

HUGE SEQUESTERED SPINAL DISC WITH TUMOR APPEARANCE: A CASE REPORT

*Cüneyt Göçmez**, *Kağan Kamaşak**, *Seyit Kağan Başarslan***, *Adnan Ceviz**

**Department of Neurosurgery, Dicle University, School of Medicine, Diyarbakır, Turkey*

***Department of Neurosurgery, Mustafa Kemal University, School of Medicine, Hatay, Turkey*

Abstract

A 52-year-old man presented with a voluminous mass lesion resembling an intraspinal-extradural tumor on magnetic resonance imaging. He had complaint of mainly left lower extremity pain and numbness for 3 months, which is exacerbated suddenly a couple of days before admission. On neurological examination, he was accompanied by no lateralized motor deficits. Magnetic resonance imaging demonstrated a tumor-like longitudinal lesion, extending from the L4-5 to the L5-S1 intervertebral spaces and occupying more than the left half of the vertebral canal. The lesion, which is reported to be able to an extradural spinal tumor, turned out to be unusual sequestered disc fragment thanks to the operation.

Key words: Disc herniation, extradural mass, spinal neoplasm.

Geliş Tarihi / Received: 12.08.2013,
Kabul Tarihi / Accepted: 24.09.2013

INTRODUCTION

A many kind of herniated spinal disc have been described since the first made of lumbar disc surgery in 1934 (1). Only 15% of these include sequestered fragments. Non-typical sequestered disc herniation is extremely rare (0.4%) and can only be identified during surgery (2). But even after the introduction of high-resolution magnetic resonance imaging (MRI), it is still frequently misinterpreted as neoplastic masses (2, 5). Unfortunately, no particular symptoms or signs are also known to allow differentiation between atypical hernias and spinal tumors. Rarely, a giant sequestered fragment without creating any significant changes and not affiliated with the disk distance can be seen on the channel. Therefore, it is commonly mixed with spinal tumors (2).

MRI findings are useful in the preoperative diagnosis of disc herniation. The differential diagnosis includes not only metastatic lesions but also some other benign epidural lesions such as synovial cysts, hematomas, and abscesses (3,4). Here we describe a rare case of a huge herniated and sequestered disc, which is misinterpreted as a spinal tumor on the radiological report.

CASE

A 52-year-old man was admitted to our hospital having experienced mainly left lower extremity pain or sciatica for 3 months, which is exacerbated suddenly 2 days before admission. His neurological status showed no detectable muscle weakness. Neurological examination revealed positive Lasegue sign and sensory deficit over the L5 and S1 dermatomes in both sides, but bladder and bowel functions were intact at all. By radiological evaluation, MRI revealed a huge, tumor-like, longitudinal lesion, extending from the L4-5 to L5-S1 intervertebral spaces, and occupying almost the entire left half of the vertebral canal. The lesion is appeared homogeneously isointense on T2-weighted imaging (Fig. b) and slightly hypointense on T1-weighted imaging (Fig. a, d). T1-weighted MR imaging with gadolinium demonstrated a large lesion with peripheral rim of enhancement (Fig. c). Finally, the lesion showed narrowing of the subarachnoid space with displacement of the dura toward the posterior

wall of the spinal canal (Fig. a, b, c, d).

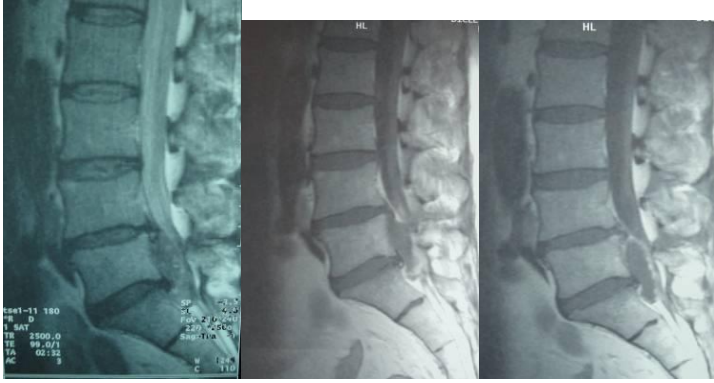


Figure a. Sagittal T2-weighted magnetic resonance (MR) image showing an isointense mass lesion extending from the L4-5 to L5-S1 spaces.

Figure b. Similarly, sagittal T1-weighted MR image demonstrating a hypointense mass at the L5 vertebra.

Figure c. Sagittal T1-weighted MR image with gadolinium showing peripheral enhancement of the lesion.



Figure d. Axial T2-weighted MR image hypointense showing mass lesion at the same level occupying the left spinal canal at the L5 vertebra.

