

Ependymoma of Filum Terminale Mimicking Lumbar Disc Herniation

Lomber Disk Hernisini Taklit Eden Filum Terminale Ependimomu

ABSTRACT

A patient with ependymoma of filum terminale which was initially diagnosed as a lumbar disc herniation is presented. Compression of spinal nerve roots by an intradural mass due to ependymoma of filum terminale is a rare condition and should be kept in mind in the differential diagnosis of lumbar disc herniation. The normal postoperative appearance is important to recognize because a number of changes occur normally during the healing period. The differential diagnosis between an epidural scar or recurrent disc herniation and a spinal mass can usually be made with magnetic resonance imaging. In this study, the crucial role of magnetic resonance imaging with intravenous contrast in the differential diagnosis is also emphasized.

KEY WORDS: Ependymoma, filum terminale, lumbar disc disease, magnetic resonance imaging, spinal neoplasm

ÖZ

Bu çalışmada, ilk tanısı lomber disk hernisi olan bir filum terminale ependimomu olgusu sunulmaktadır. Sinir liflerinin filum terminale ependimomuna bağlı bir intradural kitle nedeniyle kompresyonu oldukça nadir bir durum olup lomber disk hernisinin ayırıcı tanısında düşünülmelidir. İyileşme döneminde ortaya çıkan değişiklikler nedeniyle postoperatif dönemde tanınması oldukça önemlidir. Epidural skar, rekürren disk hernisi veya spinal kitle arasındaki farklılıklar genellikle manyetik rezonans görüntüleme yöntemleri ile belirlenebilir. Bu çalışmada, aynı zamanda kontrastlı manyetik rezonans görüntülemenin önemi de vurgulandı.

ANAHTAR SÖZCÜKLER: Ependimoma, filum terminale, lomber disk hernisi, manyetik rezonans görüntüleme, spinal kitle

Ahmet MENKÜ
R. Kemal KOÇ
Bülent TUCER
Onur KULAKSIZOĞLU
Hidayet AKDEMİR

Department of Neurosurgery,
School of Medicine, Erciyes University,
38039 Kayseri, Turkey

Received : 10.03.2004

Accepted : 03.04.2004

Correspondence address:

Ahmet MENKÜ
Erciyes Üniversitesi, Tıp Fakültesi
Nöroşirürji AD. 38039, Kayseri, Turkey
Fax : +90 352 437 29 34
E-mail: menkua@erciyes.edu.tr

INTRODUCTION

MRI with intravenous contrast has recently become the imaging modality of choice in the evaluation of patients developing recurrent back pain or symptoms following laminectomy and/or discectomy (1). The normal postoperative appearance is important to recognize because a number of changes occur normally during the healing period (1, 5). The causes of delayed recurrence of lower back and sciatic pain are multiple and include arachnoiditis, epidural fibrosis, facet osteoarthritic degenerative change, instability, new intervertebral disc herniation, spinal stenosis, and vertebral osteomyelitis.

CASE REPORT

A 45-year-old woman presented with a 2-month history of left lower extremity pain. The pain had been gradually increasing during a period of 2-months and was associated with decreased walking tolerance. She was evaluated at a local hospital and treated with a non-steroidal anti-inflammatory medication and bed rest. After three weeks of conservative treatment, she presented at our clinic for further evaluation. Physical examination revealed 4/5 dorso-flexion of the ankle. Sensation to light touch and pins was decreased in the left L-4 and L-5 distributions. The straight-leg raising test showed limitation (30-45°) in the left lower extremity. Plain lumbosacral radiography revealed normal anatomy. Computed tomography (CT) scan showed bulging at the level of the left L4-5 and facet hypertrophy (Figure 1). T1 and T2 sagittal and axial magnetic resonance (MR) images also revealed a bulging and moderate stenosis at the level of the left L4-5 (Figure 2A, B). The patient underwent L4-5 discectomy and left L5 foraminotomy.

The operation produced some decrease in her pain but not the leg weakness. The patient had noted increasing difficulty with ambulation. Her leg pain had been gradually increasing postoperatively over a period of three months. She was repeatedly admitted to our clinic to search for failed back syndrome. A new motor examination displayed 3/5 dorso-flexion of the ankle while sensory examination showed diminished sensation in the L-4 and L-5 dermatomes. Straight-leg raising test showed limitation bilaterally (15-30°). Pre-contrast axial and sagittal MRI showed no pathology.

