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Case Report

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A rare cause of low back pain: lumbar lateral meningocele

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ABSTRACT

Lumbar meningocele is the herniation of the arachnoid mater enlarged neural foramen to the thecal sac. A 55-year-old female patient applied with low back pain. Physical examination there were multiple cutaneous neurofibromas. The strength of lower extremity muscles was normal bilaterally. Babinski sign was negative bilaterally with normoactive deep tendon reflexes. Lumbarmagnetic resonance imaging images show ectasia. The diagnosis was lateral meningocele associated with neurofibromatosis. Lumbar meningocele is a benign pathology that can be seen in a wide range from asymptomatic to paraparesis, which does not require surgical treatment, unless it is symptomatic, which is frequently associated with neurofibromatosis type 1 (NF1).

Keywords: Lateral meningocele, neurofibromatosis type 1, low back pain

INTRODUCTION

Meningocele is the herniation of the arachnoid mater and neural elements from the enlarged neural foramen to the thecal sac.[1] Lateral meningocele is rare and usually associated with neurofibromatosis type 1 (NF1) and Marfan syndrome.[2] Although lateral meningocele is mostly asymptomatic, it may cause paraparesis in case of spinal cord involvement.[3] Since lateral meningocele is mostly asymptomatic, it is diagnosed with magnetic resonance imaging (MRI) incidentally.[4] The MRI is superior to other imaging methods for evaluating the subarachnoid distance and pressure of the meningocele on the spinal cord.[5]

To the best of our knowledge, there are a few case reports and studies about lateral meningocele in the literature. In this article, we presented a patient with chronic low back pain with lateral meningocele, which may be interesting for clinicians.

CASE

A 55-year-old female patient admitted to physical medicine and rehabilitation (PMR) outpatient clinic with a complaint of low back pain for two years. She had mechanical low back pain spreading to both legs. She stated that she received nonsteroidal anti-inflammatory drugs, physical agents, and therapeutic exercises before, and she did not benefit from these treatments. She had a history of asthma and NF1 with multiple cutaneous neurofibromas. She had no history of trauma or fall.

On physical examination there were multiple cutaneous neurofibromas located on her face, arms, legs, abdomen, and back. She was ambulated independently. The strength of lower extremity muscles was normal (5/5) bilaterally. There was a decreased sensation in the L4-L5 dermatomes of the lower right extremity. Babinski sign was negative bilaterally with normoactive deep tendon reflexes. Furthermore, neurological examination of the upper limps was normal.

Laboratory tests including comple blood count (CBC) liver function tests, renal function tests, C-Reactive Protein (CRP), and erythrocyte sedimentation rate (ESR) were in normal range. A lumbar spine MRI was performed to determine the etiology of the chronic low back pain. The MRI showed that there was ectasia and right paravertebral bulging of the dural sac at the level of L5. Scalloping of the corpus was also present in the L5 vertebrae. In addition, subcutaneous neurofibromas in varying sizes were detected. The diagnosis was lateral meningocele associated with neurofibromatosis (Figure 1 A, B).

The patient referred to the neurosurgery department for lateral meningocele. Surgical intervention was not recommended by the neurosurgeon, because the patient did not have any motor deficit. Moreover, regular follow-up was recommended. Individual based-exercises and analgesic medical treatment were given to the patient. She was informed about emergencies

and was advised to follow up regularly in the PMR and neurosurgery departments. Written informed consent was obtained from the patient.

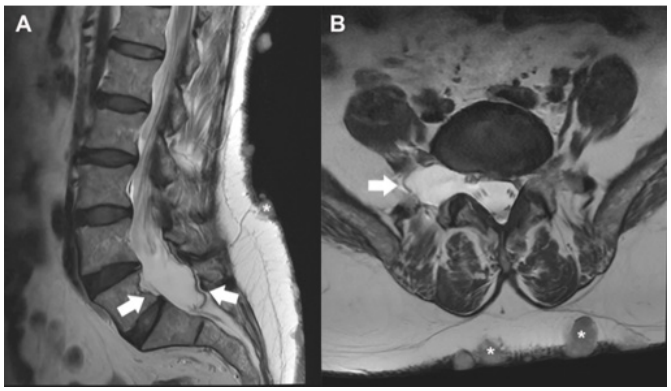

Figure 1 A, B. Sagittal (A) and axial (B) T2 weighted MRI images show ectasia and right paravertebral bulging of the dural sac at the level of L5 (arrows in A and B). Scalloping of the corpus was also present in the L5 vertebrae. The diagnosis was lateral meningocele associated with neurofibromatosis. Note the presence of subcutaneous neurofibromas in varying sizes (asterisks)

DISCUSSION

NF1 is a neurocutaneous disease, which is inherited in an autosomal dominant manner with an incidence of 1 in 3500 births.[6] NF1 is mostly characterized with brown skin spots called café-au-lait (milk coffee), Lisch nodules in the iris, acoustic neurinomas, neurofibromas and skeletal abnormalities such as kyphoscoliosis.[7]

Spinal meningoceles are the herniation of the dura and arachnoid mater into the thecal sac through a canal or foramen of the spine and are mostly seen in the thoracolumbar region.[1] So et al.[2] conducted MRI and computed tomography (CT) in patients with neurofibromatosis. They reported that meningocele in the cervical, thoracic, and lumbar regions were rare and generally associated with NF1 and Marfan syndromes.[2] Previous studies showed that clinical presentation of lateral meningocele may be in a wide range between asymptomatic and paraparesis.[3] Our patient had a complaint of low back pain with no motor deficit. However, hypoestesia was found at the right L4-5 dermatomes.

In the literature, spinal MRI findings of the NF1 patients have been reported as dural ectasia and lateral meningocele, which are consistent with the MRI findings of our patient.[8] In a study conducted by Leeds et al.[9] 28 patients with NF1 were evaluated in terms of spinal pathologies. They reported that only three of them had dural ectasia. The MRI findings of the lateral meningocele include lesion, which is hypointense in T1-weighted images and hyperintense in T2-weighted images. Li et al.[10] reported that the signal intensity in T1-weighted images might be similar to or slightly less than the cord, and the signal intensity in T2-weighted images will be more than the cord.

Complications of thoracic meningocele reported as hemothorax, hydrothorax and spontaneous rupture and surgical treatment was not recommended unless it's symptomatic. Consist with the literature, surgery was not recommended to our patient by the neurosurgeon and regular follow-up was adviced. Conservative treatment including analgesic medication and individual based exercise program were recommended. Also, she was informed about the complications of the lateral meningocele, and regular follow-up recommended.

CONCLUSION

In conclusion, lumbar lateral meningocele is a benign pathology that can be seen in a wide range from asymptomatic to paraparesis, which does not require surgical treatment, unless it is symptomatic, which is frequently associated with NF1. Clinicians should consider lateral meningosele in patients with NF1 having low back pain. An multidisiplinary follow up may be beneficial including neurosurgery, neurology, and PMR in these patients follow up and arrangement of the treatment. In addition, patients with lateral meningosele should be closely followed up in terms of developing neurological deficits or their progressions for early treatment and preventing neurological deficits.

ETHICAL DECLARATIONS

Informed Consent

All patients signed the free and informed consent form.

Referee Evaluation Process

Externally peer-reviewed.

Conflict of Interest Statement

The authors have no conflicts of interest to declare.

Financial Disclosure

The authors declared that this study has received no financial support.

Author Contributions

All of the authors declare that they have all participated in the design, execution, and analysis of the paper, and that they have approved the final version.

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