

Case Report

Extradural hemangioma mimicking a dumbbell nerve sheath tumor in the thoracolumbar spine: Case report

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Abstract

Background: Extradural hemangiomas are rare, have varied and challenging clinical presentations, and require special considerations from the management point of view.

Case Description: A 70-year-old female presented with back pain that was ultimately attributed to a thoracolumbar extra-dural “dumbbell” hemangioma. Following surgical resection, the patient did well.

Conclusion: Extradural hemangiomas may present as spinal extradural soft tissue masses that must be differentiated from dumbbell neurofibroma.

Key Words: Extradural hemangioma, nerve sheath tumor, thoracolumbar spine

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INTRODUCTION

Hemangiomas are congenital vascular malformations of unknown etiology.^[1,5] In the spine, vertebral body hemangiomas are some of the most commonly reported lesions.^[5] Extradural hemangiomas are rare and only infrequently present without osseous involvement.^[2,4,5] A lumbar extradural “dumbbell” hemangioma requires differentiation from a dumbbell nerve sheath tumor and appropriate excision for optimum clinical outcomes.

CASE REPORT

Clinical presentation and magnetic resonance/computed tomography findings

A 70-year-old Chinese female presented with deep-seated epigastric pain radiating to the back/flanks without a focal neurological deficit. The esophagogastroduodenoscopy was negative. The patient underwent computed tomography (CT) scan of the abdomen/pelvis, which documented an enhancing extradural spinal lesion measuring

approximately 2.3 × 1.5 cm at the level of the L1 and L2 vertebrae, resulting in severe central canal stenosis [Figure 1]. It extended through the left L1/L2 foramen and into the left paravertebral region, abutting the left psoas muscle. Although there was no bony erosion/destruction, the L1 vertebral body showed posterior scalloping abutting the lesion. A supplemental magnetic resonance imaging (MRI) scan confirmed an enhancing “dumbbell shaped” 4.8 × 3.9 × 1.4 cm (CC × TV × AP) intraspinal extradural lesion centred at the L1/L2 level [Figure 2]. It was isointense on T1, hyperintense on T2, and

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homogeneously enhanced with contrast. On MRI, it resulted in severe L1/L2 spinal stenosis, compressing the conus/filum terminale, and extending into the left L1/L2 neural foramen. Based on the CT/MR images, the differential diagnoses included schwannoma, neurofibroma, lymphoma, and metastasis.

Surgery

The patient underwent T12–L3 laminectomy with L1–L2 left facetectomy for excision of the tumor accompanied by T12–L3 instrumented fusion [Figure 3]. Intraoperatively, a completely extradural highly vascular soft-tissue lesion was found at the L1–L3 vertebral levels. Intraoperative frozen sections showed fibroadipose tissue with numerous vascular channels closely associated with arterioles and venules. The findings were suggestive of a vascular malformation. The patient recovered well postoperatively.

Histology

Histological examination showed fibroadipose tissue with diffuse proliferation of densely packed vascular channels

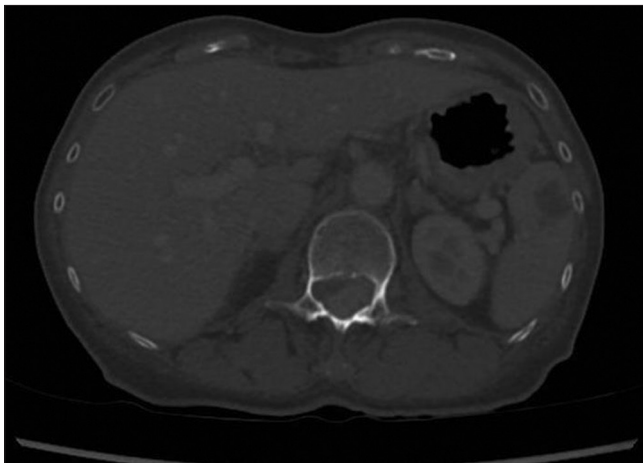


Figure 1: CT scan of Thoraco-lumbar spine showing space occupying lesion on spinal canal (Pre-op)

closely associated with some arterioles and venules without any thrombosis [Figure 4]. Immunohistochemical staining found the endothelial cells to be CD31 immune-reactive [Figure 5]. The rare lymphatics channels were immune-reactive to D2-40 stain. However, the stains for Melan-A and HMB-45 were negative.

Postoperative course

Four months after the surgery, the patient remained neurologically intact. MRI repeated 3 months postoperatively showed complete resection of tumor and no cord compression [Figure 6].

DISCUSSION

Extradural hemangiomas are rare, and are characteristically slowly progressive lesions that rarely present with acute neurological deterioration.^[3,5] CT scan and MRI studies identify extradural hemangiomas as hyperdense on CT, isointense on T1, hyperintense on T2 weighted MR images, and homogeneous enhancement with contrast.^[3] They are typically round or ovoid in shape, tend to extend through intervertebral foramina, and are usually located in the ventral extradural space of the lumbar spine.^[3] Histologically, they are soft-tissue vascular malformations (e.g., abnormal arteries and veins)

