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Case Report

A case report and review of thoracic spinal angiolipoma

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Abstract

Background: While it is a rare entity, spinal angiolipomas are well-defined benign tumors that have been described sporadically in the literature starting from the late 1800s. Composed of mature lipomatous and angiomatous elements, these tumors manifest neurological symptoms due to progressive spinal cord or root compression. We present a case of a thoracic spinal angiolipoma and review the relevant literature.

Case Description: A 68-year-old male with ongoing bilateral lower extremity weakness was found on enhanced magnetic resonance imaging to have an extradural mass in the thoracic spine causing cord compression. A T4–T8 laminectomy and complete excision of the epidural mass resulted in reversal of the patient's neurological symptoms. Histopathology identified the mass as a thoracic spinal angiolipoma.

Conclusion: Given its uncommon occurrence and excellent prognosis, our report serves as a reminder to always consider spinal angiolipoma in the differential diagnosis of epidural masses.

Key Words: Epidural mass, magnetic resonance imaging, spinal angiolipomas, spinal tumor

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INTRODUCTION

Spinal angiolipomas are benign epidural neoplasms that comprise approximately 1% of all spinal axis tumors and up to 3% of all primary extradural spinal tumors.[2] They are mostly found in the thoracic epidural space but can also present both in other parts of the spine as well as intracranially. As fewer than 200 total cases have been reported, thoracic angiolipoma are often not considered among more frequent extradural space-occupying lesions.[1] Here, we report the case of a T4–T8 thoracic spinal angiolipoma and review the pertinent literature.

CASE HISTORY

A 68-year-old white male presented complaining of tingling in both feet and a "funny feeling" in the lower abdomen since 1 year. He reported weakness in his left leg along with balance problems (e.g., stumbling but not falling). The neurological exam revealed mild weakness of the hip flexors bilaterally, left side greater than right, hyperactive patellar and Achilles responses, and bilateral Babinski signs. The thoracic magnetic resonance imaging (MRI) revealed an extra-axial T2 hyperintense

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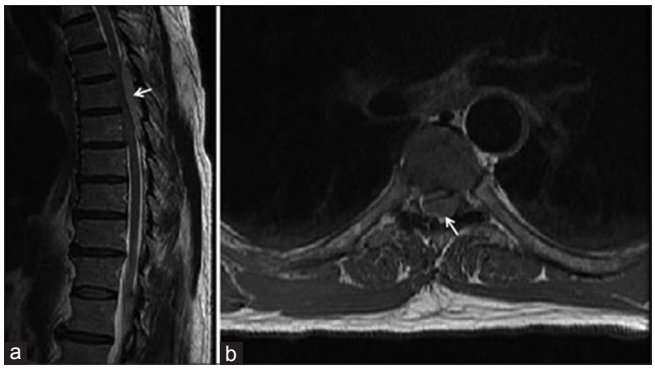

Figure 1: (a) Sagittal T2 MRI sequence shows a hypodense epidural mass (arrow) compressing the spinal cord from T5–T7. (b) Axial T2 MRI sequence shows a nonenhancing lesion isodense to soft tissue (arrow) causing severe spinal cord compression

and T1 isointense soft tissue mass at the T5–T7 levels resulting in extrinsic compression of the spinal cord [Figure 1a and b]. The main differential diagnosis based on exam findings and imaging was a meningioma.

The patient was taken to the operation room and a laminectomy was performed at the T4–T8 levels. Excessive epidural fatty tissue with mild vascular elements was encountered and uneventfully removed. The dura was opened but no intradural lesion was present. Histopathology revealed a lipovascular proliferation with fat and myxoid tissue without malignancy [Figure 2a and b]. On gross analysis, the specimen was an aggregate of red-tan soft tissue fragments measuring 4 × 1.3 × 0.4 cm. The final diagnosis was a benign extradural spinal angiolipoma. Postoperatively, the patient had gradual resolution of his neurological symptoms. There was no evidence of recurrence of his symptoms during follow-up visits.

DISCUSSION

Angiolipomas are benign tumors that most likely originate from the same progenitor tissue as lipomas and hemangiomas as they appear to have features common to both tumor subgroups.[3] Spinal angiolipomas are exceedingly uncommon with less than 200 cases being reported in the literature.[1] Within the spinal column, most tumors localize in the posterior epidural space and lead to symptoms related to cord compression. The diagnosis of spinal angiolipoma is dependent on MRI findings which, on T1-weighted images, demonstrate a hypodense fatty foci and show a variable degree of enhancement after contrast administration.[4] Computed tomography (CT), although not specific, is still an important tool as it can be used to evaluate the degree of destruction when the tumor infiltrates the vertebral body. The differential diagnosis is broad and includes

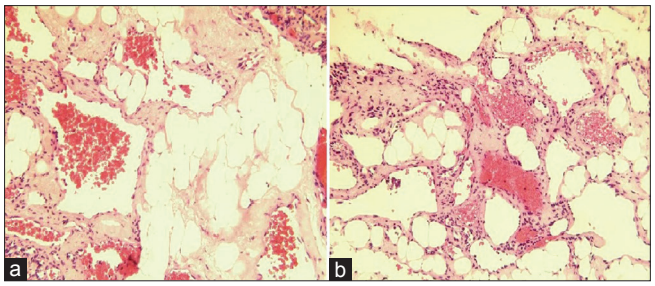

Figure 2: (a and b) Histological examination of the lesion showed both mature adipocytes as well as numerous blood-filled capillaries (H and E, ×100)

extradural lipomatosis, nerve sheath tumor, meningioma, metastasis, chronic extradural hematoma, and lymphoma.

Histologically, spinal angiolipomas are composed of mature adipose tissue as well as blood vessels that may or may not be surrounded by a thin capsule.[5] Gross dissection of these tumors reveals a yellow-colored, often hemorrhagic, mass that consist of adipose tissue and blood vessels. Surgical excision of the tumor was the treatment in all the reviewed cases. Benvenutti-Regato *et al*. in their retrospective study showed that the majority of patients diagnosed with this tumor underwent surgery and experienced complete symptom recovery.[1]

CONCLUSION

This case report highlights the importance of considering spinal angiolipoma in the differential diagnosis of a long-standing, slowly progressive paraparesis in the presence of an extradural spinal mass. Ultimately, histology is still necessary to correctly establish the diagnosis.

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Conflicts of interest
There are no conflicts of interest.

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