



Dorsal Spinal Arachnoid Web; Case Series and Review of Literature

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Introduction

Arachnoid web is a rare cause of spinal cord compression. Available literature is limited to isolated case reports and small case series.

Methods

Four patients managed in our regional neurosurgical centre with a unique radiological appearance on MRI were reviewed and compared to the published literature.

Results

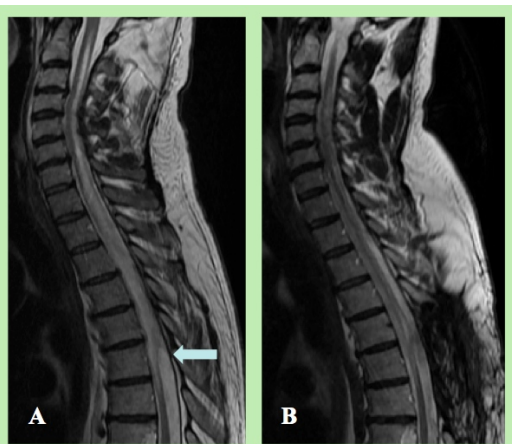
Two were males (50 and 43 years) - **patients 1 and 2** and two were females (29 and 43 years) - **patients 3 and 4**. Three presented with a 1-4 year history of progressive spastic paraplegia and sensory symptoms followed by symptoms of sphincter disturbance. One patient (**patient 4**) presented with severe perineal pain and mild lower limb symptoms with no sphincter disturbance. All patients had MRI spine which revealed suspicion of an arachnoid web at the level of T6 in each case. Three showed spinal cord atrophy at that level whereas one showed local expansion of the cord with associated signal changes in T2 weighted images. Classical ‘Scalp sign’ on MRI was seen only in two of our series- one was associated with syrinx while the other is not. Two patients had associated syrinx formation (one above and the other below the compression); onset of symptoms was preceded by minor injury to back in both these patients. All four patients made a marked clinical and radiological improvement following laminectomy and surgical division of arachnoid web.

Patient 1



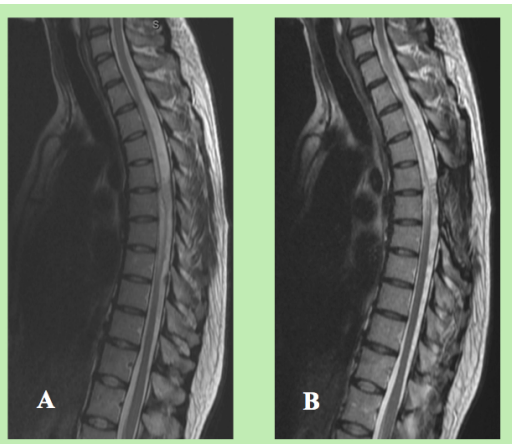
(A) Preoperative sagittal T2 scan of thoracic spine showing hyperdense signal in the cord at the level of T7 with cord expansion (B) 6 month's postoperative scan showing almost complete resolution of the intrinsic signal abnormality.

Patient 2



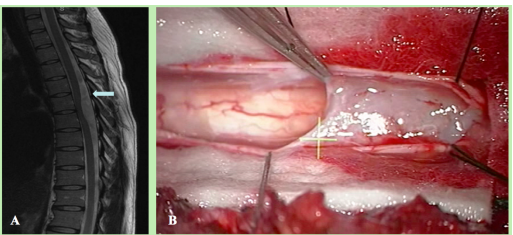
(A) Preoperative sagittal T2 weighted MRI showing extensive syrinx from C2-C6 with a dorsal arachnoid web at T6 causing anterior compression of the cord - 'Scalpel Sign' (Arrow). (B) 6 month postoperative scan. Significant reduction in the size of the syrinx with a small residual at T5-T6 level

Patient 3



(A) Preoperative T2 weighted MRI scan. At T5 level there is marked thinning of the cord with anterior displacement by a cystic lesion with cord signal change. (B) 6 month postoperative scan - the cord remains anteriorly displaced but with marked improvement.

Patient 4



(A) Preoperative sagittal T2 weighted MRI scan which showed the thoracic cord flattened and displaced anteriorly - 'Scalpel sign" (Arrow). There is no cord changes. (B) Intraoperative image showing the thick arachnoid web with underlying indentation of the cord.

Learning Objectives

By the conclusion of this session, participants should be able to: 1) Be aware about dorsal spinal arachnoid web as a rare, yet treatable cause of spinal cord compression 2) Understand the clinical features and radiological findings of dorsal arachnoid web 3) Identify diverse presentations the pathology can manifest.

Conclusions

Although rare, arachnoid webs are an important and treatable cause of thoracic cord compression. In our study, pre-op MRIs did not show a definite arachnoid web but only evidence of cord compression or syrinx formation above or below the level of compression. As in published literature, all our patients had a good outcome following surgery. As not all cases show classical findings on MRI, a high index of suspicion is needed to make the diagnosis to ensure early treatment and hence good outcome.

References

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