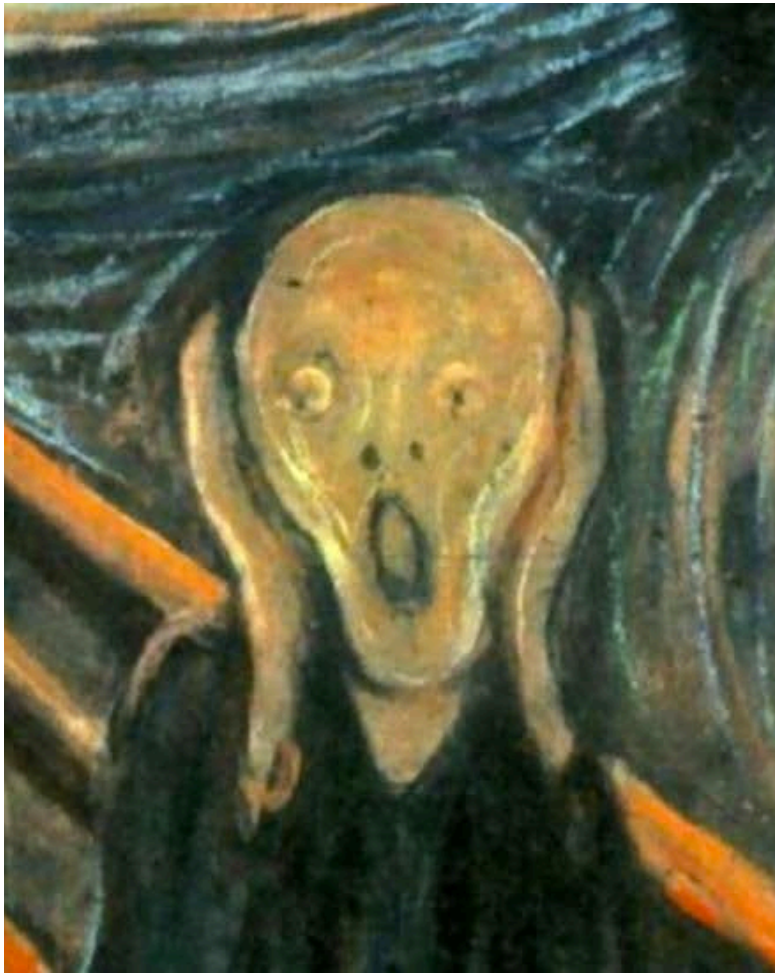
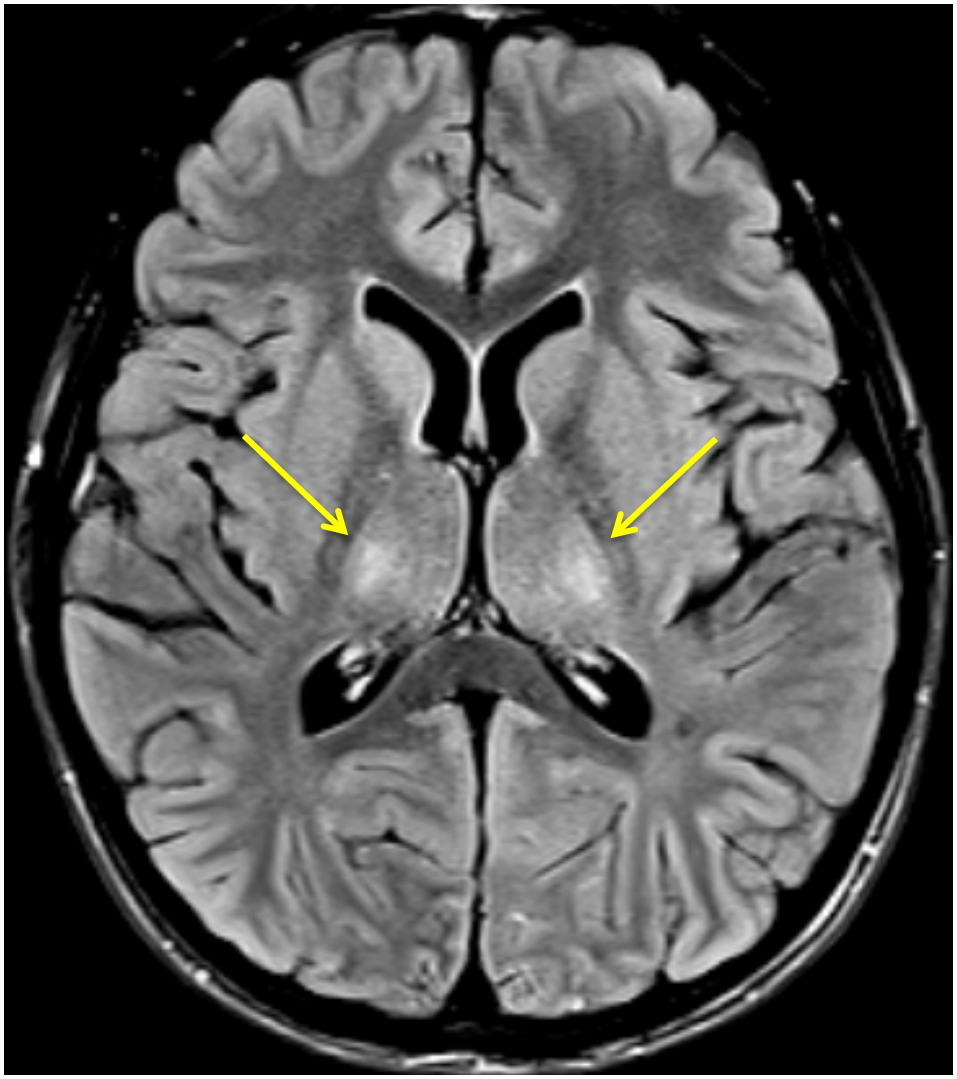