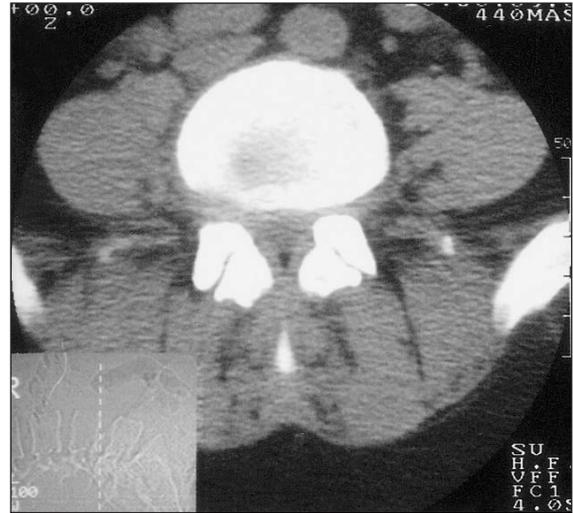


Figure 1: Computed tomography (CT) scan showing a left bulge at the level of the left L4-5 and facet hypertrophy.

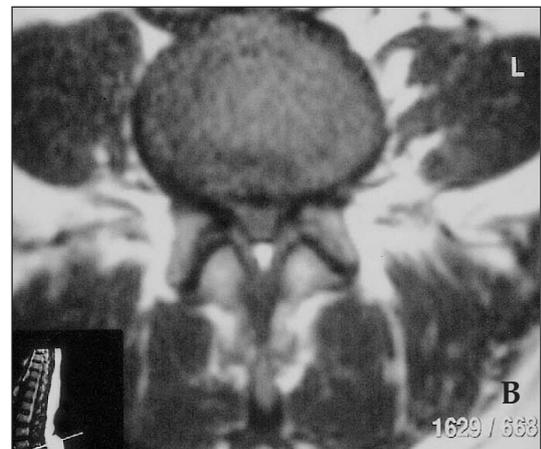
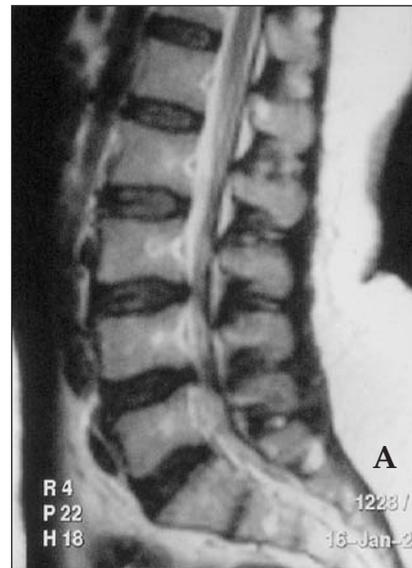


Figure 2: T2-weighted sagittal (A) and T1-weighted axial (B) MRI revealing a bulge and moderate stenosis at level of the left L4-5

However, axial and sagittal MRI with contrast not only showed normal L4-5 level, but also clearly demonstrated an enhancing intradural mass with regular margins at the level of L2-3 (Figure 3A, B). The patient underwent left L-2 and L-3 hemilaminectomies for a minimally invasive approach. Intradural exploration revealed a well-delineated lesion expanding to the terminal filum in

