

Thoracic Cavernoma with Intraosseous and Extradural Component Mimicking Metastasis: Case Presentation

Umit Kocaman¹, Mehmet Haluk Ozer¹, Muhammet Bahadir Yilmaz¹, Hakan Yilmaz²

¹University of Izmir of Medicine, Department of Neurosurgery, Izmir, TURKEY

²Duzce Ataturk State Hospital, Department of Neurosurgery, Duzce, TURKEY

Abstract: Spinal epidural cavernomas are quite rare lesions and only 5% of all cavernomas are located in the spine. The lesions are most commonly localized in the thoracic region. The differential diagnosis includes neurogenic tumors, lymphoma, schwannoma, meningioma, multiple myeloma, Ewing's sarcoma and metastasis. A 40-year-old male patient presented with paraplegia and MR images revealed an epidural soft tissue constricting the right posterolateral of the cord at the T6 level. Pathology showed cavernous hemangioma. A literature search revealed no other case that so closely mimicked metastasis by invading all components of the thoracic vertebra and also expanding to the epidural distance. We therefore present the case emphasizing these features.

Key words: Cavernoma, epidural, thoracic vertebra

Introduction

Spinal epidural cavernous angiomas (cavernomas) are quite rare lesions (2). They are most commonly located in the thoracic area in the spinal region (5). The differential diagnosis of spinal masses includes many pathologies. Cavernomas should be considered in the differential diagnosis. A literature review revealed no other thoracic cavernoma case invading all components of the thoracic vertebral bone (corpus, pedicle, lamina, facet joints, spinous process), compressing the epidural distance from both the dorsal and anterior aspects, resulting in a moderate depression of the corpus, and

creating an appearance of metastasis. We therefore found the case suitable for presentation.

Case Presentation

A 40-year-old male presented to our outpatient department with symptoms of weakness, loss of sensation in the legs and difficulty walking for the last 10 days. The medical history of the patient revealed nothing of significance besides smoking 1 pack per day for 20 years. The examination revealed proximal and distal 3/5 muscle strength on the right and proximal and distal 3-4/5 muscle strength on the left lower extremity.

Bilateral sensory loss was present with a level at T6. Lower extremity deep tendon reflexes were hyperactive and the Babinski sign was bilateral positive. The patient could only stand up with bilateral support and had significant difficulty while taking steps. There was no urinary or fecal incontinence or retention. Systemic examination revealed no pathology except coarsening of respiratory sounds. Contrast-enhanced dorsal MR investigation was requested. The radiology report revealed that the posterior elements of the T6 vertebra were affected by the medullary bone lesion that expanded to the pedicle, more prominently on the right. A large number of medullary bone lesions causing signal increase were present in the T11, T12 and L1 on post-contrast series. Metastasis was primarily considered as there were multiple lesions. The interaction of the pedicles and contrast enhancement in an expansile character were most marked at T6. There was less contrast enhancement and expansion at the other levels. A paravertebral soft tissue component was also present at T6. There was significant pressure from to the dural sac and spinal cord from the posterior together with pedicle involvement at the T6 level (Figure 1, Figure 2, Figure 3).

A spinal metastasis was primarily considered with these findings. The lesion was causing significant pressure on the spinal cord from the dorsal aspect and especially from the right side at the T6 level. Emergency decompression was planned for this region. The patient was prepared for surgery and pre-operative steroids were administered. The patient underwent T6 total laminectomy and

flavectomy. A highly vascular and fragile mass with prominent borders that compressed the spinal cord in the anterior direction and was consistent with a cavernoma was found in the epidural distance. The lesion was dissected from the dura was totally excised. The material was sent for pathology evaluation. The pathology result was cavernous hemangioma (Figure 4).

Post-operative examination of the patient revealed proximal and distal muscle strength of 4-5/5 in both lower extremities. The patient was mobilized on the 2nd post-operative day with unilateral support. He was discharged to outpatient follow-up later on.