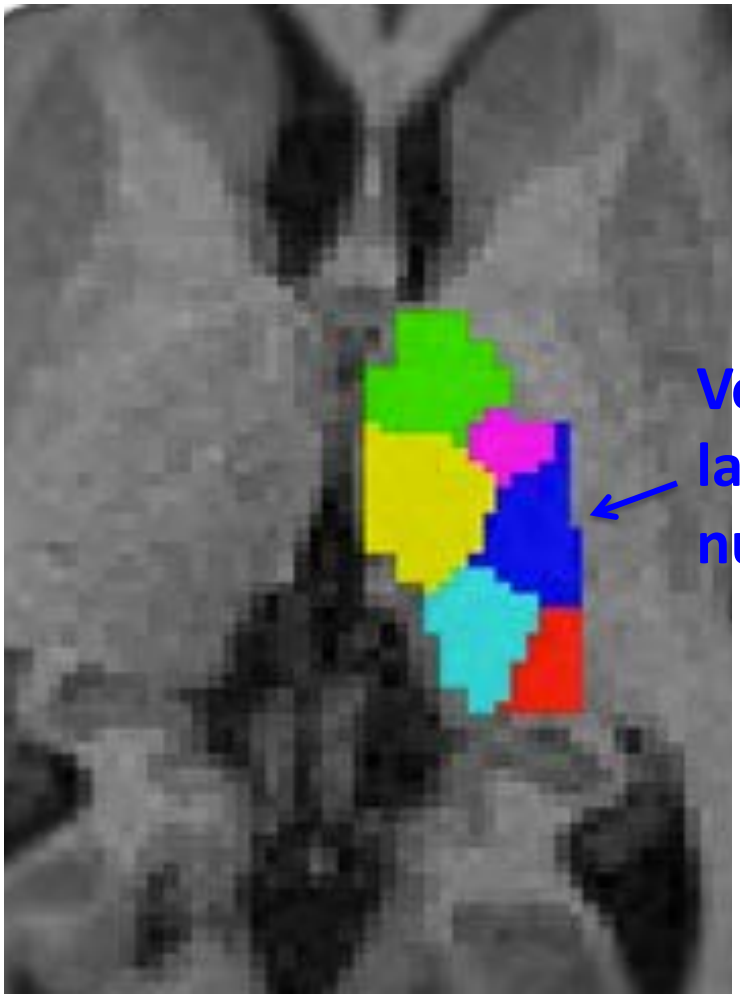
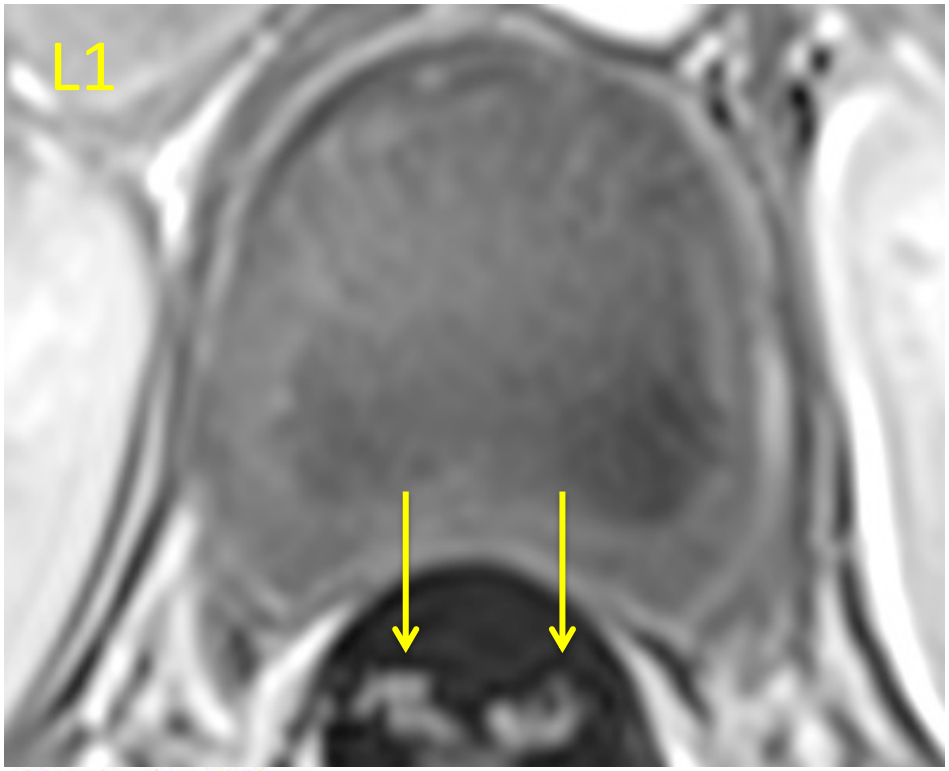


