

## Case Report

## Atypical spinal epidural capillary hemangioma: Case report

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## Abstract

**Background:** Hemangiomas are benign vascular malformations that can involve the spine. Pure epidural hemangiomas are rare and represent only 4% of all epidural lesions. Most hemangiomas are of the cavernous type; the capillary variant is atypical, and only ten cases have been reported in the literature.**Case Description:** A 69-year-old female presented with nonspecific dorsal pain. Magnetic resonance imaging (MRI) showed a spinal epidural tumor at the T9-T10 level. Following a T9-T11 laminectomy, the lesion was completely resected *en bloc*. Histopathologic analysis showed a pure epidural capillary hemangioma with adipose tissue mesenchyma.**Conclusions:** Although epidural capillary hemangiomas are extremely rare, they should be considered among the differential diagnoses of extradural, extramedullary spinal lesions. Further, they must be differentiated from other more common lesions such as meningiomas and schwannomas. The recommended surgical management is *en bloc* gross total excision.**Key Words:** Epidural capillary hemangioma, primary spinal tumors, spinal vascular lesion

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## INTRODUCTION

Ten percent of hemangiomas, benign vascular malformations, involve the spinal column.<sup>[2]</sup> Pure epidural hemangiomas are rare and represent just 4% of all epidural lesions.<sup>[3]</sup> They are histologically classified as cavernous, capillary, venous, or arteriovenous hemangiomas based on the pattern of their vascular channels.<sup>[2,5]</sup> The majority of spinal hemangiomas reported in the literature are of the cavernous type.<sup>[7]</sup> Spinal epidural capillary hemangiomas are the most uncommon tumors typically found at other sites (e.g., skin, soft tissues, or bones).<sup>[5]</sup> Here, we report a patient who presented with a pure epidural capillary hemangioma in the thoracic spine.

## CASE REPORT

A 69-year-old female presented with nonspecific dorsal pain for several months without any myelopathy/

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radiculopathy. She exhibited only mild pyramidal signs in the lower extremities (e.g., mild patellar and Achilles hyperreflexia but no Babinski signs).

Sagittal magnetic resonance imaging (MRI) revealed a hyperintense dorsal epidural lesion (on T1 and T2-weighted images) at the T9-T10 levels, which homogeneously enhanced with intravenous gadolinium contrast. There was mild/moderate compression of the spinal cord without bony involvement or invasion [Figures 1-3].

### Surgery

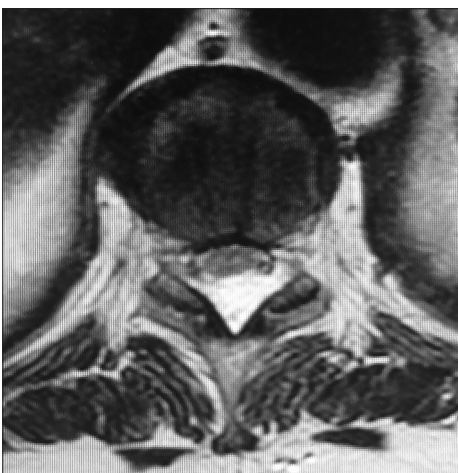
Under fluoroscopic guidance a T9-T11 laminectomy revealed a reddish highly vascularized soft lesion easily dissected away from the dura; a total *en bloc* excision was achieved without a dural fistula [Figure 4]. Postoperatively, the patient could ambulate without assistance and had no neurological deficits. She was discharged three days later without further complications.



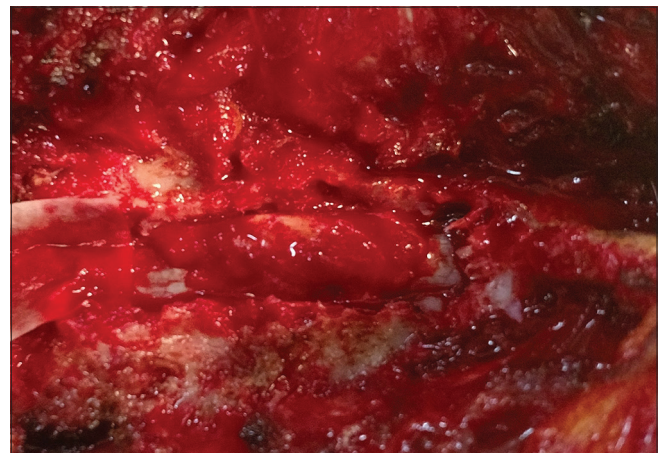
**Figure 1:** T2- weighted contrasted MRI of the spine, sagittal view, showing a hyperintense lesion in the epidural space of the thoracic spine, with discrete spinal compression at the T9 and T10 levels



