Case Report

Spinal Epidural Cavernoma Mimicking Lumbar Disc Hernia: Case Report

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Summary

Different pathologies can cause sciatic pain. Although the onset is typical and the radiologic findings simplify the diagnosis, there can be contradiction between the severity of the sciatic pain and the radiologic and neurological examination. It has been reported that epidural vascular malformations and abnormal dilated epidural venous plexus can mimic herniated lumbar disc disease (HLDD). However these are rare situations and herniated lumbar disc surgery is the most frequent approach in neurosurgical practice this vascular pathologies should be kept in mind during the surgery.

Key words: Spinal epidural cavernoma; Lumbar disc disease

CASE PRESENTATION

A 61 year old male patient was admitted to the Department of Neurosurgery of Ege University Hospital with severe sciatic pain on his left leg which was continuing for a month time. On the patient’s lumbar magnetic resonance imaging (MRI) there was sign of pressing mass in the L5-S1 left foramina which was significant on the sagittal positions (Figure-1) but not in and debatable in axial positions (Figure-2) for that reason patients thinner slide (1 mm axial slides) MRI and lumbar computerized tomography (CT) was planned. Thin slides showed no additional pathology but on the CT the hypertrophy of the facet joints was much more apparent. In order to confirm the diagnosis, electromyography was performed but the evaluation was in normal circumstances. Sciatic nerve screening was performed both radiologically and electrophysiologically on the pelvis and the hip, but also no specific findings were found. In his direct hip graph hipoplastic degeneration of acetabulums detected and due to that orthopedic consultation was achieved. The result of the orthopedic consultation was
debateable and some of the orthopedic surgeons said that there is a relative indication of hip prosthesis. To understand the origin of the pain, facet denervation procedure was performed by the algologists in the department of the anaesthesiology and reanimation, afterwards then the patient got better for 2 to 3 days. According to the test result of facet denervation it is thought that sciatic pain was radicular. After the evaluation of patient's radiologic examinations and the clinical findings, it has been decided to perform L5-S1 exploration. During the operation left L5 hemipartial hemilaminectomy, facetectomy and foraminectomy approaches had been performed, and it was noticed that left S1 radixes was tightly wrenched in the entry zone of the foramina. There was purple yellowish hemorrhagic reactional tissue on the radix. The left S1 radix was tightly wedged by the hypertrophic ligamentum flavum and the pathologic tissue. In the inner surface of the facet joint there was a calcified hypertrophic tissue which was connected to the S1 nerve and it was extracted by microdissection and sent to the department of pathology for further examination (Figure- 3). The result of the pathological evaluation was cavernoma.

**Figure 1:** T1 and T2 weighed sagital plane MR images

**Figure 2:** T1 and T2 weighed axial plane MR images
DISCUSSION
In the previous medical literature it had been reported that spinal vascular pathologies can cause sciatic pain and mimic HLDD.

Epidural cavernomas (EC) represent 4% of all epidural tumors\(^1\,\text{24,25,27}\) and they are most frequently seen between 3rd and 5th and has a slight men preponderance.\(^1\) Although histological features are not different from other cavernomas, the epidural lesions are usually encapsulated which is an uncommon speciality for other locations.\(^1,\text{26}\)

Zevgaridis et al. distinguished four patterns of clinical manifestations: 1) slow, progressive spinal cord syndrome; 2) acute spinal cord syndrome 3) local back pain; 4) radiculopathy.\(^29\) As acute or chronic spinal cord syndromes are related to the hemorrhagic, in cases who suffer from low back pain or radiculopathy symptoms are associated with the growth of the lesions.\(^13,29\) The symptomatology of these pathologies similar to herniated lumbar disc diseases. The pain is usually of rapid onset, long lasting and very severe which can not be controlled by non steroidal antiinflammatory drugs.\(^8\) In previous published medical literature, it is noted that acute and subacute onset attributable to microhemorrhages or hematomas is not uncommon and might result in motor and sensory deficits.\(^10,14,24,26\) Chronic microhemorrhages into the surrounding tissue cause neurological deterioration with subsequent gliosis and progressive myelopathy. Symptoms depends on the anatomical level and the degree of the compression of the spinal cord or nerve roots affected.

Especially in some cases like we reported, missing its prediagnosis should not be come as a surprise when the vascular pathology is bled and main mass pressing the nerve caused by this reactional connective tissue secondary to bleeding.

For the radiologic examination, diagnosis usually provided by MRI. Extension of a lesion to the intervertebral foramina is not uncommon.\(^6,7\) In contrast to the other lesions (schwannomas, meningiomas and etc.) in similar locations epidural cavernomas never cause any enlargement or destruction or body erosion of

\textbf{Figure 3: Surgical resection specimen}
A lesion in spine could easily be misinterpreted as a disc herniation when it is located in the intervertebral foramen. Spinal ECs are common in the thoracic spine and very sporadic in cervical and lumbar levels.\(^9,26,29\)

The natural course of spinal ECs is unknown and due to that it is hard to decide whether to treat or long-term follow-up symptomatic patients.\(^3,13,15,18\) Most of the authors suggest surgical removal,\(^1,14,17,24,29\) Similar to other cavernomas total removal is the goal of surgery and microsurgical technique is essential. Depending on the size of lesion hemilaminectomy or laminectomy could be performed. The pseudocapsule of EC facilitates dissection from the ligaments, dura and nerve roots.\(^23,26\) In the postoperative period 90% of patients demonstrate improvement in neurological deficits confirming the effectiveness of surgical treatment.\(^10,14,17,22\) Although in spinal ECs the annual bleeding rate is relatively low compared to the other locations, preventive removal of cavernoma is more beneficial if the surgery is performed before bleeding.

The most important entity about these pathologies is during the operation microsurgical technical should be used and the nerve root should be decompressed until the feeling of enough decompression has been achieved by the surgeon. The microscope is essential for microdiscection when performing the surgery. When a neurosurgeon gets suspicious about these kinds of pathologies the specimen should be sent to pathological evaluation.

Additionally in some articles dilated epidural venous plexus had been presented as lumbosacral epidural vascular malformations.\(^5\) Due to MRI findings have slight differences than the herniated disc fragments on the T1 and T2 weighed images, their diagnosis also could be handled during the operation.\(^8,11,12,16,19,20,30\) Even though the etiological and the pathophysiological of these vascular pathologies could not be clarified in sciatic pain, the surgical decompression is the gold standard. The post operative period after surgery is usually uneventful and the radicular pain relief and the neurological recovery could be carried out early.

**CONCLUSION**

Spinal ECs could mimic lumbar herniated disc pathologies when they are localised on the nerve roots. These kind of vascular pathologies should be always kept in mind when performing lumbar disc surgery. If a neurosurgeon faces a situation like this adequate decompression should be held and the pathological specimen should be further investigated.

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**Received by:** 25 April 2013  
**Revised by:** 05 July 2013  
**Accepted:** 29 October 2013
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