AFM: Supratentorial abnormalities?





AFM: Ventral nerve root enhancement

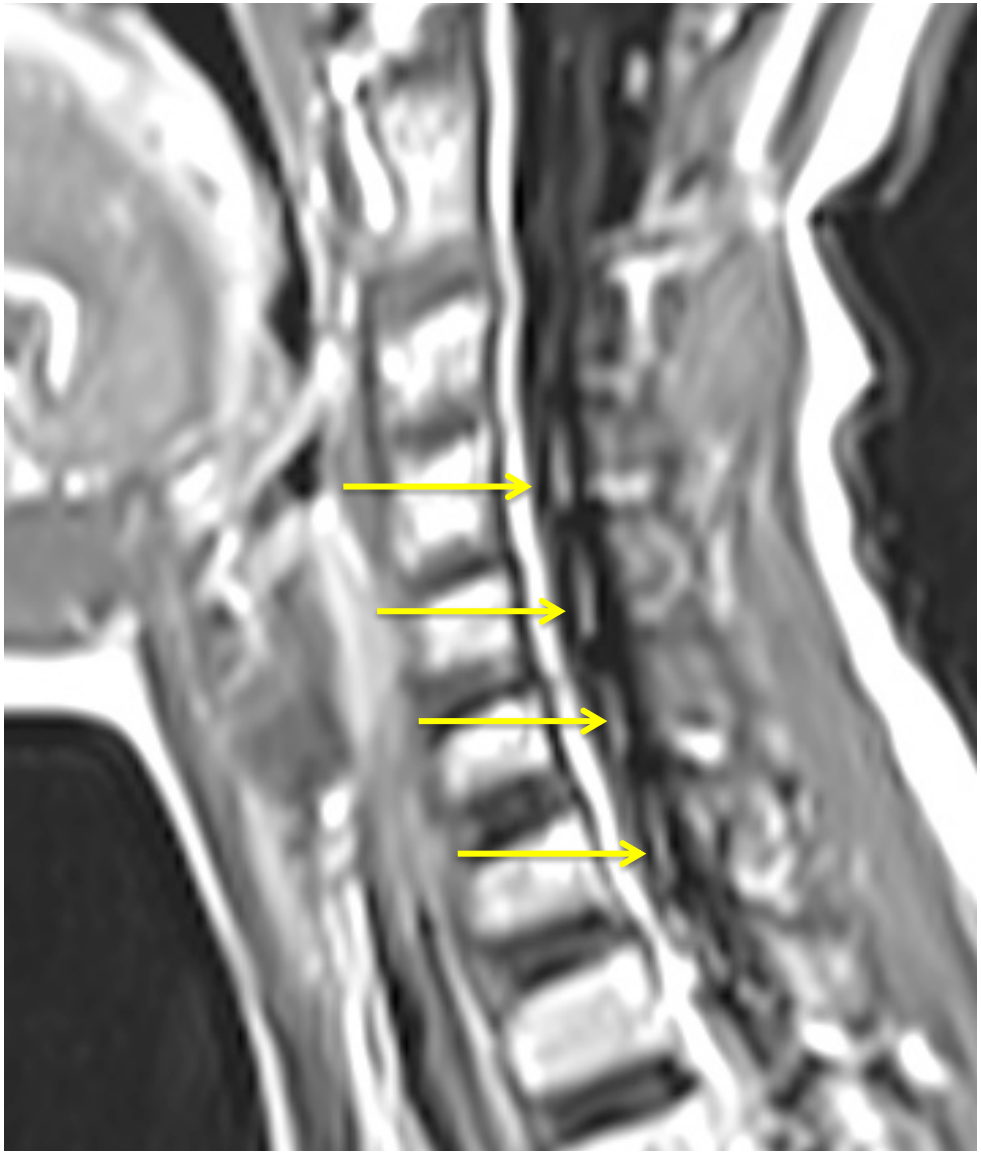


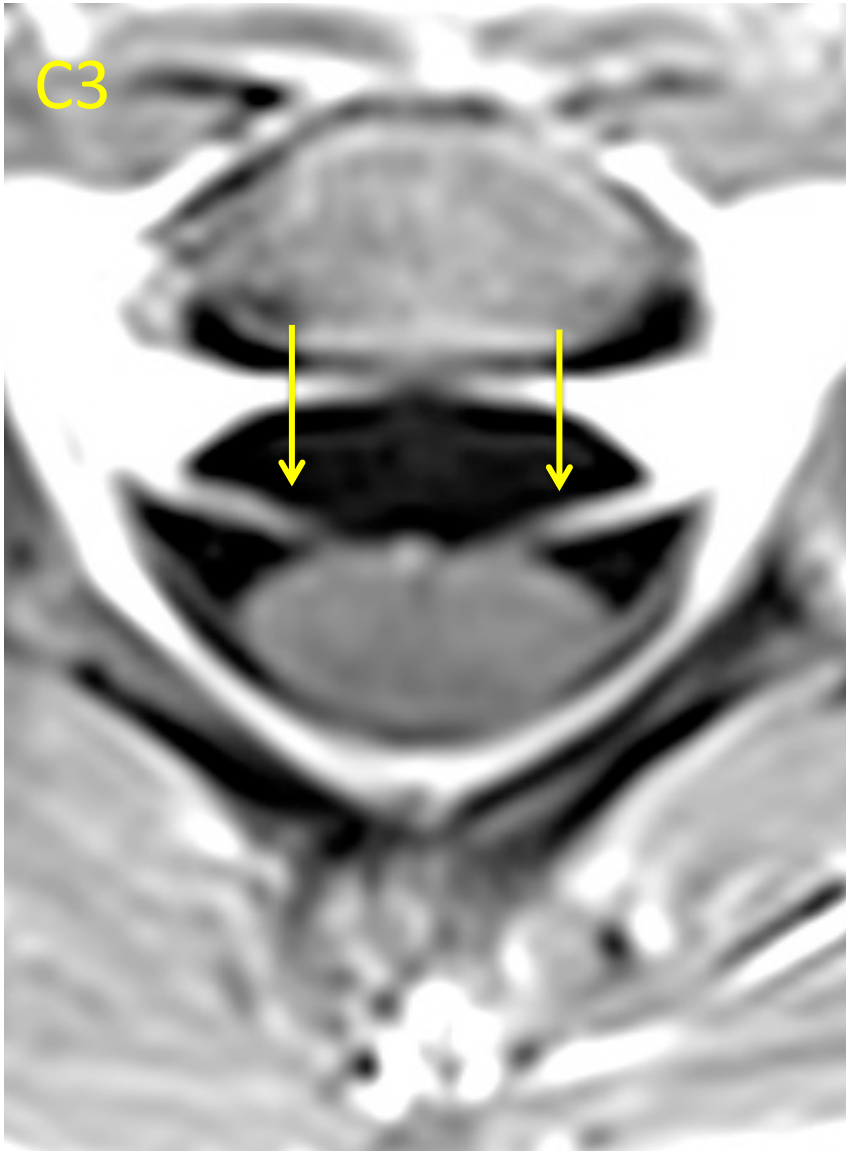
Original article

Serial MRI findings of acute flaccid myelitis during an outbreak of enterovirus D68 infection in Japan

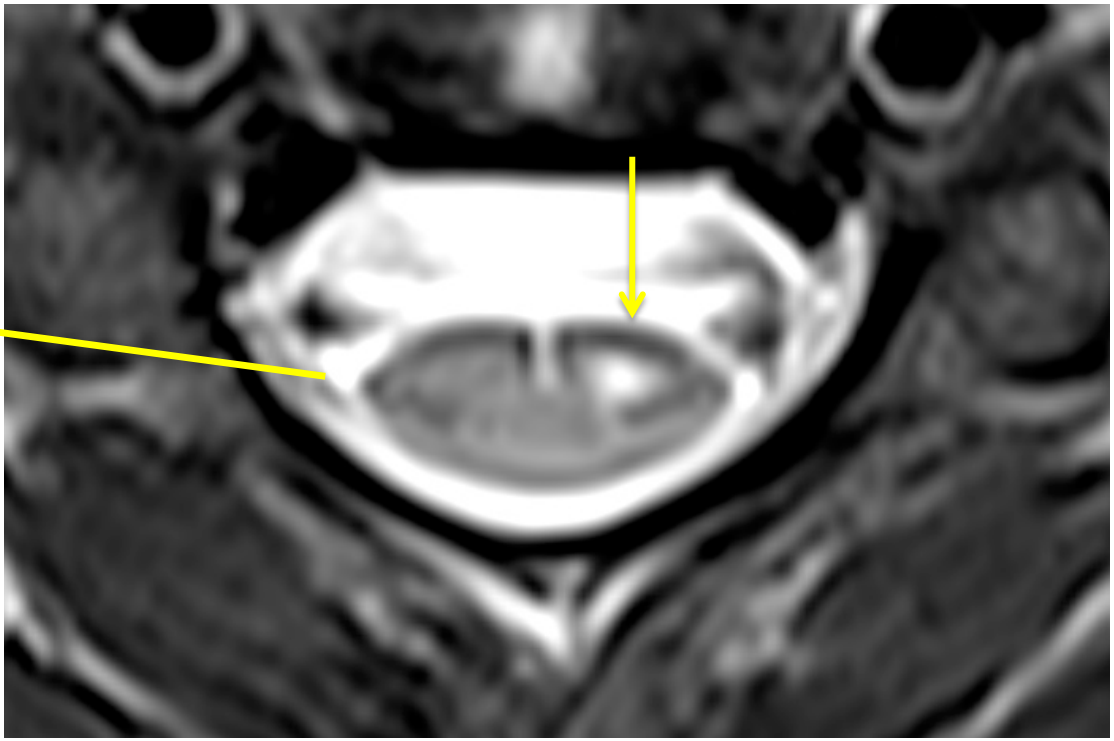
Akihisa Okumura [a,*,1], Harushi Mori [b,1], Pin Fee Chong [c], Ryutaro Kira [c]
Hiroyuki Torisu [d], Sawa Yasumoto [e], Hiroyuki Shimizu [f], Tsuguto Fujimoto [g]
Keiko Tanaka-Taya [g], the Acute Flaccid Myelitis Collaborative Study Investigators

