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Spinal Extradural Meningeal Cyst: Incorrect Radiographic and Clinical Diagnosis

Spinal Ekstradural Meningeal Kist: Hatalı Radyografik ve Klinik Tanı

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Summary

Extradural meningeal cysts are rare lesions and are uncommon causes of spinal cord or nerve compression. Most of these lesions probably remain unrecognized life-long, because they cause no symptoms. With the widespread use of new imaging techniques, asymptomatic spinal extradural meningeal cysts are becoming increasingly common. The therapeutic guidelines have not been well-established yet. Generally, patients with neurological deficits undergo surgery, whereas conservative approach is advised in asymptomatic individuals. Here, we report a 44-year-old woman who has suffered back pain for more than 20 years. Her symptoms were accompanied by numbness and tingling at the lower limbs. She has been followed with various diagnoses and treatment modalities in different centers. We established the diagnosis of huge thoracal extradural meningeal cysts and followed the patient with conservative approach. *Turk J Phys Med Rehab 2012;58:252-4.*

Key Words: Meningeal cyst; neurological symptom; conservative management

Özet

Ekstradural meningeal kistler nadir görülen, omurilik veya sinir basısı yapabilen lezyonlardır. Bu lezyonların çoğu hiçbir semptoma neden olmadığı için muhtemelen hayat boyu tanımlanmadan kalmaktadır. Yeni görüntüleme tekniklerinin yaygın kullanımı ile asemptomatik spinal ekstradural meningeal kistler giderek yaygınlaşmaktadır. Tedavi kılavuzları henüz tam olarak oluşturulamamıştır. Genel olarak nörolojik defisiti olan hastalarda cerrahi, asemptomatik kişilerde ise konservatif yaklaşımlar tavsiye edilir. Burada 44 yaşında 20 yıldan uzun süredir sırt ağrısı ve beraberinde alt ekstremitede uyuşma ve karıncalanma yakınması olan değişik tanılarla takip ve tedavisi yapılan bir hastayı sunacağız. Biz torakal büyük ekstradural meningeal kist tanısı koyduğumuz hastayı konservatif tedavi yaklaşımı ile takip ettik. *Türk Fiz Tıp Rehab Derg 2012;58:252-4.*

Anahtar Kelimeler: Meningeal kist; nörolojik semptom; konservatif tedavi

Introduction

Extradural Meningeal Cysts (EMCs) are rare lesions and are uncommon causes of spinal cord or nerve compression (1-3). It was considered that the etiology of EMCs is commonly congenital and rarely acquired due to inflammatory, iatrogenic and traumatic reasons (1,4) but it was not always possible to identify the etiology precisely. The therapeutic guidelines are not also well-established yet, but generally surgical interventions in the presence of neurological deficit, and otherwise conservative approaches were advised (1-3). However, the management of the huge EMCs which cause some neurological symptoms but not significant deficits were a problematic subject for the physicians.

Here, we report a case of a huge EMC in the thoracic region extending from T3 to T10, which caused numbness and tingling in the lower limbs and was managed by conservative approaches.

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Case

A 44-year-old woman with back pain and intermittent numbness at the lower extremities presented to our outpatient clinic. She had suffered from back pain for 20 years long and intermittent numbness and tingling were added to her complaints approximately 10-12 years ago. In her history, she described multiple applications to various hospitals and various imaging studies, but she had none of the images or the reports. She also described very painful myelography experience and a diagnosis of cervicothoracal spondylodiscitis due to brucellosis. In detailed questioning, she described use of a medication for brucellosis for a period of 3 months, but she did not remember the medications.

In her physical examination, there was no limitation in range of motions of the spine, but all motions were painful to all directions, and there was prominent muscle spasm in the thoracolumbar region. There were no sensory deficits to light touch, pinprick, deep pain, or pressure. In addition, no weakness and spasticity of the limbs was observed. Deep tendon reflexes were intact and Babinski sign was negative. There were no bowel or bladder disturbances. Superficial and deep sensation and voluntary contraction in the anal region was normal. Firstly, some mild degenerative changes were determined on spinal roentgenogram and consecutive lumbar MRI and local physical therapy modalities (TENS, hot pack, ultrasound and therapeutic exercises) were performed. Afterwards, some detailed imaging modalities were needed, because the complaints of the patient were reduced a little but not completely relieved after recurrent physical therapy applications and some local injections to the thoracolumbar paravertebral muscles. MRI of the thoracolumbar spine demonstrated a dorsally located intraspinal extradural cystic lesion extending from T3 to T10 with indentation to the thecal sac but without severe compression. No nerve roots or other nerve tissue could be identified within the cyst. There were no concomitant anomalies of the vertebrae and the spinal cord. The signal intensity of the lesion was similar to that of Cerebrospinal fluid (CSF), suggestive of a spinal EMC (Figure 1A and 1B).

After the precise diagnosis, the patient was referred to the neurosurgery department due to a huge EMC and un relieved pain accompanied with neurological signs. The patient mentioned that she attended multiple neurosurgery outpatient clinics and some surgeons suggested surgery but some others did not, thus, she decided not to go to surgery due to probable risks. Afterwards, the patient was trained and instructed about the postural exercises and scheduled for follow-up. After six months, her physical examination was normal and she had no neurological complaints. MRI revealed no increase or change in the cyst size or nature (Figure 2A and 2B). Finally, annual physical examination and MRI were recommended.

