Bilateral Multiple Level Lateral Meningocele

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ABSTRACT

Lateral meningocele is a very rare disorder characterized by extensions of the dura and arachnoid through an enlarged neural foramen. We report a case of a 23-year-old female with deformity of spine who presented with low back pain and no neurological deficits. A whole spine magnetic resonance imaging showed multiple well-defined cystic masses involving dorsal, lumbar, and sacral spinal levels bilaterally, with dural ectasia and neural foraminal widening suggestive of bilateral multiple level lateral meningocele. The patient is being managed conservatively and is on regular follow-up.

Key words: Lateral meningocele, multiple meningocele, spinal dysraphism

INTRODUCTION

Lateral meningocele is a rare presentation of spinal dysraphism characterized by extensions of the dura and arachnoid through an enlarged neural foramen. In the present report, we discuss a case of a 23-year-old female who had bilateral multiple level lateral meningocele with no neurological deficits and without any associated craniofacial anomalies, neurofibromatosis, or Marfan's syndrome.

CASE REPORT

A 23-year-old female patient presented with 6-month history of low back pain and associated spine deformity. On neurological examination higher mental functions, cranial nerves, motor, and sensory systems were normal. There were no focal neurological deficits. Bowel and bladder functions were normal. Her spinal column appeared kyphotic. Patient stature is normal without any skin lesions. No features of either Marfan's syndrome or Neurofibromatosis Type I were noted. Routine laboratory investigations including hemoglobin (10.6 g%) and routine urine microscopy were within normal limits. A whole spine magnetic resonance imaging (MRI) showed well-defined multiple cystic masses involving dorsal, lumbar, and sacral spinal levels. These multiple cystic lesions are hypointense on T1-weighted images and hyperintense on T2-weighted images, which is similar to cerebrospinal fluid (CSF) signals. In addition, there was dural ectasia and neural foraminal widening [Figures 1 and 2]. There was low-lying position of the cord but roots were unremarkable. The findings were suggestive of multiple level lateral meningocele. The patient was managed with analgesics and regular physiotherapy and is under regular follow-up and observation.

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DISCUSSION

Lateral or anterior spinal meningocoeles are relatively rare congenital anomalies where protrusion of dura mater and arachnoid extending laterally through an enlarged intervertebral foramen into the paraspinal, intrathoracic, or retroperitoneal region.\[1\] Lateral meningocoeles may be unilateral or bilateral (as in the present case) or may be solitary or multiple. Typically, lateral and anterior meningocoeles are occult lesions that are not visible externally. An anterior defect can form in the vertebral column as a result of faulty embryogenesis. Such faulty development can also result in coexisting abnormalities in the skin, subcutaneous tissues, spine, and internal organs. Another important factor that can influence the development of anterior and lateral spinal meningocoeles is the balance between both the hydrostatic pressure and the pulsations of the CSF, and the resistance of the arachnoid and dura mater to deformation by such pressure, especially at the intervertebral foramina. If there is a developmental bony defect, the dura and arachnoid may bulge out through it.

Lateral meningocoele syndrome or Lehman syndrome, is characterized by multiple lateral meningocoeles in the absence of Neurofibromatosis or Marfan’s syndrome,\[4\] commonly present during the fourth and the fifth decades of life (in contrast to this, our patient was 23-years old)\[1\] and overall, female patients are more often affected than male patients. Lateral meningocoeles commonly occur in thoracic and lumbar regions followed by the cervical area,\[5-8\] and rarely in the sacral region.\[1,3,9\] Because of this unique finding, Gripp\[4\] suggested the term “lateral meningocoele syndrome”. More and more patients with lateral meningocoele syndrome are being reported.\[1\] It is suggested that lateral meningocoele syndrome is an autosomal dominant disorder affecting primarily the connective tissue\[4\] with many associated skeletal findings kypho-scoliotic deformities, joint hypermobility, pectus deformities, craniofacial abnormalities, and vertebral defects such as hemivertebrae, scoliosis, absence of neural arches on the affected side, widening of the spinal canal, and intervertebral foramina. In our patient kypho-scoliosis is noted. The clinical manifestations of meningocoele closely relate with its size and its relationship with surrounding structures. The patient may be asymptomatic or can present with back pain or paraparesis.\[12\] In contrast, in the setting of a small meningocoele, no symptoms can be recorded, and the lesion may be incidentally diagnosed on a routine chest radiograph. It is widely accepted that excision of the lesion is indicated in the presence of progressive neurologic deficit, respiratory distress, or rapid progress in the size of the meningocoele.\[12,13\]

