

# Spinal epidural angioliipoma: A rare cause of spinal cord compression

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### ABSTRACT

Spinal epidural angioliipomas are rare, benign tumors composed of mature lipocytes admixed with abnormal blood vessels. Only 128 cases of spinal epidural angioliipomas have been reported in literature till now. Spinal angioliipomas are predominantly located in the mid-thoracic region. We report a case of dorsal epidural angioliipoma in a 56-year-old male who presented with paraparesis and was diagnosed to have D4-5 epidural angioliipoma. Total surgical excision of the epidural angioliipoma was done and his paraparesis gradually improved.

**Key words:** Angioliipoma, spinal epidural tumor, spinal tumor

### Introduction

Spinal epidural angioliipomas are uncommon, benign tumors accounting for 0.04–1.2% of spinal axis tumors and 2–3% of extradural spinal tumors.<sup>[1,2]</sup> Angioliipomas are composed of both mature fatty tissue and abnormal vascular elements. They are commonly located in the subcutaneous region of the trunk and extremities. Location of angioliipoma in spine is rare. The commonest location in spine is dorsal epidural region,<sup>[1]</sup> followed by lumbar region. All angioliipomas show iso- or hyperintensity on T1-weighted images and hyperintensity on T2-weighted images of magnetic resonance imaging (MRI) and most lesions enhance with gadolinium administration.<sup>[3,4]</sup> Angioliipomas can be categorized into two subtypes: non-infiltrating and infiltrating.<sup>[5]</sup> Treatment of spinal epidural angioliipomas is by total surgical excision.

### Case Report

#### Presentation

A 56-year-old male presented with history of numbness below the chest of 3 months duration and heaviness in bilateral lower limbs of 2 months duration and difficulty in walking for 2 months. On clinical examination, multiple subcutaneous lipomas were present. There was decreased sensation below D5 dermatome and spasticity in both lower limbs with hyperreflexia. MRI of dorsal spine revealed a sausage-shaped homogenous lesion at D4-5 level. The lesion was in epidural plane and was compressing the spinal cord anteriorly. It was showing hypointensity on T1-weighted images and hyperintensity on T2-weighted images of MRI [Figure 1a–c].

#### Surgery

D4-6 laminectomy was done and a reddish vascular epidural lesion of size 2 × 1 cms was seen compressing the cord [Figure 2]. Total excision of the epidural lesion was done.

#### Pathology

Pathological examination of the resected lesion showed mature adipose tissue and abundant vascular channels, the caliber of which was variable, ranging from nearly capillary size to cavernous, but mostly several times larger than the fat cells [Figure 3]. There was no

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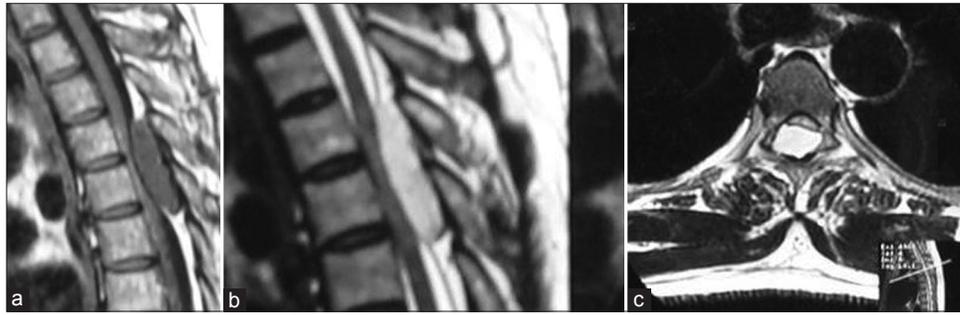