Discussion

The classification of spinal meningeal cysts in the literature is confusing and indistinct. In 1988, Nabors et al. (4) simplified the classification of spinal meningeal cysts into three major categories: extradural cysts without spinal nerve root fibers (Type 1), extradural cysts with spinal nerve root fibers (Type 2), and intradural meningeal cysts (Type 3). Type I is further divided into two subgroups: Type IA is an EMC (extradural arachnoid cyst) and a Type IB is a sacral meningocele (occult sacral meningocele). Type II is a Tarlov's perineural cyst or spinal nerve root diverticulum and Type III is a spinal intradural arachnoid cyst.

EMCs are more frequent in adolescents and are located primarily in the thoracic spine (1), but they can occur at any age and at any spinal level. Most of these lesions probably remain unrecognized life-long, as they cause no symptoms (2). The symptoms usually manifest as painless progressive spastic paraparesis and difficulty in walking, motor weakness and sensory loss. Dorsal and low back pains are not common features (1,3). The differential diagnosis seen on MRI includes ganglion cysts, ependymal cysts, synovial cysts, epidermoid cysts or dermoid cysts, enterogenous cysts, teratogenous cysts, hydatid cysts, and intervertebral disc cysts (5,6). MRI is the most sensitive and specific method for detecting an EMC and seems to be the diagnostic procedure of choice (7).

Depending on the localization and size of the cyst and mechanical compression, clinical presentation can differ from

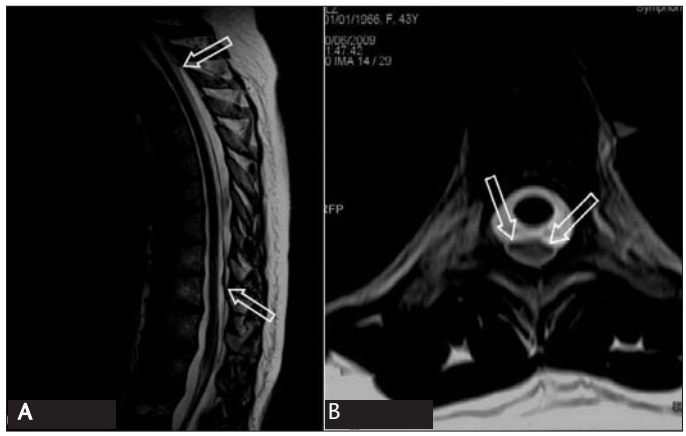

Figure 1. **A)** Sagittal T2 weighted MRI of the thoracal spine showing a large dorsally located cyst containing CSF at the T3-T10 levels (arrows). **B)** Axial T2 weighted MRI of the thoracal spine reveal an EMC. No nevre roots are contained within the cystic structure. This isn't causing severe mass effect on the tecal sach and it isn't extend neural foramen. Post contrast, there was no enhancement.

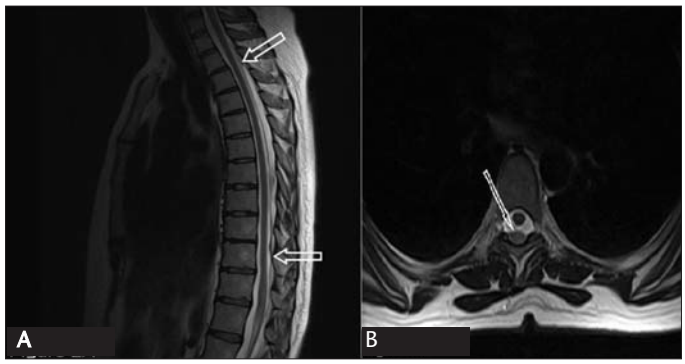

Figure 2. **A)** Sagittal T2 weighted MRI and Figure **B)** Axial T2 weighted MRI: Six months follow-up MR imaging revealed no increase and change of the cyst size or nature.

patient to patient. No correlation exists between the size of a cyst and the need for treatment. For incidentally discovered EMCs, surgery is not recommended, because most of them cause no symptoms. Surgical treatment is usually recommended if progressive neurological dysfunction develops. As a surgical procedure, complete surgical excision and obliteration of the communicating dural defect are generally applied along with laminectomy of the affected vertebrae (4,6,8,9). However, total excision is usually difficult because the cyst generally tightly adheres to the neural tissue of the dura, or because of intraoperative bleeding from a well-developed epidural venous plexus. If complete resection is impossible, partial resection and fenestration of the cyst wall are performed commonly (6,8,9), however, results of the surgery are sometimes unfavorable. Although symptoms have been improved with the surgical treatment, complete recovery has been seen in only a few cases (10). Alternative treatment options such as shunting procedures (11) have their inherent risks and are less favorable (12). Several less invasive techniques have been proposed recently (13) but single aspiration is not recommended because cysts tend to refill (3,14).

In this presented case, the etiology also was not certain that it was congenital or acquired due to invasive applications or spondylodiscitis. The main reason we report this case was to take attentions on the difficulty in the diagnosis and to mention about the conservative management of the huge EMCs even in the presence of some neurological symptoms such as numbness and tingling. This approach might rescue the patient from some serious risks of surgery. In conclusion, in prolonged painful neuro-musculo-skelatal conditions, some extended imaging studies should be considered earlier than years and the conservative management with closely follow-up of the clinical status and with serial imaging should be the therapeutic approach of choice in the management of huge EMCs.

Conflict of Interest:

Authors reported no conflicts of interest.

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