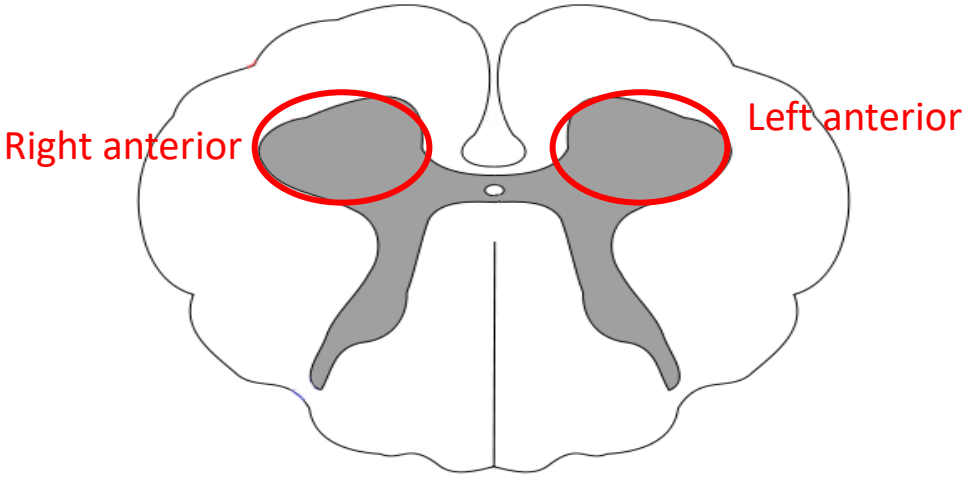
AFM: Ventral nerve root enhancement





AFM: Subacute/chronic appearance





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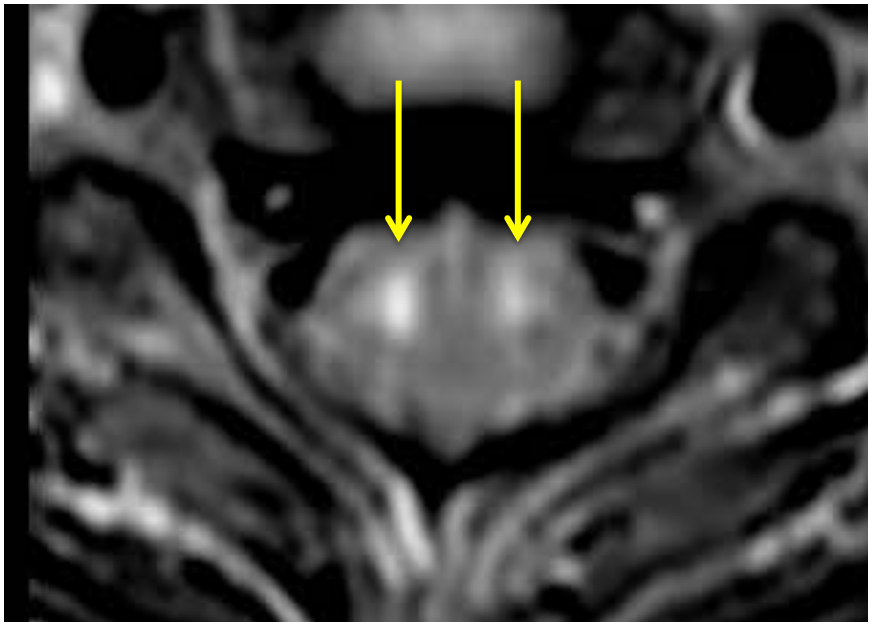


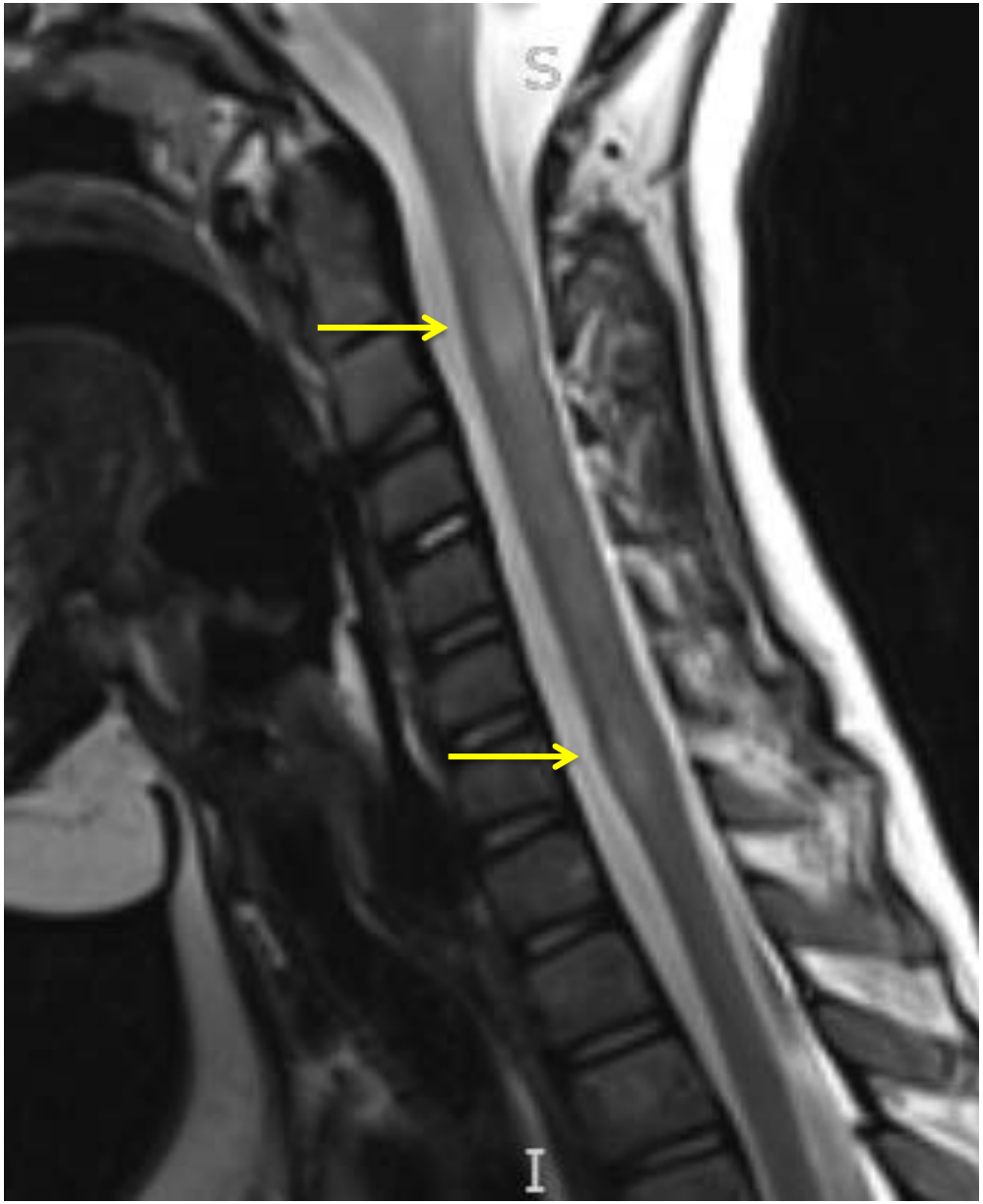
AFM: Subacute imaging characteristics in the Johns Hopkins cohort

