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CASE REPORT / *OLGU SUNUMU*

LUMBAR SPINAL EPIDURAL ANGIOLIPOMA CAUSING RADICULOPATHY

RADİKÜLOPATİYE NEDEN OLAN LOMBER SPİNAL EPİDURAL ANJİOLİPOM

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SUMMARY:

We present a case with an angiolipoma settled in lumbar spinal epidural region. A 49-year-old woman was admitted to hospital with a 4-month history of low back and right leg pain. The patient also referred numbness and hyperesthesia in the inner surface of thigh. Neurologic examination revealed femoral stretch test was positive at 45˚ on the right side; right hip flexion was in +4/5 muscle strength. Sensory impairment was noted on the right L1-2 level. A lumbosacral MRI showed a mass lesion in the neural foramen of L1-2 on the right side. The mass was excised; and histological study of the specimen revealed an angiolipoma. Spinal angiolipomas are rare bening tumors of the epidural space. Pure lumbar localization is extremely rare. A spinal extradural angiolipoma should be considered in a patient who had chronic radiculopathy when MRI revealed a mass lesion. Treatment of choice is total removal.

Key words: *Angiolipoma, extradural spinal tumor, radiculopathy, spinal cord*

Level of Evidance: *Case Report, Level IV*

ÖZET:

Lomber spinal epidural yerleşimli bir anjiolipoma olgusu sunulmuştur. 49 yaşında kadın hasta, yaklaşık dört aydır giderek artan bel ve sağ bacak ağrısı, uyluk iç yüzünde yanma ve uyuşma şikâyetleriyle kliniğimize başvurdu. Nörolojik muayenede sağ femoral germe testi 45° de pozitif, sağ kalça fleksiyonu +4/5, sağ L1-L2 düzeyinde hipoestezi mevcuttu. Lomber MRG'de L1-L2 sağ nöral foramen düzeyinde solid kitle saptandı ve ameliyat edildi. Histopatolojik inceleme sonucu anjiolipoma olarak bildirildi. Sadece lomber spinal epidural yerleşimli anjiolipomalar oldukça nadir görülen ve ekstradural spinal kitlelerin ayırıcı tanısında düşünülmesi gereken lezyonlardandır. Kliniğimizde radikülopati nedeniyle ameliyat edilen lomber spinal epidural yerleşimli bir anjiolipom olgusu sunularak, nadir görülen bu spinal lezyona dikkat çekilmiştir.

Anahtar kelimeler: *Anjiolipoma, ekstradural spinal tümör, radikülopati, spinal kord*

Kanıt Düzeyi: *Olgu Sunumu, Düzey IV*

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INTRODUCTION:

Spinal angiolipomas are rare benign tumors of epidural space, accounting for 0,14 % to 1,2 % of spinal tumors [2-4,6-8]. Spinal angiolipomas consist of mature adipocytes and abnormal blood vessels that vary in size from capillary to sinusoid or venulas to arterioles [2]. Spinal angiolipomas mostly locates over the dorsal aspect of dura at the thoracic level [3,9]. Pure lumbar localization is extremely rare [8].

CASE REPORT:

A 49-year-old woman was admitted to hospital with a 4-month history of low back pain and right leg pain. The patient also suffered from numbness and hyperesthesia in inner surface of thigh. Neurologic examination revealed femoral stretch test was positive at 45˚ on the right side; right hip flexion was in +4/5 muscle strength. Sensory impairment was noted on the right L1-2 level. A lumbosacral Magnetic Resonance Imaging (MRI) showed a 12x10x20 mm mass lesion isointense on T1-Weighted (T1-W) (Figure-1), hyperintense on T2-Weighted (T2-W) (Figure-2) images; and displayed an intense enhancement with iv gadolinium infusion (Figure-3) in neural foramen of L1-2 on right side.

