

# CASE REPORT

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## EPIDURAL CAVERNOUS HEMANGIOMA DORSAL SPINE: A CASE REPORT

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**ABSTRACT:** Epidural cavernous Hemangiomas (ECH) or Cavernoma are very rare benign tumours or tumour like malformations comprising about 4% of all epidural spinal tumours and 12% of spinal hemangiomas. Out of these 60% are reported in dorsal spine. They may occur at any age with peak at 40yrs age and a female predilection. Patients may present with spinal pain, radiculopathy, progressive para paresis, or acute paraplegia. Surgical excision is the treatment of choice. We report a case of epidural cavernous hemangioma of dorsal spine diagnosed in a middle aged male patient.

**KEYWORDS:** Cavernoma, Epidural, MRI.

**INTRODUCTION:** Cavernous hemangioma also known as cavernoma or cavernous malformation or venous angioma is a vascular malformation or a developmental hamartoma of the central nervous system.<sup>1</sup> Most of these malformations are intracranial. Supratentorial compartment is a site usually affected.<sup>2</sup> Pure spinal epidural cavernomas represent approximately 12% of spinal cavernous hemangiomas<sup>3</sup> and the thoracic segment is the most frequently affected in about 60% of cases.<sup>4</sup> Occurs in 40-60yr age group with a female preponderance.<sup>5</sup> MRI of spine is essential for diagnosis. Radiologically it can be mistaken for other tumorous and non-tumorous conditions. The clinical presentation depends on the location, growth rate, and biological behaviour and consist of spinal pain, radiculopathy, progressive para paresis, or acute paraplegia.<sup>6</sup> Surgical excision is the treatment of choice.<sup>7</sup>

**CASE REPORT:** 52yrs old male patient presented to ortho surgeon with complaints of low backache, unstable left knee joint and stiffness and swaying of left knee joint while walking since 4 months followed by numbness and weakness of left leg since 15days. Symptoms were getting aggravated on exercise and walking. Initially the patient had symptoms of generalized weakness, lassitude, dryness of skin, constipation and lack of concentrating ability since 2 yrs for which he had attended a physician and on investigation was found to be having hypothyroidism. He was put on Eltroxin 50mg daily. Later on he developed the present complaints which were initially ascribed to hypothyroidism. As there was no improvement with the treatment, the patient attended the ortho-surgeon. On examination he was found to be having mild pain and tenderness in the sacral region and grade 4 motor deficits in the left leg. Plantars-B/L up going. Sensory exam showed 40% sensory loss. Romberg's sign was positive.

The patient was suspected of having some compressive lesion in the spine and was subjected to MRI of spine. MRI of cervical spine showed C5-C6 cervical spondylosis. MRI of thoracic spine showed a well outlined solid oval T1W isointense intravertebral and extradural

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mass compressing the dorsal aspect of the spinal cord at D5-D6 level. The compressed cord was is intense on T1W and T2W images. Para spinal soft tissue was normal. Vertebral bodies and intervertebral discs appeared normal in height and signal intensity. Basing on the MRI findings the diagnosis was given as intravertebral and extradural mass lesion compressing the spinal cord at D5-D6 level – suggestive of Neurofibroma (Fig. 1).

Routine investigations were done and the patient was posted for surgery.

D5/6 laminectomy was done and the extradural space occupying lesion was excised totally. Bleeding was more at the site of surgery when compared to a Schwannoma or Meningioma. There was no outward extension of the tumour through the foramina, no attachment to the nerves or dura was found.

The mass was mostly soft and reddish. Total excision of the extradural compressing mass was possible as there were preserved planes all around.

**GROSS APPEARANCE:** The excised mass was 3cms, well circumscribed, brownish and soft. Cut section showed an unencapsulated mass with cystic areas filled with clotted blood. Per operative and gross diagnosis was hemangioma. Specimen was adequately grossed and sections were taken and stained with H&E.

**MICROSCOPIC APPEARANCE:** Tumour was composed of large spaces lined by cuboidal to flattened endothelial cells. All these vascular spaces were filled with blood elements (Fig. 2). Focal areas showed thrombus formation and organisation (Fig. 3). Mitotic activity was absent. Diagnosis of cavernous hemangioma was given.

Post-operative period was uneventful and the patient was discharged on the fifth day. Back pain disappeared after total surgical excision. Patient regained his sensory and motor functions of left leg within one month after surgery.