The patient underwent L5 and S1 hemilaminectomy, in preparation for an oncological operation. However, investigation of the epidural space unexpectedly found a huge mass, which was easily removed totally from the left vertebral canal with the macroscopic appearance of a sequestered disc. The fragment was probably delivered from the L4-5 level, but was completely detached from the disc space. By a meticulous investigation under microscope, a tear of the annulus was identified at the L4-5 level. The patient's postoperative course was ordinary and he demonstrated full pain free recovery within a month. Histopathological examination confirmed the presence of disc material without neoplastic activity.

DISCUSSION

Only isolated case reports describing sequestered disc fragments simulating intraspinal benign or malignant space-occupying lesions have been published (1,4,6). Unusual presentation of sequestered disc fragments on preoperative MRI is extremely rare. A recent report by Carvi y Nievas and

Hoellerhage found that only 11 of 3000 patients suffering from lumbar disc herniation were mistaken for another spinal space-occupying lesion (2).

It is usually not difficult with current MRI techniques to differentiate lumbar disc herniation from other conditions (7). However, rare sequestered disc fragments may still be mistaken for other neoplastic or non-neoplastic lesions. Complete detachment and migration, even intra or extra durally, as well as extraordinarily large dimensions of the disc fragment are two of the commonest reasons of this confusion. Atypical sequestered disc herniations usually appear as heterogeneously hypointense to isointense on T1-weighted sequences and hypointense or hyperintense on T2-weighted MR images, depending on location (intra- or extradural) and time of evolution (2). MRI with contrast medium is useful to differentiate herniated disc from tumors and other epidural lesions, as the non-enhancing disc fragment is commonly associated with peripheral enhancement. Herniated disc fragment rarely includes central enhancement, a finding attributed to vascular granulation tissue infiltrating the fragment, but is never associated with enhancement of the spinal meninges, an early characteristic finding of neoplastic lesions such as lymphoma, neurofibroma, neuroblastoma, mesothelioma, and lung cancer (2,8).

Contrast-enhanced MRI scans are useful to differentiate a herniated disc from a disc space infection or tumor. Likewise in our case, peripheral enhancement around the nonenhancing disc fragment is commonly seen on contrast MRI. A herniated disc fragment will rarely enhance centrally, which is attributed to vascular granulation tissue infiltrating the fragment (6).

In our case, the lesion appeared homogeneously isointense on T2-weighted MR imaging (Fig.b), that let us suspect a neoplastic lesion, but MRI with contrast medium showed peripheral enhancement of the rim of the lesion (Fig. c), which is typical appearance of a disc fragment. Nevertheless, the large size and elongated shape of the lesion were confusing, leading us to misinterpret its nature, since lumbar disc herniations are usually much smaller and round. A further factor of confusion was the fact that this longitudinal mass was related to two different intervertebral spaces without either reduction of their height or changes of obvious disc color on MRI (Fig. b,c), misleading us from suspecting a sequestered disc fragment. In addition, no clear radiological evidence was found of any possible connection of the mass to adjacent disc space. Furthermore, the lesion showed effacement of the subarachnoid space with smooth tapering above and below the mass with a degree of displacement of the dura toward the back of the spinal canal (Fig.a,b,c,d). Therefore, the lesion was considered to locate in the extradural compartment, since intradural-extramedullary tumors include smooth tapering of the subarachnoid space opposite to the mass to an acute angle and capping of the ipsilateral subarachnoid space.

In a result, sequestered lumbar disc fragments should always be considered in the differential diagnosis of mass lesions of the spinal canal, and even when their shape and voluminous size are unusual.

REFERENCES

1. Mixter WJ, Barr JS Rupture of the intervertebral disc with involvement of the spinal canal. N Engl J Med (1934) 211:210–215
2. Carvi y Nievas MN, Hoellerhage HG. Unusual sequestered disc fragments simulating spinal tumours and other space- occupying lesions. J Neurosurg Spine 11: 42–48, 2009
3. Lidov M, Stollman A, Casden A, Som P, Bederson J. MRI of lumbar intradural disc herniation. Clin Imaging 18: 173–178, 1994
4. Özer E, Yurtsever C, Yücesoy K, Güner M. Lumbar intraradicular disc herniation: report of a rare and preoperatively unpredictable case and review of the literature. Spine J 7: 106–110, 2007
5. Aydın MV, Özel S, Sen O, Erdoğan B, Yıldırım T. Intradural disc mimicking a spinal tumour lesion. Spinal Cord 42: 52–54, 2004
6. Nievas MNC, Hoellerhage HG. Unusual sequestered disc fragments simulating spinal tumors and other space-occupying lesions. J Neurosurg Spine 2009;11:42–8.
7. Ramsey RG: Neuroradiology. Philadelphia, Saunders, 1994
8. Blikra G: Intradural herniated lumbar disc. J Neurosurg 31: 676–679, 1969