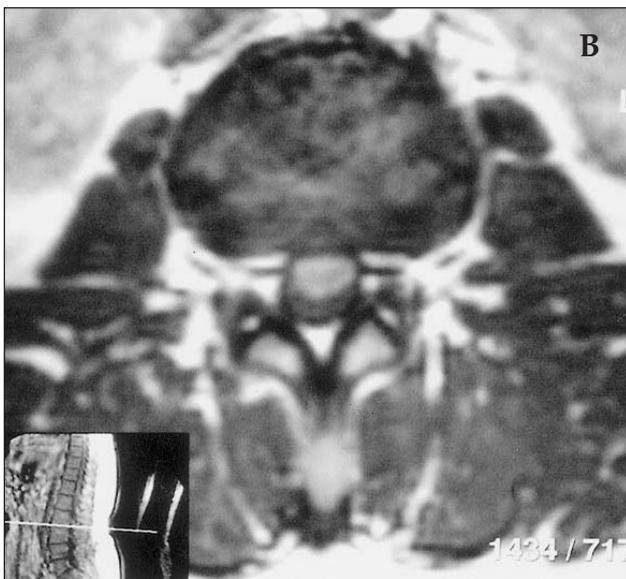


Figure 3: Sagittal (A) and axial (B) MRI with contrast showing an enhancing intradural mass with regular margins at the level of L2-3.

the midline. The mass was contained by an intact pseudocapsular wall with diffuse growth between the nerve roots of the cauda equina. It originated from the filum terminale. The mass was removed totally together with the 1 cm distal and proximal part of filum terminale. The dura was closed primarily. Histopathologic examination identified the lesion as a myxopapillary ependymoma of filum terminale.

The patient had an uneventful postoperative course. The left leg pain improved and she was discharged a week later. At the 6-month follow-up examination, the neurological deficit in her lower extremity and the walking distance had improved.

DISCUSSION

The differential diagnosis of an intradural mass in the lumbar area includes neurofibroma, ependymoma, lipoma, meningioma, epidermoid tumor, arachnoid cyst, drop metastases, intradural disc herniation and inflammatory mass such as may be seen with adhesive arachnoiditis (3, 4, 6, 7). Our provisional diagnosis was meningioma. At the time of intradural exploration however, a well demarcated mass compressing the nerve roots was encountered. The lesion was not adherent to the dura and originated from the filum terminale.

To our knowledge, this is the first report of an ependymoma of filum terminale mimicking lumbar disc disease and diagnosed with MRI findings.

Postacchini et al (4) reported twelve patients who had intradural tumours in the lumbosacral area with symptoms and signs simulating lumbar disc disease. One of the twelve patients with an ependymoma had a coccygectomy before the correct diagnosis was made.

Bradley (1) demonstrated that MRI with contrast is often useful in sorting out different causes of lower back pain and lumbar radiculopathy. It is particularly useful in distinguishing recurrent disc herniation from epidural scarring in the postoperative spine. Contrast enhancement is also useful in diagnosing tumors in the intramedullary space.

Lyu et al (2) reported a 49-year-old woman with a lower thoracic disc herniation mimicking acute lumbosacral radiculopathy. Surgical removal of the

herniated disc and osteophytes rapidly relieved her symptoms and neurologic deficits. Patients whose neurological signs and symptoms do not improve should be investigated for an intradural spinal mass.

In conclusion, despite sophisticated contemporary neuroradiological facilities, we may still have diagnostic difficulties with some spinal tumors. The physician treating spinal disorders should be aware that spinal tumors can present as an intradural extramedullary enhancing mass on MRI with contrast, simulating lumbar disc disease.

REFERENCES

1. Bradley WG: Use of contrast in MR imaging of the lumbar spine. *Magn Reson Imaging Clin N Am* 7; 439-457, 1999
2. Lyu RK, Chang HS, Tang LM, Chen ST: Thoracic disc herniation mimicking acute lumbar disc disease. *Spine* 24; 416-418, 1999
3. Lidov M, Stollman A, Casden A, Som P, Bederson J: MRI of lumbar intradural disc herniation. *Clin Imaging* 18; 173-178, 1994
4. Postacchini F, Urso S, Tovaglia V: Lumbosacral intradural tumours simulating disc disease. *Int Orthop* 5; 283-289, 1981
5. Ross JS: MR imaging of the postoperative lumbar spine. *Magn Reson Imaging Clin N Am* 7; 513-524, 1999
6. Stambough JL, Reid JH, Ross MA, Simeone FA, Booth RE: Isolated intradural metastasis simulating lumbar disc disease. *Spine* 16; 581-583, 1991
7. Wiestler OD, Schieffer D, Coons SW: Myxopapillary ependymoma, in Kleihues P, Cavaneer WK (eds): *Pathology and Genetics of Tumors of the Nervous System*. Lyon: IARC Press, pp 78-79, 2000