**DISCUSSION:** Hemangiomas are not considered to be vascular neoplasms, but rather hamartomas or malformation of the microcirculation. Basing on the predominant type of vascular channel they are composed of they are classified as capillary, cavernous, arteriovenous, or venous hemangiomas. Cavernoma or Cavernous hemangioma is considered a dysplasia of the vessels-forming mesoderm.<sup>8</sup> In the spine, hemangiomas located in the epidural space are rare and most of the spinal epidural hemangiomas reported previously were of the cavernous type. They constitute approximately 4% of all epidural tumours and 12% of all intraspinal Hemangiomas.<sup>3</sup> ECH are generally seen in the thoracic spine (60%), and are typically located posterolaterally and may extend into the neural foramina in 19% of cases.<sup>9</sup> Cavernous angioma in the posterior thoracic spine is thought to be related to the larger available epidural space and the lower resistance in the posterior portion of the spinal canal.<sup>9</sup>

The lesion may be an incidental finding requiring no treatment most of the times. Rarely it may present with spinal cord compression or nerve root compression with symptoms of pain, radiculopathy (10%), motor dysfunction with paraparesis (71%) or paraplegia.<sup>7</sup> As these are dynamic lesions, intralesional haemorrhage, thrombosis, organization, cyst formation can occur and contribute to the changes in size and nature of these lesions

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The diagnosis is made by radiologic studies. Magnetic resonance imaging plays the main role in the diagnosis of the hemangiomas. On MRI it is difficult to differentiate this from other tumours like Schwannoma, Meningioma, Round cell tumours and metastatic tumours and some non-tumorous conditions like Sarcoidosis, Tuberculosis and Histiocytosis. Diagnosis is almost always missed on preoperative imaging. Findings that may help to differentiate this lesion from the ubiquitous disc prolapse, more common meningiomas and nerve sheath tumors are its ovoid shape, uniform T2 hyperintense signal and lack of anatomic connection with the neighboring intervertebral disc or the exiting nerve root.<sup>10</sup>

Even though it has been reported in 81yrs person and 23months old child most patients are in the 30 to 60 year old age range, with a peak around 40 years. There is increased prevalence of this tumour in females (about 70%) with a female to male ratio of 2:1 to 2:9. The most frequent symptom is pain. Sphincter dysfunction is a late clinical finding.<sup>2</sup> In the present case the age of the patient was 52yrs whose initial clinical presentation was constipation which is supposed to be a late symptom followed by low backache, instability of left knee joint and weakness and numbness of left leg. MRI showed intravertebral extradural mass in the D5-D6 region which is a common location for the haemangiomas of dorsal spine. Diagnosis was missed on preoperative imaging as with the current imaging techniques it is difficult to differentiate various tumours that occur in that location, though contour of the tumour and anatomical connection to dura or nerves may help to some extent in differentiating meningiomas and Schwannoma.<sup>11</sup> In our case the shape of the tumour was oval and there was no connection to the dura or nerves.

Less common differential diagnoses for this lesion would have included metastasis, round cell tumor, sarcoidosis, histiocytosis and tuberculosis. Absence of bony changes in our case made metastasis, round cell tumor and eosinophilic granuloma unlikely. As these tumors have a tendency to bleed or grow causing compression.<sup>12</sup> In the present case the reason for the aggravation of symptoms may be because of the thrombosis and organisation that might have occurred as a complication of the vigorous exercise.

Complete surgical removal has to be done in these cases. Adjuvant radiotherapy is advised when total excision is not possible. In the present case the tumor was excised totally and the patient recovered completely. Repeat imaging studies showed no tumor recurrence.

**CONCLUSION:** Cavernomas of the spinal cord are rare tumors which commonly occur in females of around 40yrs. MRI, the diagnostic modality may sometimes fail to diagnose it hence cavernoma has to be considered in the differential diagnosis of every spinal epidural mass. Early surgical intervention is recommended in cases with compressive symptoms to prevent irreversible neurological deficit. This case has been presented because of its rare clinical presentation

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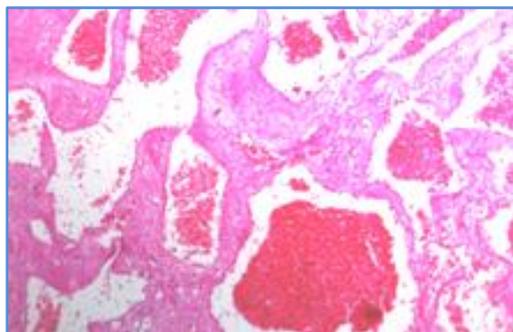
**Figure 1:** MRI of the dorsal spine showing showed a well outlined solid oval T1W is intense intravertebral and extradural mass compressing the dorsal aspect of the spinal cord at D5-D6 level.



**Figure 1**

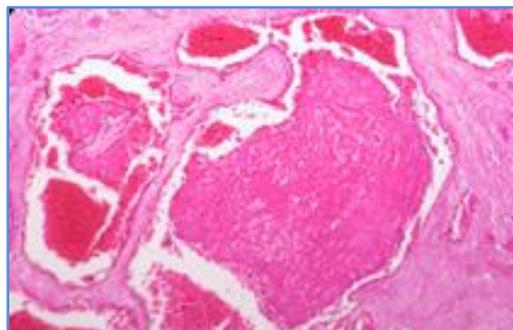
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**Figure 2:** H & E stained section showing tumour composed of large spaces lined by cuboidal to flattened endothelial cells 400x.



**Figure 2**

**Figure 3:** H & E stained section showing sinusoidal spaces filled with organized thrombi 400x.



**Figure 3**

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