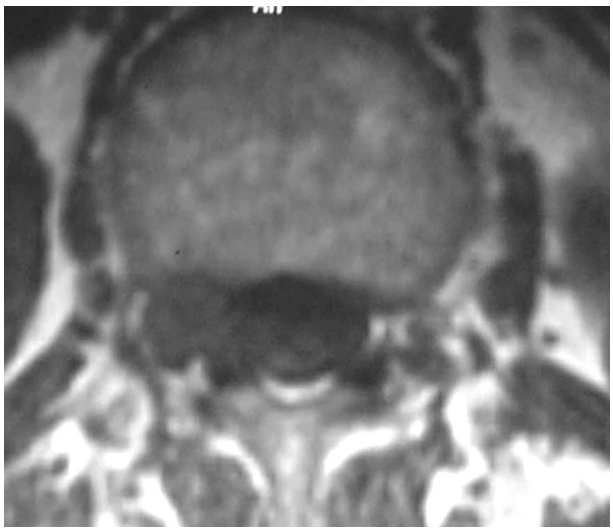

Figure-1. A mass lesion in the L1-2 neural foramen is isointense with muscle and cord on T1-W images.

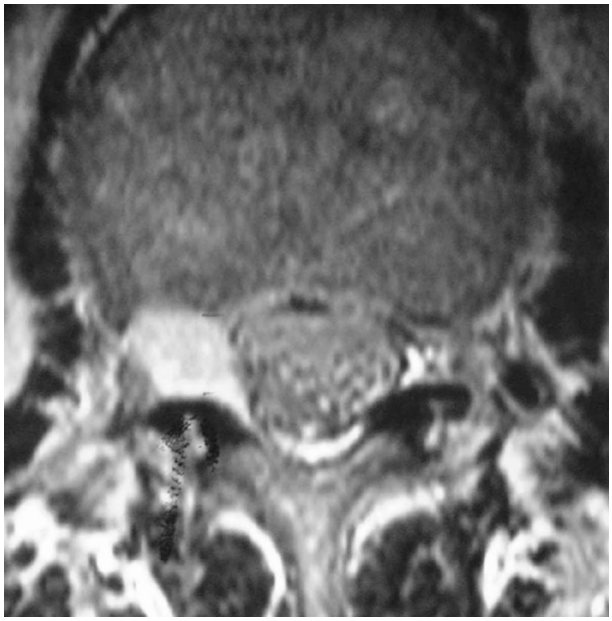

Figure-2. The lesion shows hyperintensity on T2-W sections.

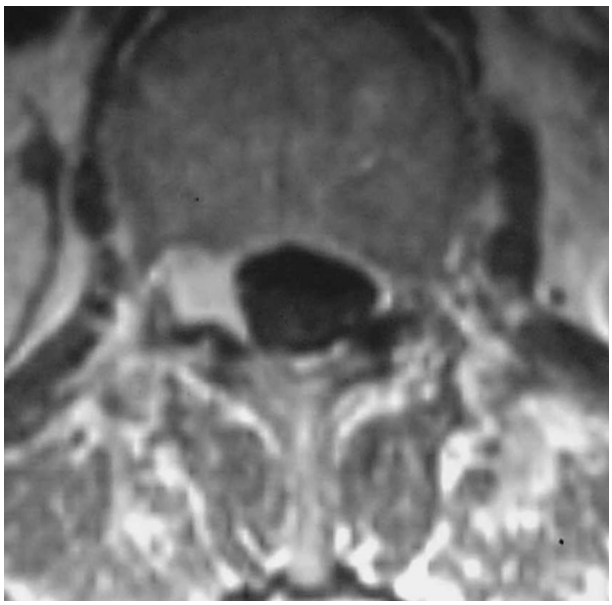

Figure-3. The MRI reveals contrast enhancement of the mass lesion.

The patient underwent the right L1 hemilaminectomy and L2 partial laminectomy. A mass lesion located at the axilla of the right L2 root, was totally removed with microsurgical technique. The lesion was vascular, dark purple,

solid, well-delineated but adhering to surrounding tissues. It was soft and thinly encapsulated and the cut surface of mass was pale yellow in color and had more or less reddish tinge on surface. Light microscopic examination demonstrated a lesion was composed of variable mixture of mature adipose tissue and thin walled vascular channels lined by flattened mature endothelium (Figure-4 and 5). Histological study of the specimen revealed an angiolipoma.