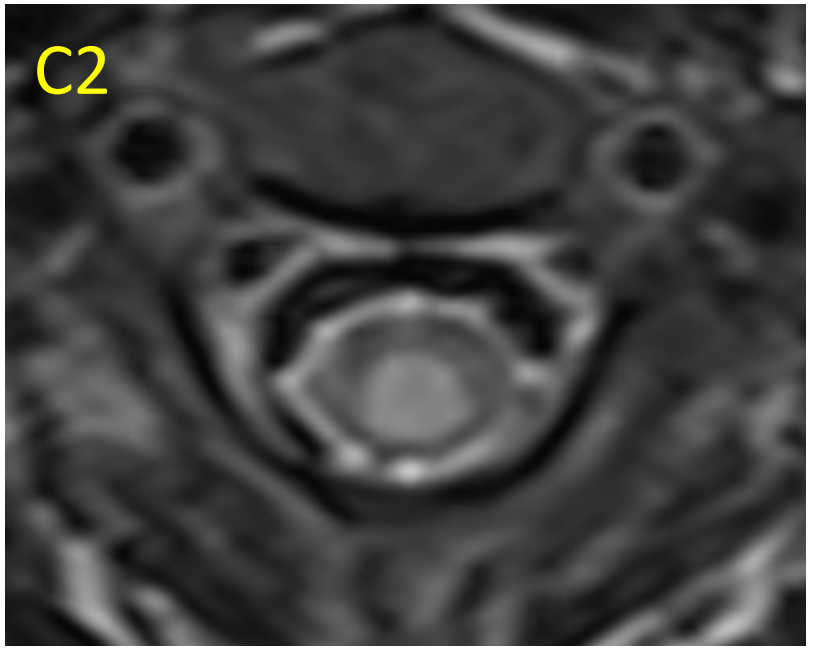
	Result
Total patients, n	20
Time to follow-up MRI, median (range)	64 days (18 to 129)
Anterior horn cell T2-hyperintensity, n	20 (100%)
White matter T2-hyperintensity, n	0 (0%)
Anterior horn T1-hypointensity, n	5 (25%)
Cervical ventral nerve root enhancement, n	3 of 15 (20%)
Lumbar ventral nerve root enhancement, n	11 of 15 (73%)

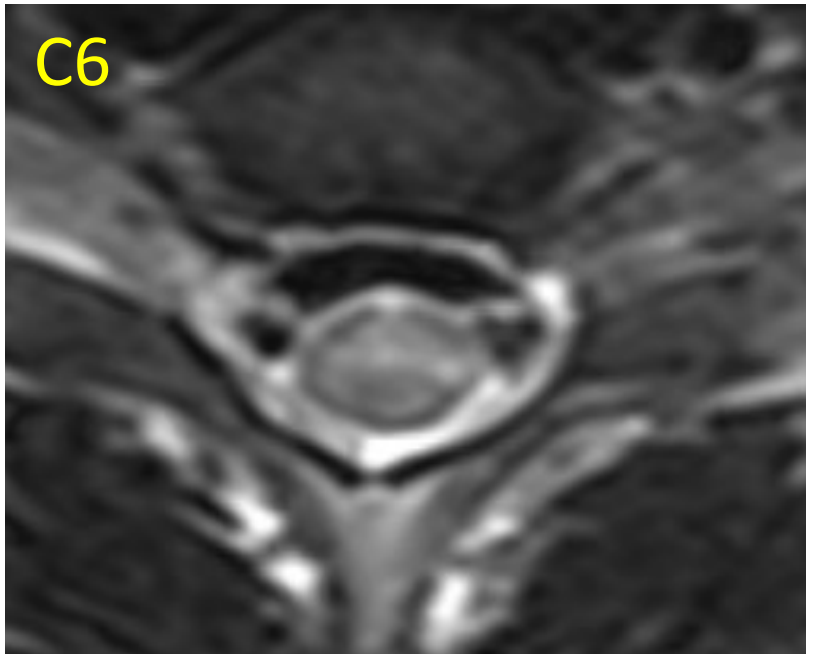
AFM imaging mimics

- MOG-antibody associated myelitis
- Spinal cord infarction
- Neuromyelitis optica spectrum disorder
- Transverse myelitis