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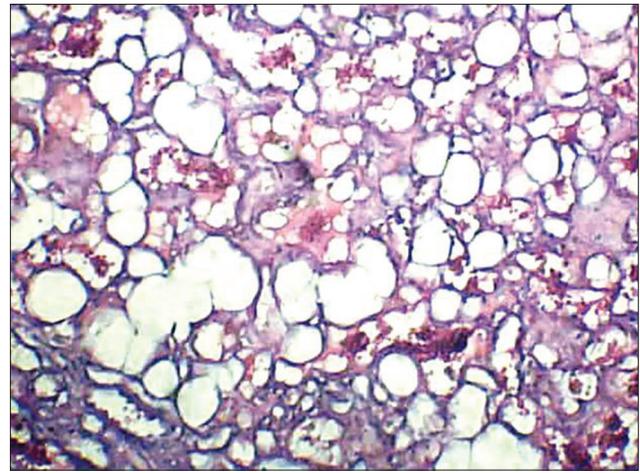
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**Figure 1:** (a) T1-weighted image of MRI dorsal spine showing hypointense epidural lesion at D4-5 level, compressing the spinal cord; (b) T2-weighted images of MRI dorsal spine showing hyperintense epidural lesion; (c) T2-weighted MRI axial images demonstrating severe cord compression



**Figure 2:** Intraoperative photograph showing epidural angioliipoma



**Figure 3:** Histopathology of angioliipoma showing admixture of mature adipose tissue and vascular elements (H and E, x200)

cytological atypia or structural abnormalities in the vascular channels. Lipoblasts were not seen.

### Follow-up

Postoperative course was uneventful. Paraparesis gradually improved. Neurological examination at 60 months follow-up revealed full power in the legs with normal tone and no hyperreflexia.

### Discussion

Spinal epidural angioliipomas are rare, benign tumors, with only 128 cases reported in the literature till now.<sup>[1,2,6-12]</sup> The most common location of angioliipomas is in the soft tissues of the extremities, trunk, or neck. Berenbruch first described a case of spinal angioliipoma in 1890.<sup>[13]</sup> In 1960, Howard and Helwig established angioliipoma as a clinicopathological entity containing vascular and mature adipose elements.<sup>[14]</sup> Location in spinal canal is rare and the commonest location in spinal canal is in dorsal epidural region. Spinal epidural angioliipomas commonly occur in adults in the fourth and fifth decades and have female preponderance.<sup>[1,2]</sup> Location in lumbar spine is rare.<sup>[11]</sup> Location in spinal

intramedullary region and intracranially has been rarely reported.<sup>[15,16]</sup>

MRI is the investigation of choice in diagnosing spinal angioliipoma.<sup>[1,2]</sup> Angioliipomas are iso- or hyperintense on T1-weighted images and variable in T2-weighted images of MRI, but usually hyperintense. The fat component is typically hyperintense on T1-weighted images and hypointense on T2-weighted images. The degree of central hypointensity on T1-weighted images is predictive of the degree of vascularity.<sup>[3,17]</sup> In the current case, hypointensity on T1-weighted images correlated with increased vascularity within the spinal angioliipoma. They are subdivided into two types: non-infiltrating and infiltrating.<sup>[2,5]</sup> The non-infiltrating type of spinal angioliipoma is more common and is usually well encapsulated and generally arises from the posterior epidural space. Spinal infiltrating angioliipomas are generally located in the anterior epidural space and can invade the vertebral body.<sup>[2,12]</sup> The common clinical presentations of spinal epidural angioliipomas are progressive paraparesis, back pain without radiculopathy, lower extremity sensory changes, and hyperreflexia. Pregnancy can aggravate the symptoms

probably because of impaired spinal venous drainage or hormonal changes. Sudden neurological deterioration can occur due to tumor thrombosis or hemorrhage.<sup>[6]</sup> Non-infiltrating angioliipomas are well defined and separate from the surrounding tissue and can usually be easily removed by laminectomy. In case of infiltrating spinal angioliipomas, wider resection is advised.<sup>[1]</sup> Most of the patients have good postoperative outcome after surgical excision of spinal angioliipomas in spite of severe preoperative neurological deterioration. Adjuvant radiation has not been recommended to patients with this benign pathological entity, since the prognosis is very good even in the infiltrating variety. Recurrence after surgery is rare and only one case has been reported.<sup>[18]</sup>

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