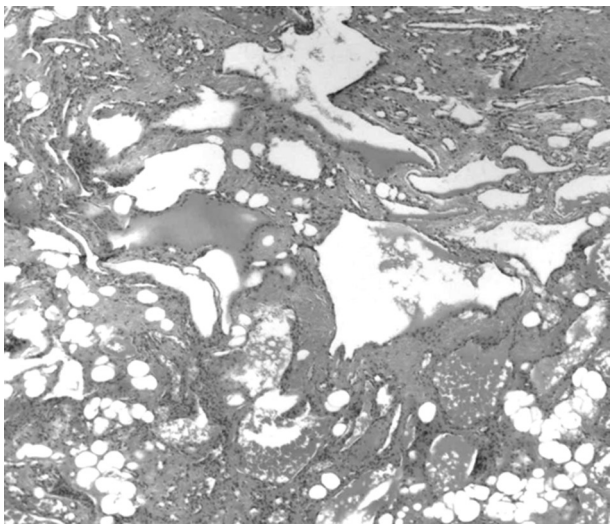

Figure-4. The microscopy shows variable size of vascular channels lined by a single layer of flattened endothelial cells, between mature adipose tissue (HEx40).

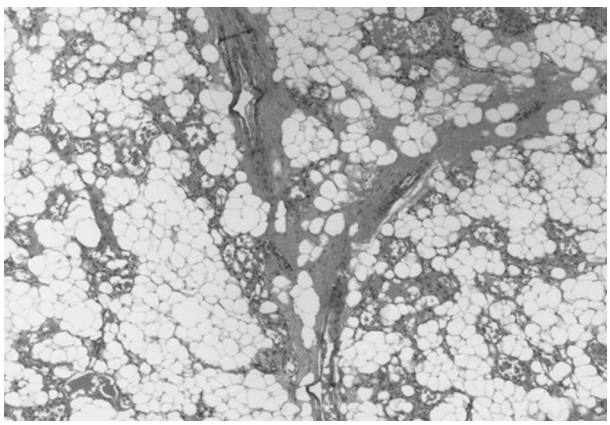

Figure-5. Angiolipoma consisting of a mixture of mature fat cells, capillary vessels with thin wall contain blood (HEx40).

The patient's symptoms ceased after operation and her neurological examination was normal in the second postoperative month. On the control MRI, the right L1-2 hemilaminectomy defect and a granulation tissue enhancing intensely after gadolinium infusion in its neighborhood were seen. No tumor was observed (Figure-6).

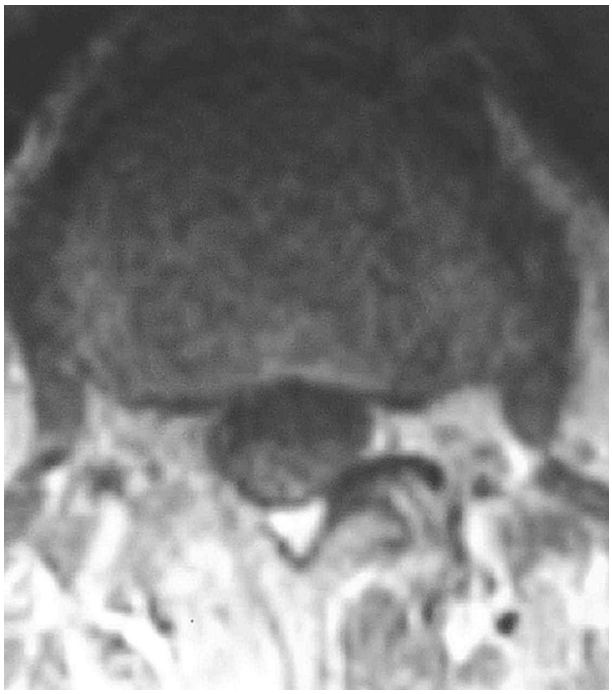

Figure-6. Post-operative control MRI shows no lesion or abnormal contrast enhancement.

DISCUSSION:

The first case of spinal angiolipoma was described in 1890 [3,4]. Spinal angiolipomas have a gross aspect that varies in color from whitish-yellow to a grayish-purple [3]. Angiolipomas may be composed predominantly of vascular and stromal elements, with only a small amount of lipomatous component and blood vessels varying in size from capillaries to arteries [7]. Mitotic figures are infrequent and malignant changes have not been identified [6].