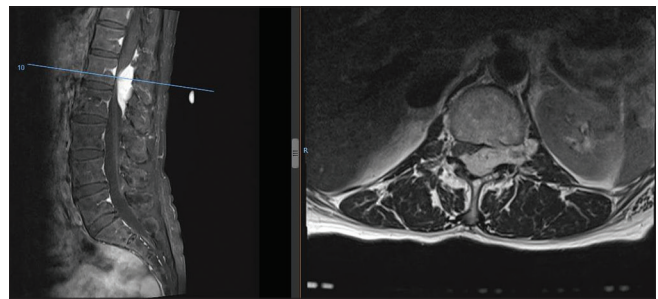


Figure 2: Contrast enhanced MRI images of thoraco-lumbar spine showing dumbbell shaped tumor in spinal canal

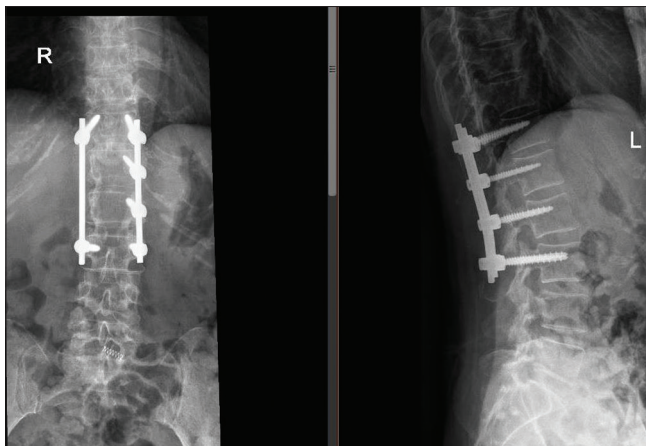


Figure 3: Post-op xray of thoraco-lumbar spine after decompression and posterior stabilisation

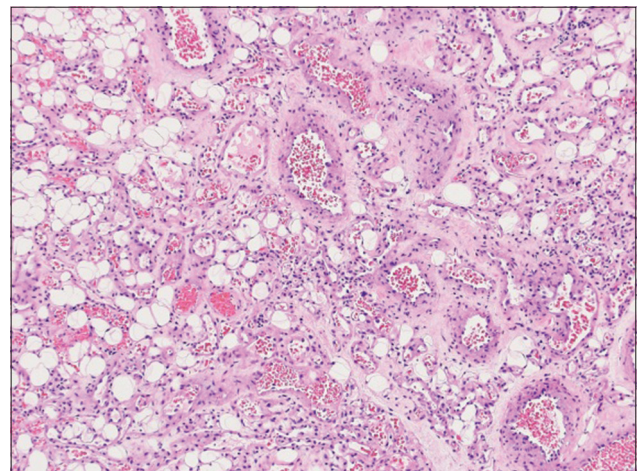


Figure 4: Histopathological slide showing vascular lesion composed of capillaries, arterioles and venules with interposing adipocytes

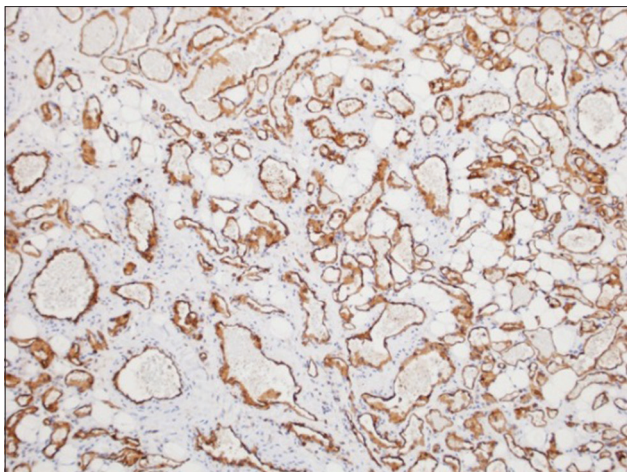


Figure 5: Immunostaining slide showing CD31 stained endothelial cells within the vessels

that frequently demonstrate degenerative changes due to repeated thrombosis and fibrosis.^[5]

The most common differential diagnoses include schwannoma, lymphoma, meningioma, angioliopoma, disk herniation, synovial cysts, granulomatous infection, pure epidural hematoma, and extramedullary haematopoiesis.^[2-5] Complete surgical resection of hemangioma may be complicated by copious intraoperative hemorrhage and the possibility of incomplete tumor resection.^[2-5] Re-operation for residual/recurrent tumors is associated with higher complication rates and poorer outcomes.^[3,4] This case highlights unique problems with the diagnosis and management of spinal hemangiomas and special

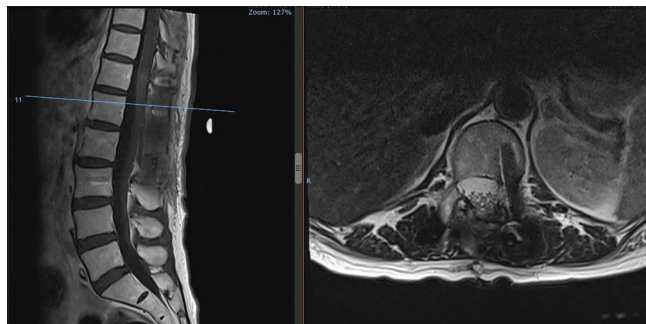


Figure 6: MRI images at post-op 3 months showing complete resection of tumor without any signs of recurrence

considerations to be kept in mind while dealing with these rare lesions.

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Conflicts of interest

There are no conflicts of interest.

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