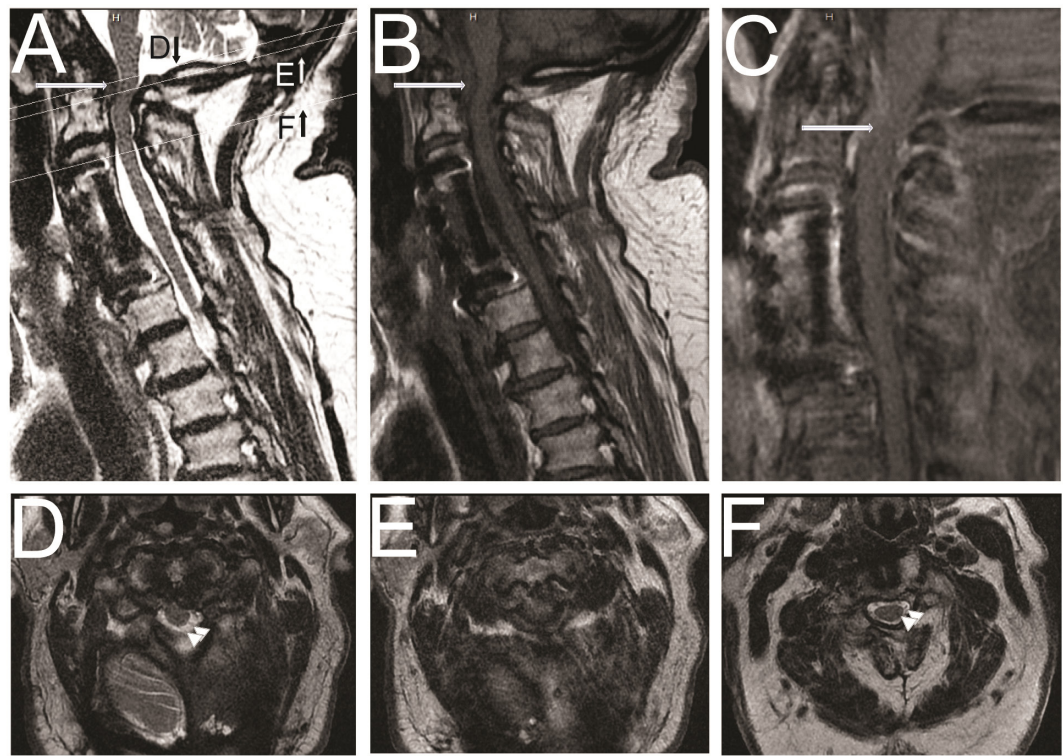


Spinal block at the cervico-medullary junction by a thickened transverse atlanto-axial ligament

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Figures Top panel: A: Sagittal T2 image of the cervical spine. Dotted lines marked D, E, and F indicate the horizontal sections shown in the bottom panel; B: Sagittal T1 image of the cervical spine; C: Sagittal T1 post-gadolinium image of the cervical spine. Arrows indicates the location of the thickened transverse atlanto-axial ligament causing deformity of the cervico-medullary junction anteriorly. This ligament is isointense to the neural tissue on T1-weighted sequence, is hypo-intense on T2-sequence, and is non-enhancing². There are postsurgical changes of cervical spine reconstruction/fusion from the C3 to the C6 level.

Bottom panel: D, E, and F represent horizontal sections indicated by the corresponding three dotted horizontal lines shown in A. The double arrowheads indicate the presence of T2 hyper-intense cerebrospinal fluid surrounding the cord that is missing at the region of the spinal block (E).

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DOI: 10.12746/swrccc 2014.0208.103

CASE

A 77-year-old man with underlying dementia was admitted with confusion, limited movement of his upper and lower extremities, low grade fever

(101.2°F), stiff neck, depressed deep tendon reflexes, and flexion plantar responses. Laboratory data were significant for leukocytosis, an elevated CK, and an elevated CRP. The patient was initially scheduled for a lumbar puncture procedure to evaluate him for meningitis pending imaging study results. His MRI of the cervical spine showed marked compression on the cervico-medullary junction by thickened transverse atlanto-axial ligament along with features suggesting complete spinal block (Figure 1). The patient was treated for meningitis without the lumbar puncture due to complete spinal block.

This case illustrates that a thickened transverse atlanto-axial ligament can present as quadriplegia. One should be cautious in performing lumbar puncture in cases of spinal block as this can aggravate signs of spinal cord disease.¹ Surgical decompression via subtotal resection of the thickened transverse atlanto-axial ligament is the usual management of these cases.² The patient's family deferred surgery. Over the next few days patient's confusion improved, but he continued to show limited movement in his extremities. He was subsequently discharged to a long term care facility. Two months after admission the patient showed improvement in both upper extremity and lower extremity weakness without surgery.

References

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Submitted: 7/31/2014

Accepted: 9/6/2014

Reviewers: Eman Attaya MD

Conflict of Interest: None

Published electronically: 10/15/2014
