Extramedullar Thoracic Spinal Cavernoma: A Case Report and Review of Literature

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Purpose: Extramedullary spinal cavernoma is a rare vascular disease. Up to this publication only 23 cases have been reported in the literature. Most have been identified in the low thoracic region and only one in the upper thoracic area. Symptoms can range from mild sensory and motor deficits to severe neurological impairment including bowel/bladder dysfunction.

Case Description: 56-years-old male who presented with 1 year history of progressive lower extremity weakness, occasional allodynia and paresthesias. Patient denied urinary or fecal incontinence. Patient underwent MRI, which demonstrated a T2 heterogeneous mass. Clear intramedullary or extramedullary location could not be established.

Clinical Approach: Initial MRI was performed without IV contrast. Initial differential diagnosis of lesion included ependymoma, meningioma, cavernoma, astrocytoma or focal inflammatory/demyelinating process. Physical exam demonstrated bilateral lower extremity weakness, clonus, and fasciculations.

Clinical Findings: Patient underwent surgical resection of the mass. The intraoperative course was marked by easily distinguished borders between the lesion and the spinal cord. Pathology report was consistent with a diagnosis of cavernoma. The patient underwent treatment with laminectomy and segmental fixation through the T1 to T4 segment as well as resection of the lesion. Successful recovery with improvement in the neurologic exam to a near normal motor exam was observed.

Figure 1

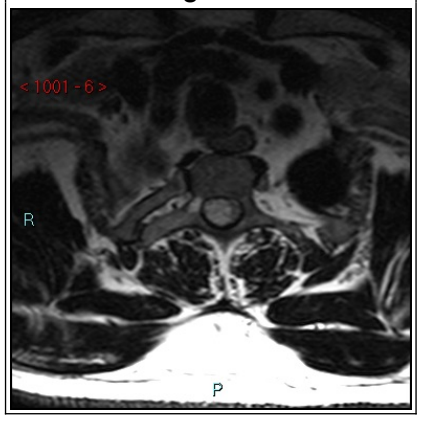
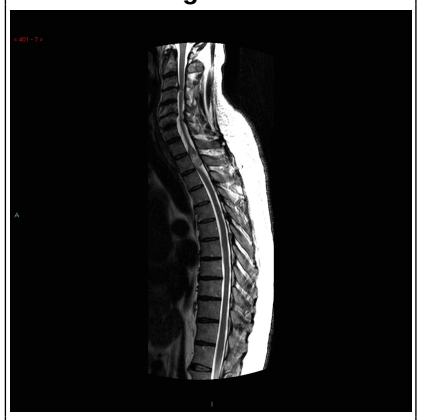
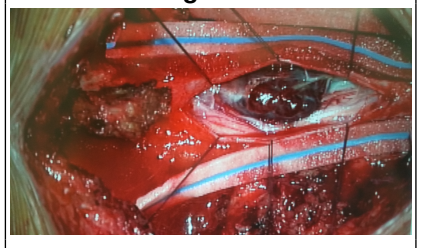


Figure 2



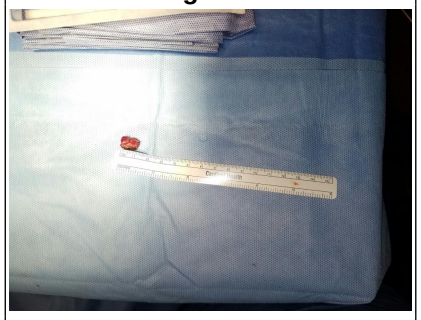
T2 Hyperintense well-circumscribed mass within the spinal canal centered at the T2 level compressing/displacing the cord laterally. Definitive determination of intra vs extramedullary could not be made due to close apposition. The mass shows internal T2 hypointense foci and rim representing hemosiderin deposits; a finding suggestive of cavernous malformation.

Figure 3



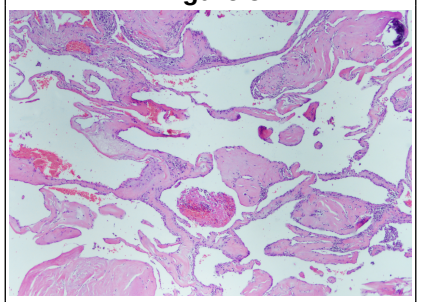
Surgical view under microscope of intradural extramedullary cavernoma.

Figure 4



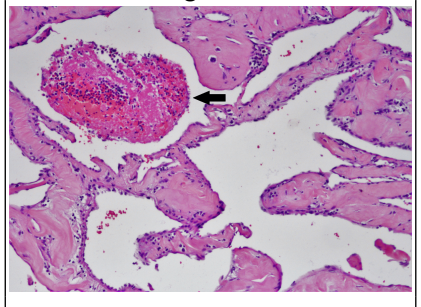
Gross pathological specimen illustration depicting the en bloc resection of the mass.

Figure 5



Low power view of a cavernous hemangioma with large dilated vessels lined by flattened endothelium (Hematoxillin-Eosin stain).

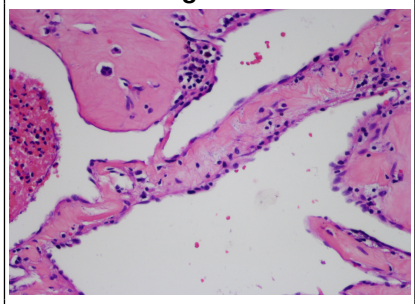
Figure 6



Intermediate power view of cavernous hemangioma with organizing thrombus (black).

Conclusions: We present this rare entity and describe the diagnostic and surgical techniques utilized. Further discussion and review, the most appropriate time for management and furthermore, entertaining this entity in the differential diagnosis is entertained in our discussion.

Figure 7



High power view of flattened endothelium lining blood vessel walls.

Learning Objectives: By the conclusion of this session, participants should be able to recognize a rare entity on imagining and its surgical management.

References

- Babu R, Owens TR, Karikari IO, Moreno J, Cummings TJ, Gottfried ON, Bagley CA. Spinal cavernous and capillary hemangiomas in adults. Spine (Phila Pa 1976). 2013 Apr 1;38(7): E423-30.