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Thoracic arachnoid cyst made symptomatic by demyelination

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Thoracic arachnoid cyst made symptomatic by demyelination

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A 40-year-old-woman presented with one-week of ascending numbness and weakness in her legs, paraesthesia in the arms and 1 week of constipation. There was no history of trauma or previous neurological symptoms. On examination, she had a spastic paraparesis (4/5 overall), a T5 sensory level, and additional altered sensation in her hands with hyperreflexia in all limbs and positive Hoffman signs bilaterally. MRI revealed a T4-8 dorsal arachnoid cyst causing spinal cord compression, with additional hyperintense cord lesions at C2 and multiple brain lesions suggestive of demyelination (Figure 1). The upper limb neurological deficits are likely due to C2 spinal cord lesions. The cyst was fenestrated through a single level thoracic laminectomy (Figure 2) and a short course of Dexamethasone (4mg bd for 3 days) was given. CSF analysis demonstrated faint oligoclonal bands. The patient's lower limb weakness and sensory deficits improved, and she was discharged home 3 days later. Most spinal arachnoid cysts are asymptomatic and discovered incidentally¹. The two pathologies might be a coincident finding. However, CSF dynamics may change in patients with demyelination². Altered CSF flow and velocity measures were associated with worsening clinical and MRI findings in a group of MS patients². Therefore, we propose that our patient had a static compensated cyst made symptomatic by demyelination as an additional CNS lesion.

References

1. Takeuchi A, Miyamoto K, Sugiyama S, *et al*. Spinal arachnoid cysts associated with syringomyelia: report of two cases and a review of the literature J Spinal Disord Tech 2003; 16; 207-211
2. Zivadinov R, Magnano C, Galeotti R, *et al*. Changes of cine cerebrospinal fluid dynamics in patients with multiple sclerosis treated with percutaneous transluminal angioplasty: a case-control study J Vasc Interv Radiol 2013; 24; 829-838

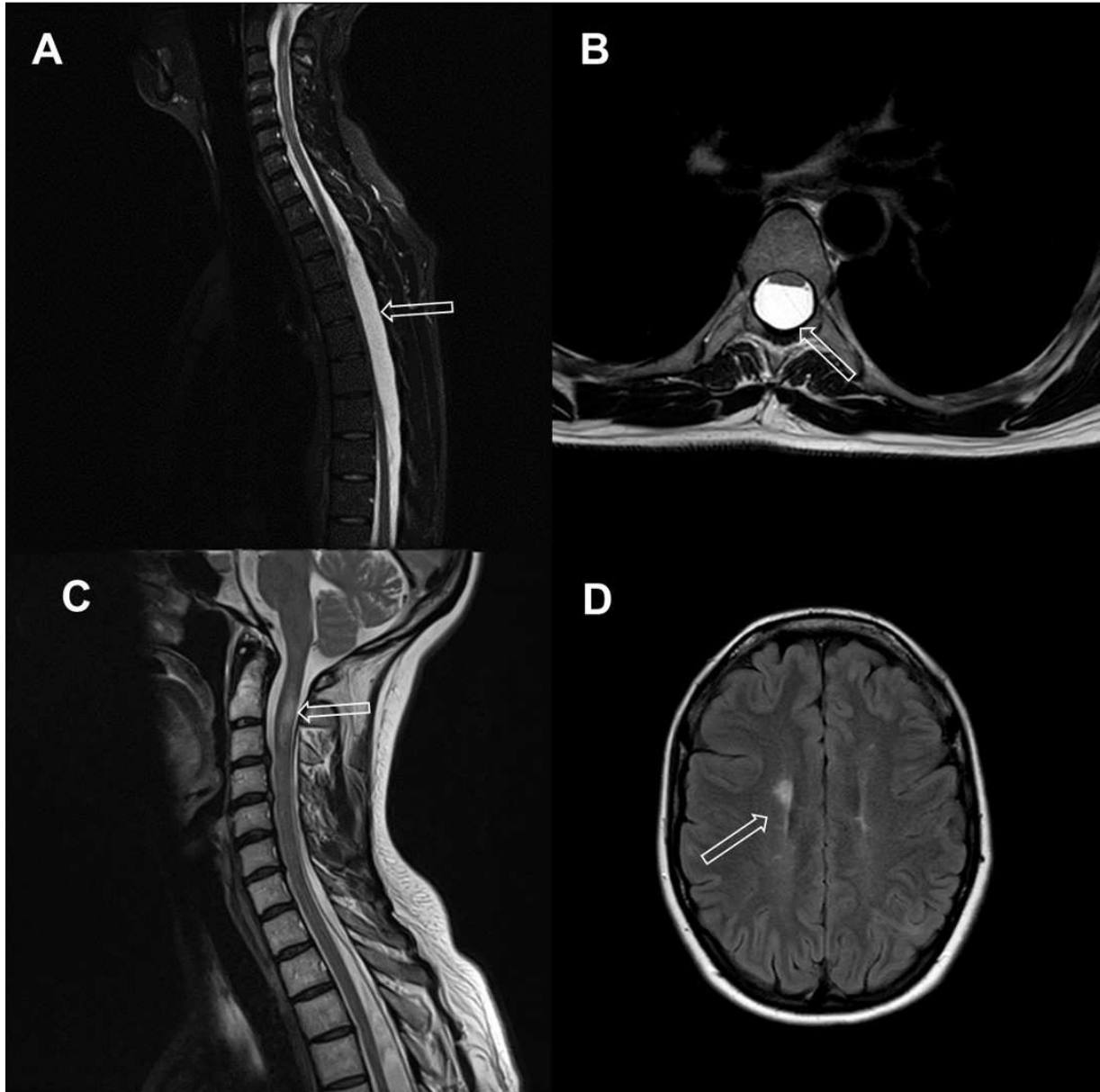
Figure legends

Figure 1. A Sagittal T2W-MRI image demonstrates the arachnoid cyst (arrow), B An axial T2W-MRI image at T6 shows the cyst with flattening of the cord (arrow), C Sagittal T2W-

MRI image demonstrates the C-spine signal change (arrow), D An axial FLAIR-MRI image demonstrating the right corona radiata lesion (arrow).

Figure 2. Sagittal T2W-MRI image demonstrates the decompressed thoracic spinal cord.

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Highlights:

Manuscript title: Thoracic arachnoid cyst made symptomatic by demyelination

- A static compensated thoracic arachnoid cyst made symptomatic by demyelination as an additional CNS lesion.

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Abbreviation:

Magnetic resonance imaging: MRI

T2 weighted: T2W

T: Thoracic

C: Cervical

bd: twice a day

CNS: Central nervous system.

CSF: Cerebrospinal fluid.

MS: Multiple sclerosis.

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