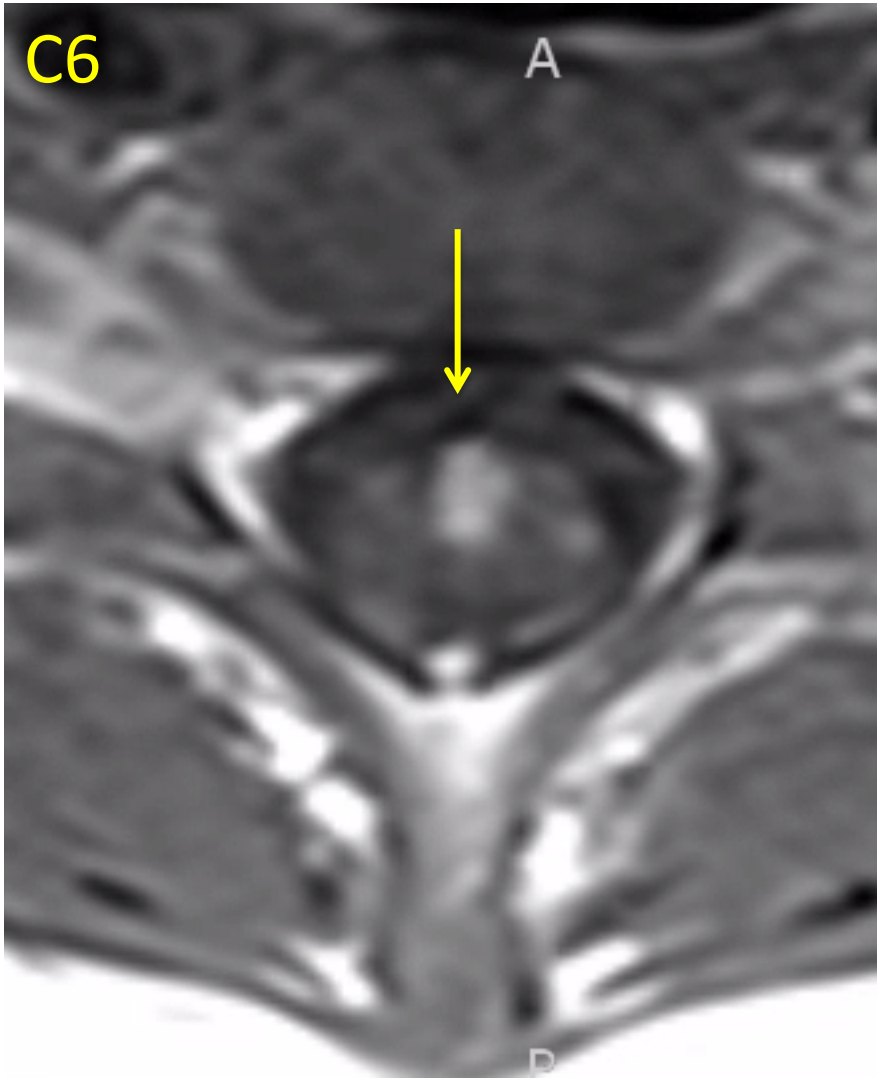
CASE: MOG antibody disease



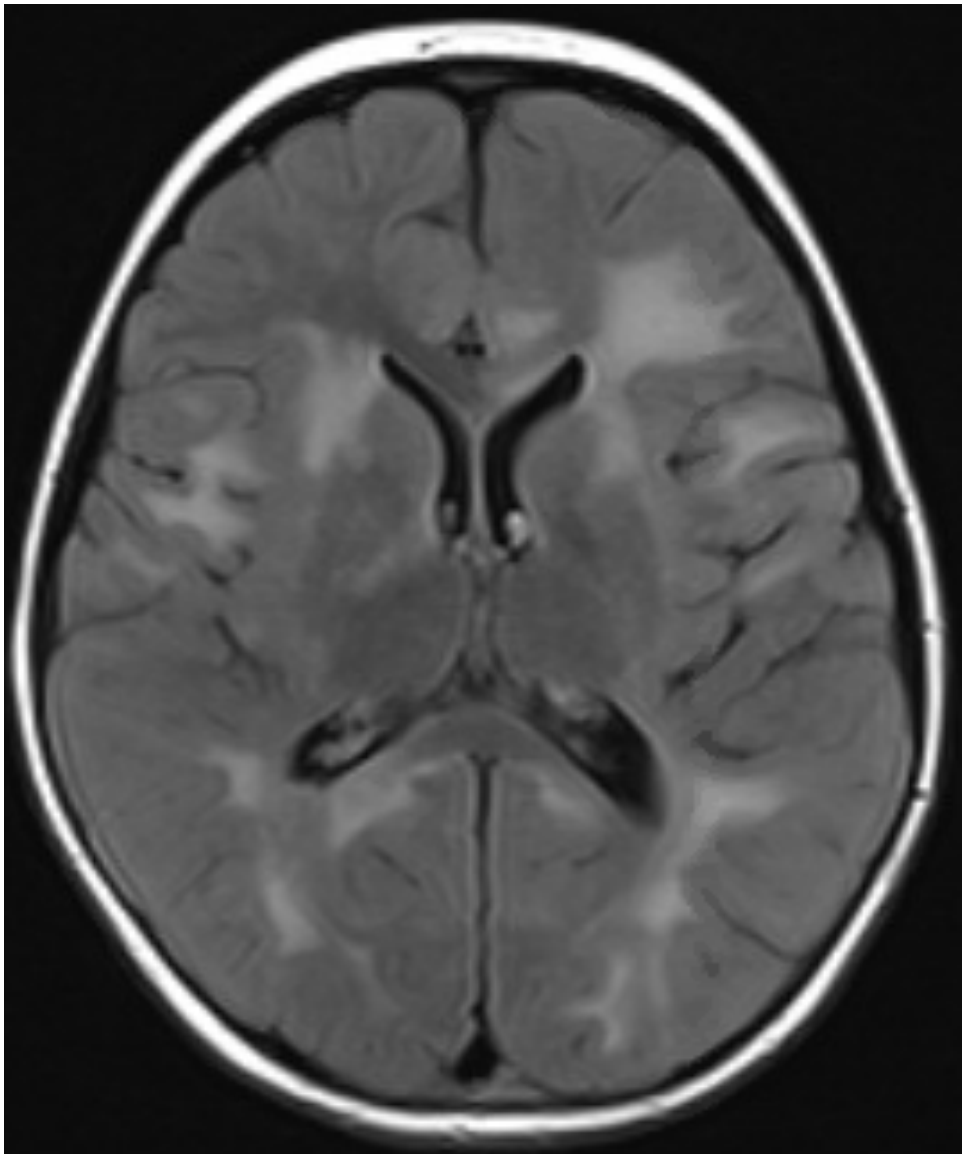


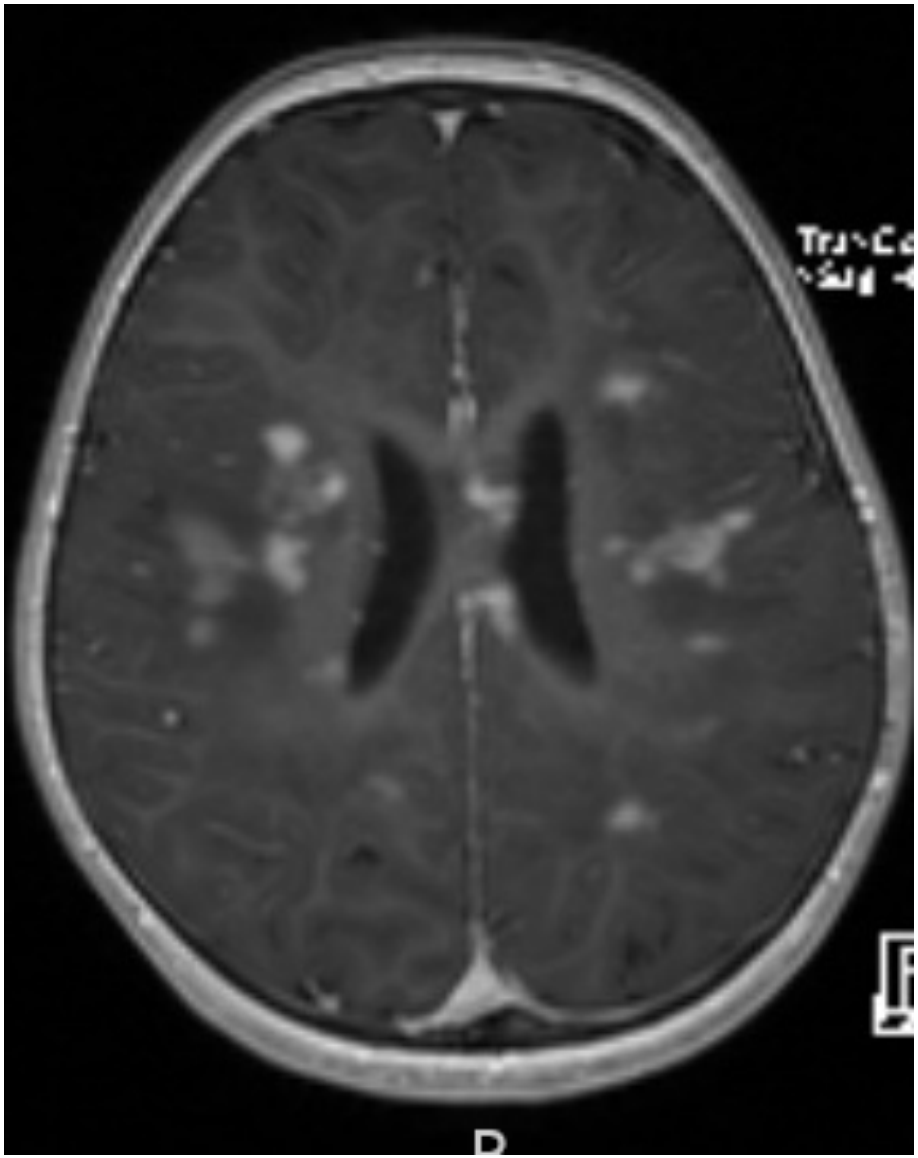


MOG antibody disease: POST-CONTRAST IMAGING

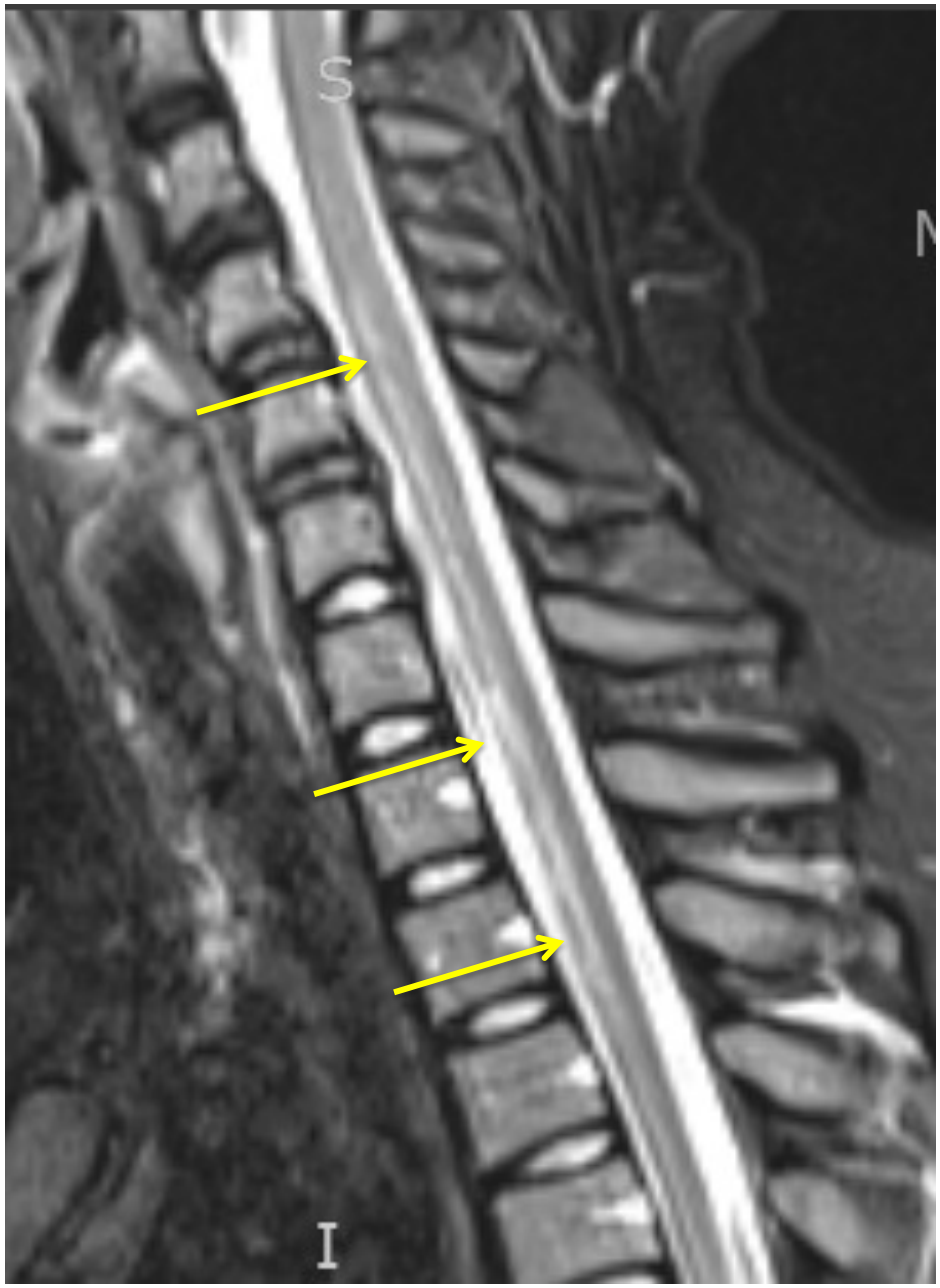


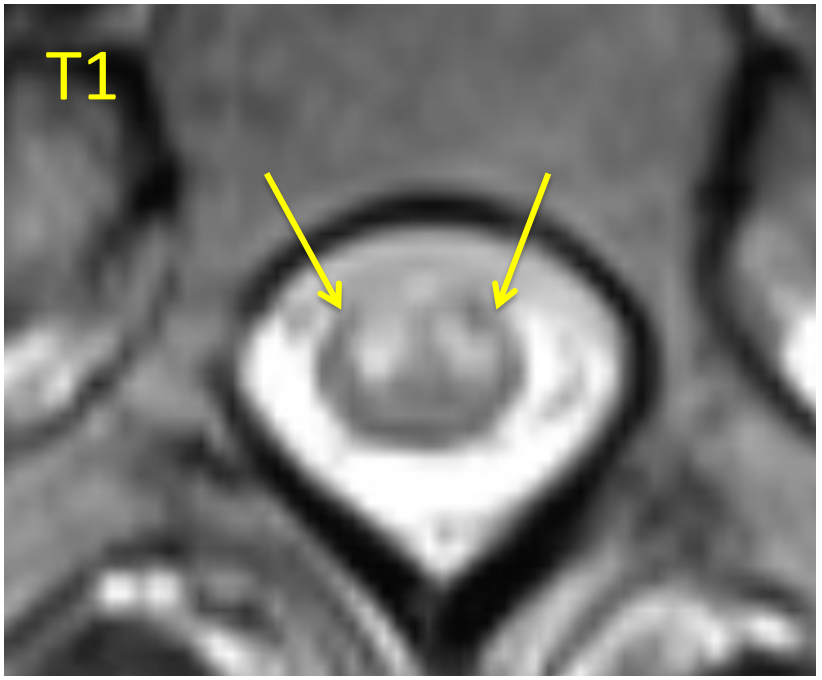
MOG antibody disease: BRAIN IMAGING



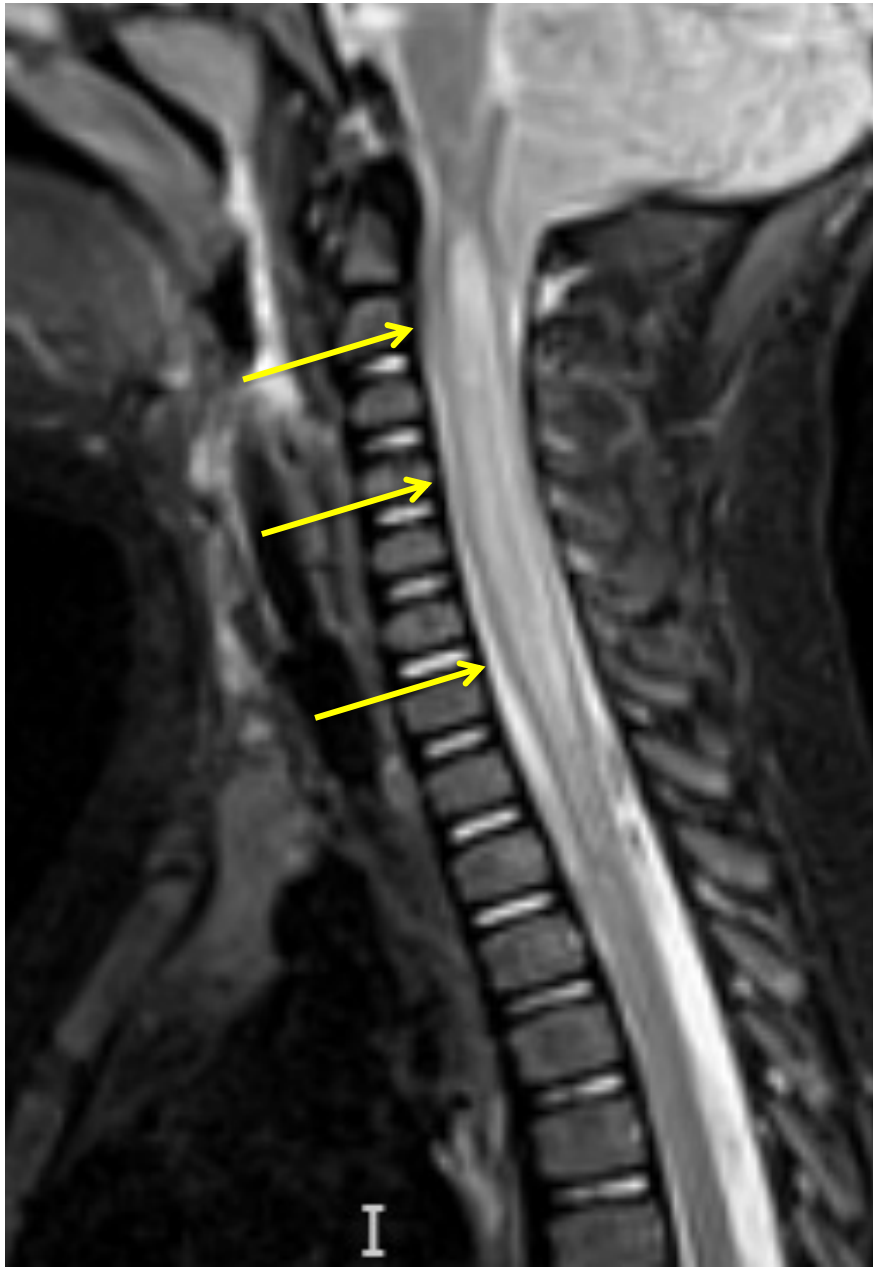


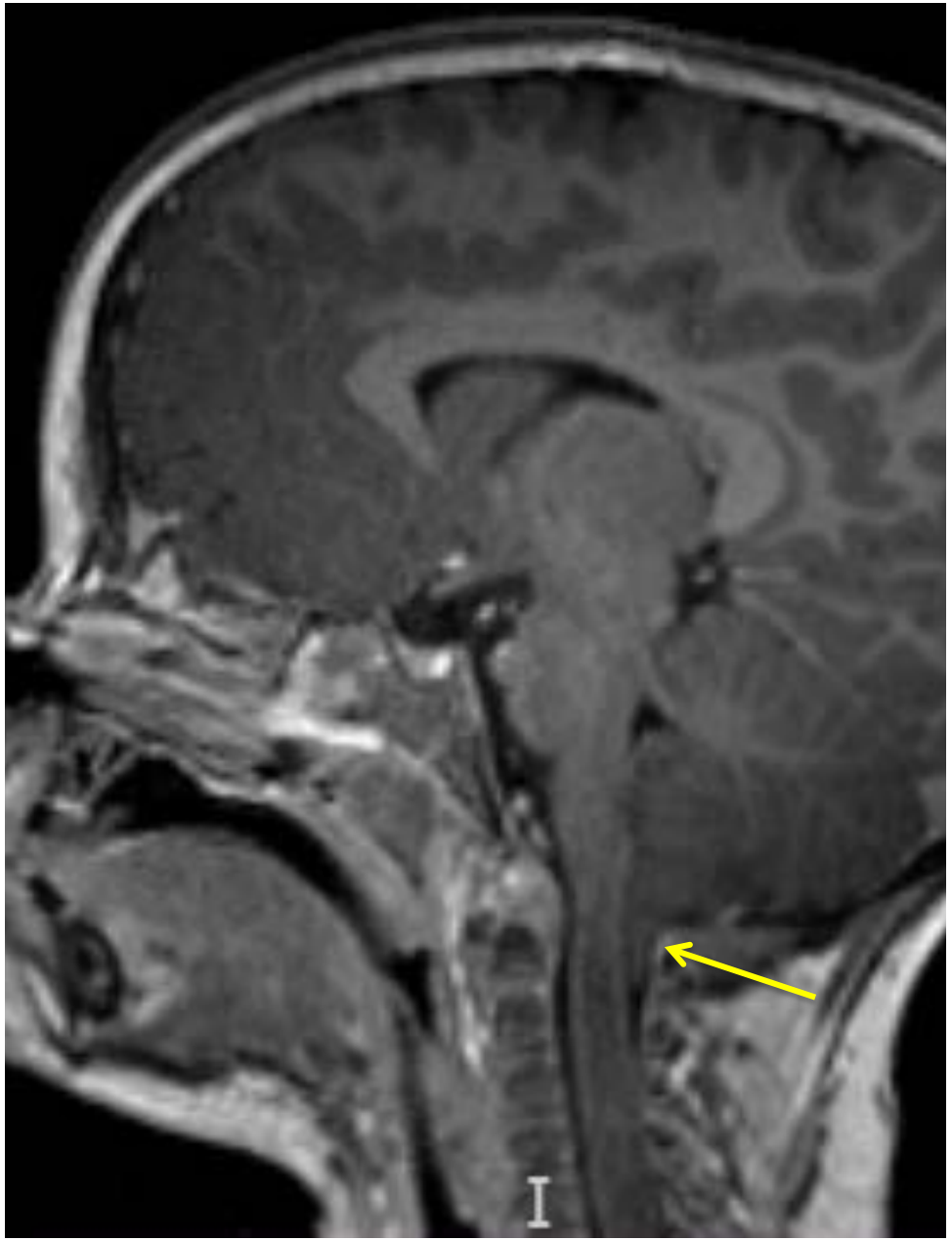
CASE: Spinal cord infarction





CASE: Chiari malformation





MRI spine for diagnosis of AFM

- Green flags
  - Longitudinally-extensive
  - Cervical cord involved
  - Hazy abnormality
  - Gray matter predominant
  - Minimal enhancement
  - +/- nerve root enhancement
- Red flags
  - Focal discrete lesions
  - Cervical cord spared
  - Round/ovoid lesions
  - White matter predominant
  - Focal enhancement
  - Cavitation/cystic

MRI brain in AFM

- Green flags
  - Normal
  - Posterior brainstem hazy hyperintensity
  - Deep gray matter hyperintensity (rare)
- Red flags
  - White matter lesions
  - Cortical lesions
  - Optic nerve lesions
  - Enhancement

AFM as an infectious disorder

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Chief, Division of Pediatric Infectious Diseases
Children's National Health System
George Washington University School of Medicine and Health Sciences