**Figure 2:** Fat-suppressed T1-weighted MRI of the spine, sagittal view, after administration of gadolinium showing a well-circumscribed enhancing lesion causing displacement of the spinal cord at the T9 and T10 levels



**Figure 3:** T2-weighted axial MRI enhanced with gadolinium showing a mass occupying the spinal canal with discrete compression of the dural sac



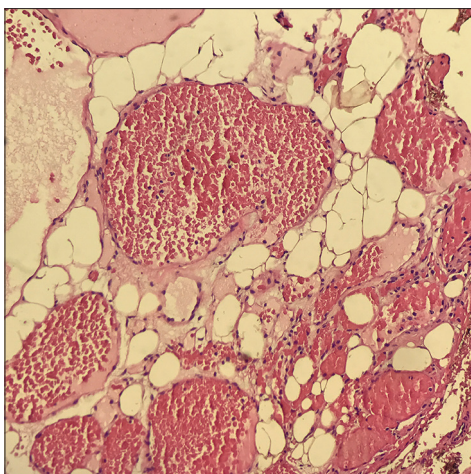
**Figure 4:** Intraoperative photograph showing the red-purple, hemorrhagic epidural lesion (black arrows) after laminectomy from T9 to T11

### Histopathology

The sample on gross inspection revealed a benign mesenchymal neoplasm with blood vessel differentiation [Figure 5]. It contained numerous ectatic capillary type vessels covered by a thin layer of endothelial cells (e.g., without atypia). A large amount of adipose tissue was also intermingled with neoplastic capillary vessels.

### DISCUSSION

Capillary hemangiomas are ubiquitous hamartomatous malformations resulting from the proliferation of vascular endothelial cells. Their histopathological characteristics include thin irregular capillary-sized vessels captured in fibrous low attenuating, lobular architecture, and the presence of a continuous basal lamina coating.<sup>[5,6]</sup> Capillary hemangiomas are usually found in the skin



**Figure 5: Spinal cord capillary hemangioma of the ectatic type: A benign mesenchymal neoplasm constituted by numerous capillary type vessels without cytologic atypia and a lobulated pattern intermingled with a large amount of adipose tissue, hematoxylin-eosin staining, 100x**

and soft tissues.<sup>[5]</sup> Pure epidural hemangiomas are rare; so far, only ten cases have been reported in the Western literature.<sup>[1,3-8]</sup> Capillary hemangiomas tend to have a foraminal extension, which differentiates them from cavernomas.<sup>[6]</sup> Cavernous hemangiomas tend to present apoplectic symptoms and to bleed contrary to capillary hemangiomas.<sup>[5]</sup> Previously reported cases presented back pain, radicular pain, or chronic myelopathy due to a mass effect, although without acute or chronic bleeding.<sup>[1,3,5-7]</sup> In our case, the patient had only insidious back pain and clinical signs of pyramidal syndrome. MRI is the diagnostic test of choice.<sup>[5]</sup> Well-circumscribed tumors and a dumbbell shape can be observed on MRI, but are also commonly found with other benign tumors.<sup>[5]</sup> Most capillary hemangiomas are still radiologically misdiagnosed and/or mistaken for meningiomas or schwannomas.<sup>[3,7]</sup> The treatment of choice for capillary hemangioma is complete surgical removal.<sup>[5,6]</sup> A gross total resection should be the goal.<sup>[5,6]</sup>

## CONCLUSION

Pure epidural capillary hemangiomas are extremely rare lesions but should be considered in the differential diagnosis of highly vascular spinal epidural lesions. They must be differentiated from other more common vascular lesions. Gross total surgical excision is the procedure of choice to avoid recurrence and perioperative hemorrhagic complications.

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## Conflicts of interest

All authors certify that they have no affiliations with or involvement in any organization or entity with any financial interest, or non-financial interest in the subject matter or materials discussed in this manuscript.

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