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CASE REPORT / OLGU SUNUMU

Sequestered Lumbar Disc Fragment Mimicking Dumbbell-Shaped Spinal Tumor

Nörojenik Dambıl Şekilli Spinal Tümörü Taklit Eden Sekestre Lomber Disk Fragmanı

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ÖZ

Manyetik rezonans görüntüleme (MRG) lomber disk herniasyonlarını spinal malignitelerden ayırmak için genellikle yeterlidir. Fıtıklaşmış disk sekestre fragman ya da fragmanlara sahipse bu ayrım mümkün olmayabilir. Çeşitli benign ve malign omurilik lezyonları MRG'de dambıl şeklinde bir görünüm gösterebilir ancak sekestre disk fragmanı için bildirilmiş bir yayın yoktur. Lomber MRG'sinde dambıl şekilli lezyonu ile schwannomu düşündüren ancak kesin tanısı lomber disk herniasyonu olan 49 yaşında bir erkek olguyu sunduk.

Anahtar kelimeler: Sekestre disk, dambıl şekilli, schwannoma

ABSTRACT

Magnetic resonance imaging (MRI) is often sufficient to distinguish lumbar disc herniations from spinal malignancies. If the herniated disc has sequestrated fragment/s, the distinction may not be possible. Various benign and malign spinal cord lesions may show dumbbell-shape appearance on MRI but there is no reported paper for sequestrated disc fragment. We present a 49-year-old male whose lumbar MRI resembles schwannoma with dumbbell-shaped lesion, but the definitive diagnosis was sequestered lumbar disc herniation.

Keywords: Sequestered disc, dumbbell-shaped, schwannoma

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Introduction

Lumbar disc herniation (LDH) is one of the most common spinal degenerative diseases that can cause back and radicular leg pain (1). Despite the known superiority of magnetic resonance imaging (MRI) in the diagnosis of LDH, occasionally it may be misinterpreted with other spinal pathologies, especially in the presence of sequestered fragments (2). There are case reports in the literature which have mentioned that sequestered disc fragments may mimic spinal tumors (2). Dumbbell-shaped appearance on MRI may be seen in various benign and malign spinal tumors (3).

Case Report

A 49-year-old male patient presented to the ED in the evening (20:00) with severe right leg pain. He claimed that his leg pain was present for the last 15 days but muscle weakness was started during the last few hours. In the neurological examination, right femoral nerve stretch test was positive and there was a muscle weakness in knee extension and foot dorsiflexion (3/5). Magnetic resonance imaging revealed a tumor-like lesion between L3–L4 disc spaces. In the sagittal planes, it has no connectivity with the disc space and in the axial plane, the lesion has the dumbbell-shape appearance (Figure 1). An urgent lumbar laminectomy was performed. After laminectomy and the removal of ligamentum flavum, the lesion was seen in the related foramen at the right side. The lesion had ~~a~~ no continuity with the dura or root. The lesion was totally removed. The surgical diagnosis was considered as sequestered disc herniation and pathologic examination confirmed the lesion as a disc tissue. The complaints of the patient were resolved just after the operation.

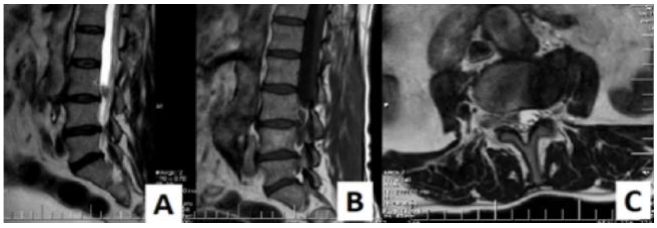

Figure 1. Sagittal MRI image in T2-weighted sequences showing hypointense lesion at L3-4 disc level (a), sagittal MRI image in T1-weighted sequences showing hypointense lesion at L3-4 disc level (b), axial MRI image in T2-weighted sequences showing hypointense dumbbell-shaped lesion at L3-4 foramina.

Discussion

Various benign and malign tumors may show dumbbell-shape appearance on MRI. The dumbbell appearance of spinal tumors refers to a tumor which has both a component within the canal and a component in the paravertebral space contiguous with each other via a thinner tumor component traversing the neural exit foramen. The most common tumor group that gives the dumbbell-shaped appearance on MRI is neurogenic tumors consisting of schwannoma and neurofibromas (80%). Approximately 69% of those neurogenic tumors are schwannomas (4). For this reason, we thought of a possible schwannoma in our patient in the first stage.

The other tumors that may have dumbbell shape appearance includes meningioma, neuroblastoma/ganglioneuroma, hemangioma, angiolipoma, paraganglioma, malignant peripheral nerve sheath tumor, malignant lymphoma, melanoma, rhabdomyosarcoma, small round cell tumor, metastatic seminoma, synovial sarcoma, small round cell tumor, chordoma, fibrosarcoma (3,4). The malignancies mentioned above typically show homogeneous or heterogeneous and rarely ring-like enhancement (5). Schwannomas, which are of great importance in differential diagnosis, generally show homogeneous enhancement (6). Nerve sheath tumors may resemble sequestered fragments with contrast enhancement as isointense on T1W and hyperintense on T2W. However, they are primarily localized intradurally; whereas intradural localization is only 0.3% in disc herniation (5).

Sequestrated disc fragments show some characteristic MRI features as hyperintense on T2W and moderate to hypointense on T1W. Also, the disc appears as hypointense surrounded by the hyperintense ring in case of contrast infusion. The proposed mechanism for that appearance is inflammatory reaction and neovascularization around the sequestered disc fragment (5).

As some malignancies may show ring-type enhancement, even gadolinium-enhanced MRI may not be sufficient for differential diagnosis in some points. So, the remaining option for definitive diagnosis will be surgical decompression and histopathology.

Our patient underwent emergency surgery due to his acute onset of neurological symptoms. We just had been able to request a non-contrast lumbar MRI because the contrast-enhanced MRI was not available at night. The radiographic images showed a dumbbell-shaped lesion which was suggesting most likely a schwannoma but diagnosed as a sequestrated disc fragment, surgically and pathologically.

Conclusion

The sequestrated disc fragments should also be added to the differential diagnosis list of dumbbell-shaped lesions of the spine.

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