

Case Report

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Diagnostic Dilemma of Dumbbell Shaped Spinal Lesions-An Interesting Case

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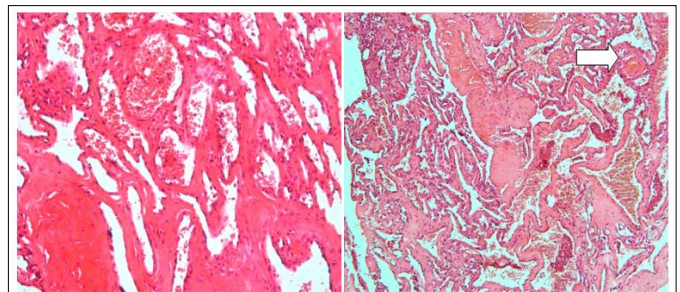
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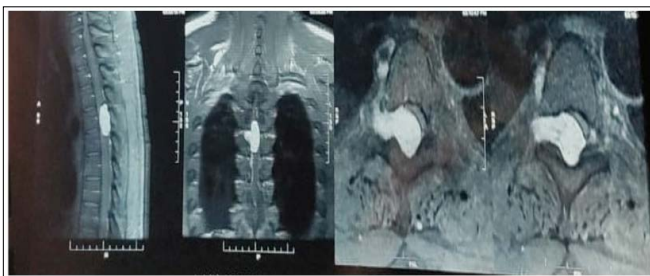
Case Summary

36 year old male with Progressive back pain, weakness in his Right lower limb and Paraesthesia over right side of his body since 3 months. Weakness was insidious onset, gradually progressive, (Distal to Proximal progression). Paraesthesia over right side of his body involving right chest, abdomen and lower limb Similar progression of weakness in his left lower limb, with no sensory disturbances on left side. Conscious, oriented. Tone: Hypertonia + in Right LL: Modified Ashworth Grade 3, Left LL: Normal. Power: MRC Grade: Right: 3/5, Left : 4/5 across all joints. Right foot drop present + Hypoesthesia below D5 dermatome to touch, pain, temperature on Right by: 60%, Left: 30%. Hyperactive deep tendon reflexes + in both lower limbs, Babinski reflex + Bilaterally and ankle clonus + on right side.



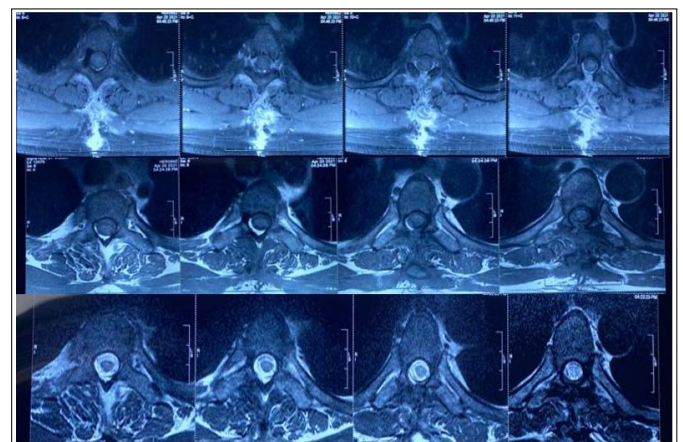
Section shows a lesion composed of many proliferating vascular channels chiefly capillaries.

These are lined by flattened endothelial lining. Some of them have fresh thrombi as indicated by the arrow.



CE MRI - A dumbbell shaped lesion with extradural and intradural stalk extending from the D4 neural foramen at the level of the D4 vertebra.

Treatment of lesion consisted of a D4-5 laminectomy and excision. Intraoperative findings revealed a 1.5 x 3.0 x 0.5 cm extra-dural soft, dark-red, and hyper vascular mass at the level of D4-5. A cavernous haemangioma was demonstrated on histopathology .



Post-operatively the patient recovered completely. At 6 months follow up MRI was repeated which showed complete resection of the lesion.

Table

Author and year reported	Age and Sex	Dorsal Vertebral Level	Signs and Symptoms of Compressive Myelopathy	Treatment and Outcome
Jhonston,L et al. 1938	5/M	D10	Sudden onset	Delayed Diagnosis. Fatal outcome.
Padovani,R et al. 1982	75/M	D5	Gradual onset	Laminectomy and Excision
Morioka,T et al. 1986	50/M	D2-D3	Gradual onset	Laminectomy +Thoracotomy for Excision
M.Fukushima et al. 1987	54/M	D7-8	Gradual Onset	Laminectomy +Thoracotomy for Excision Recurrence +
Hilman, J. et al. 1991	64/M	D4-5	Gradual Onset	Laminectomy + Foraminotomy.
Lanotte M. et al. 1994	65/M	D1-2	Gradual Onset	Laminectomy and Tumor Excision
Zevgaridis,D. et al 1998	13/M	D6-7	Acute Onset	Extended Fenestration at D6-7 level with modified transversectomy.
	76/M	D6	Gradual Onset	Laminectomy and Tumor Excision
Badinand B. et al. 2003	57/F	D3-4	Gradual Onset	Laminectomy and Tumor Excision
Doyle P,M. et al.2008	57/F	D4-5	Gradual Onset	Costotransversectomy+Hemilaminectomy.
Won Joo Jeong et al. 2015	64/M	D2-3	Gradual Onset	Laminectomy +Thoracotomy for Excision
Present Case	36/M	D5	Gradual Onset	Dorsal Laminectomy and Tumour Excision.

Dorsal Spinal dumbbell shaped cavernous hemangiomas are very rare. MRI so far the best diagnostic modality to assess the extent of the lesion. Laminectomy and Complete resection is the best treatment [1-9].

Discussion

Dorsal Spinal dumbbell shaped cavernous haemangiomas are very rare. MRI so far the best diagnostic modality to assess the extent of the lesion. Laminectomy and Complete resection is the best treatment.

These tumours are benign, vascular growths, asymptomatic in nature and are discovered incidentally. Thoracic spinal level is the typical site. Preoperative differential diagnosis of these lesions, with neuromas, continues to pose significant difficulty.

MRI is the most sensitive and specific method used to study these tumours. On T1-weighted images spinal extradural cavernous malformations are seen as an iso-intense signal, and on T2-weighted images they are hyper intense, slightly less than CSF. There is no signal void seen as in high-flow vascular lesions. Hyper intense signal on T1 and T2 weighted images is seen in haemorrhages. The case presented here belongs to a rarer subcategory. A distinct dumbbell-shaped tumour is seen due to growth constraint at the neural foramen

Prior reports have described dumbbell shaped haemangiomas, most of whom had significant evidence of bony involvement. Bony involvement is more suggestive of a haemangioma. In most of the cases reported, patients present with radicular symptoms when there was an epidural tumour invading the intervertebral foramen, but in our case the patient had no such symptoms. Contrast administration produces enhancement which is homogeneous to slightly heterogeneous. Digital subtraction angiography (DSA) is not useful, because the lesions cannot be seen and further embolization is not possible using this technique.

Biopsy is not recommended due to risk of haemorrhage. Complete surgical resection of spinal epidural cavernous haemangiomas

is currently the treatment of choice. In case of partial/subtotal gross total resection (lesions growing adjacent to vital structures, pleural cavity, intrathoracic extension) radiotherapy may be performed as adjuvant to surgery.

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