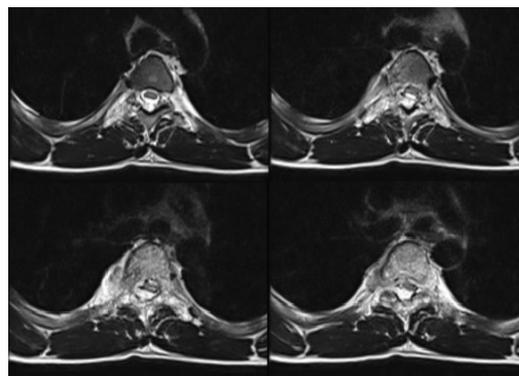


Figure 1

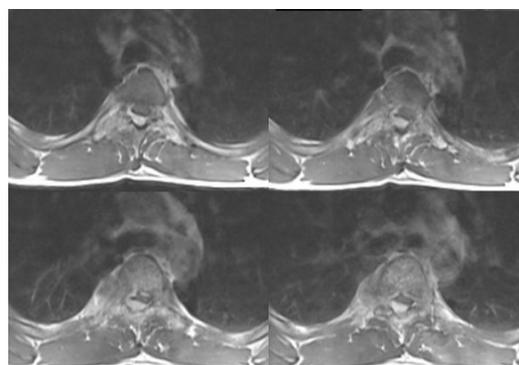


Figure 2



Figure 3

Figures 1, 2, 3 - Axial and sagittal MR images shows an epidural soft tissue constricting the right posterolateral of the cord at the T6 level

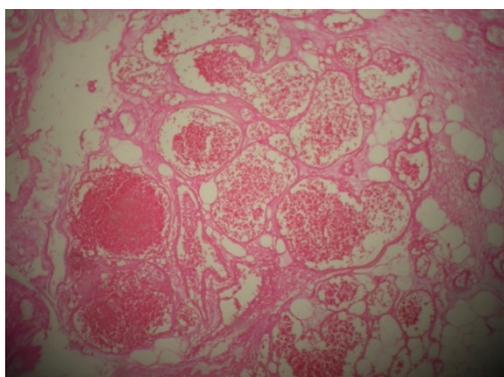


Figure 4 - Pathology showed cavernous hemangioma. X20 showing variety size dilated vascular spaces containing erythrocyte, lined by a single layer of endothelium

Discussion

Spinal epidural cavernous hemangiomas (cavernomas) are quite rare lesions. They form 8-15% of developmental cerebrovascular malformations. About 80% of cavernomas are supratentorial, 15% are infratentorial and only

5% are localized in the spinal region while 51% of spinal cavernomas are extradural. They are most commonly located in the thoracic region and vertebral column and can also extend to the epidural space (2, 5).

Spinal epidural cavernomas are most commonly seen between the ages of 30 and 50 years. Although their histological characteristics are not different than other cavernomas, they have no capsule in contrast to similar lesions at other locations (1). Extradural spinal cavernomas can present with symptoms and signs such as mass effect, bleeding, local pain, acute spinal cord pressure and radiculopathy depending on the location (5).

The differential diagnosis of epidural spinal cavernomas includes neurogenic tumors, metastasis, lymphoma, meningioma, multiple myeloma, extraosseous Ewing's sarcoma, disc fragment and epidural angiolipoma (3).

Li Ty et al reported a series of 14 spinal epidural cavernomas where 1 lesion each was predicted to be a meningioma, a schwannoma and an arachnoid cyst during the pre-operative evaluation but turned out to be a cavernoma on pathology (4). Çağiran et al reported a patient with significant sciatalgia who was preoperatively diagnosed as disc hernia but found to have spinal epidural cavernoma during surgery (1). Manish S. et al have reported that spinal epidural cavernomas are most commonly confused with schwannoma (6).

Surgical excision by experienced surgeons provides a cure for spinal epidural cavernoma.

Adjuvant stereotactic radiosurgery can be used for residual lesions (6).

There is currently no literature reference to a spinal epidural cavernoma creating an appearance of metastasis. All components of the thoracic vertebra including the corpus, pedicles, lamina, facet protrusions and spinal process were invaded with the lesion in our case. There was an epidural mass creating a significant pressure on the cord from the dorsal aspect. A moderately depressed corpus fracture was observed. The presence of an active smoking habit and involvement of the dorsal vertebral corpus indicated metastasis. Another interesting feature was the invasion of all vertebral components by the cavernous hemangioma.

Conclusion

Spinal cavernomas should be considered in the differential diagnosis of spinal masses. Predicting the pathology in these cases can influence the surgical preparation and approach. The history, physical examination, and radiology and laboratory values of the patient should be reviewed in this regard.

Correspondence

Hakan YILMAZ

Duzce Ataturk State Hospital, Department of Neurosurgery, Duzce, Turkey

E-mail: dr_hakanyilmaz@hotmail.com

Tel: +90 5066211829

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