Angiolipomas are classified as a subgroup of lipomas and have been referred by various terms, including hemangiolipoma, angiomyolipoma, vascular lipoma, and fibromyolipoma [4,7]. The majority of these tumors are located in the subcutaneous vessels, muscle, bone and kidney [2]. Uncommon locations such as orbit, breast, parotid gland, palate, rib, mandible, mediastinum and brain [1]. Angiolipomas can be further categorized into two subtypes: noninfiltrating and infiltrating. Noninfiltrating type is more common and is usually well encapsulated. The infiltrating angiolipomas are rare [4].

The etiology and pathogenesis of angiolipomas are unknown. It was suggested that extradural lipomas arise from pluripotantial mesenchymal cells around the adult capillaries which can develop into either blood vessels or fat or all angiomas of nervous system are developmental vascular hamartomas [2,9] or it was pointed out that both hamartomas and angiolipomas arise from the primitive mesenchyme.

Angiolipoma commonly occurs in the lower cervical, upper thoracic, and lumbar regions corresponding to the closure site of the embryonic neural arch [9]. Spinal angiolipomas usually extend over three to four vertebral bodies in length [4,7]. Spinal angiolipomas mostly are located at the epidural space and the great majority of the epidural angiolipomas are located in the thoracic region at the posterior surface of the dura. In contrast with the regular dorsally located angiolipomas at the thoracic level, angiolipomas involving lumbar spine frequently locates anteriorly in the spinal canal [3]. In our case, it was located in lumbar region and anterior surface of spinal cord.

Spinal angiolipomas clinically presents as a slow-growing mass lesion causing compression of the spinal cord [2,3]. Lower extremity numbness, leg weakness, and back pain without a radicular component are frequent initial complaints [2,3,6]. However, as in our case, an angiolipoma located in lumbar extradural space manifests as a radiculopathy.

The more rapid onset of symptoms may depend on vascular factors, such as anomalous vessels, intralesional thrombosis, hemorrhage, or steal phenomena [2,3]. Symptom onset or worsening of the symptoms during pregnancy may have resulted from an increase in tumor volume resulting in impaired spinal venous drainage, or hormonal changes resulting in an increase in extravascular fluid volume [2-4,9]. Increasing body weight may exacerbate the symptoms due to changes in the tumor mass and volume [3].

Spinal epidural angiolipomas can produce symptoms even at small sizes [5]. Our case showed a small sized spinal epidural angiolipoma located in right L1-L2 foramen causing right sciatica. Pagni et al. [5] suggested that several "typical" sciaticas, operated on without magnification, go unexplained or are considered "functional" because spinal epidural angiolipomas, and extradural lipomas in general, are not well recognized by the surgical team, before CT and MRI era.

In diagnosis of spinal angiolipomas, computed tomography (CT) usually demonstrates a mass lesion consistent with fat density [2] and is typically hypodense relative to the spinal cord and has variable degrees of enhancement after contrast administration [7]. MRI is the best imaging method in diagnosis of spinal angiolipomas. Angiolipomas appear as isointense or hyperintense on T1-W images and usually as hyperintense on T2-W images. Most of spinal angiolipomas are enhanced after injection of contrast matter and borders of tumor are defined better [2,3,7].

Spinal epidural metastases, neurogenic tumor, meningioma, lymphoma, and, rarely, tuberculoma and chloroma should be considered in differential diagnosis. We diagnosed our case investigating a probable lumbar disc herniation [4].

Best treatment modality of angiolipomas is surgical removal of tumor. Total resection is the goal of the surgical treatment of spinal angiolipomas but sometimes cannot be reached in the infiltrating type [2,4]. However, angiolipomas sub-totally resected have also a good prognosis with rare reccurence [2,3]. Malignant transformation of angiolipomas has not been reported and radiotherapy is not suggested for these tumors [2,5].

CONCLUSION:

As in case we reported, in differential diagnosis, a spinal extradural angiolipoma should be considered in a patient who had chronic radiculopathy findings when MRI revealed a mass lesion, which was isointense on T1-W, hyperintense on T2-W images and enhancing homogenously and strongly after gadolinium infusion. Treatment choice is total removal, as in our case. Total removal of angiolipoma will prevent recurrence of tumor and reduce the recurrence rate.

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