On conventional radiographs, meningocoele appear as sharply defined round, smooth, or lobulated paraspinal masses. On computed tomography (CT) scan, these lesions appear as well-defined, homogeneous, low-attenuation paravertebral masses.\[14\] MRI findings are often diagnostic and better delineate the details of multiple lesions including paravertebral expansion and dural eustasias with scalloping of the pedicles, laminae, vertebral bodies, and an enlarged spinal canal.\[1,10\] Surgical excision is recommended for symptomatic lesions, particularly when there are neurological deficits or bowel and bladder involvement.\[1,8\] However, as our patient was not symptomatic for any of the lesions, she is being monitored during regular follow-ups.

CONCLUSION

Bilateral multiple level meningocele without association with Neurofibromatosis or Marfan’s syndrome is a rare entity. MRI best depicts the lesions. Surgeons and radiologists should be aware of this rare clinical entity. As the patient is asymptomatic, she is currently being managed conservatively.

REFERENCES

1. Seddighi A, Seddighi AS. Lateral sacral meningocele presenting as a...
gluteal mass: A case report. J Med Case Rep 2010;4:1-6.

2. Haddad R. Multiple asymptomatic lateral thoracic meningocele. Eur J Cardiothorac Surg 2008;33:113.

3. Erkulvrawat S, El Gammal T, Hawkins J, Green JB, Srinivasan G. Intrathoracic meningoceles and neurofibromatosis. Arch Neurol 1979;36:557-9.

4. Gripp KW, Scott CI Jr, Hughes HE, Wallerstein R, Nicholson L, States L, et al. Lateral meningocele syndrome: Three new patients and review of the literature. Am J Med Genet 1997;70:229-39.

5. Sharma V, Mohanty S, Singh DR. Uncommon craniospinal dysraphism. Ann Acad Med Singapore 1996;25:602-8.

6. Sharma V, Newton G. Lateral cervical meningocele. J Korean Med Sci 1992;7:179-83.

7. Shore RM, Chun RW, Strother CM. Lateral cervical meningocele. Clin Pediatr (Phil) 1982;21:430-3.

8. Gocer AI, Tuna M, Gezercan Y, Boyar B, Bagdatoglu H. Multiple anterolateral cervical meningoceles associated with neurofibromatosis. Neurosurg Rev 1999;22:124-6.

9. Kaur N, Mishra SC, Vuayaragvan P, Minocha VR. Lateral sacral meningomyelocele as a gluteal swelling: An unusual presentation. J Indian Med Assoc 2005;103:556.

10. Reis C, Carneiro E, Fonseca J, Pereira P, Vaz R, Pinto R, et al. Epithelioid hemangioendothelioma and multiple thoraco-lumbar lateral meningoceles: Two rare pathological entities in a patient with NF-1. Neuroradiology 2005;47:165-9.

11. Oner AY, Uzun M, Tokgoz N, Tali ET. Isolated true anterior thoracic meningocele. AJNR Am J Neuroradiol 2004;25:1828-30.

12. Mizuno J, Nakagawa H, Yamada T, Watabe T. Intrathoracic giant meningocele developing hydrothorax: A case report. J Spinal Disord Tech 2002;15:529-32.

13. Ebara S, Yuzawa Y, Kinoshita T, Takahashi J, Nakamura I, Hirabayashi H, et al. A neurofibromatosis type 1 patient with severe kyphoscoliosis and intrathoracic meningocele. J Clin Neurosci 2003;10:268-72.

14. Webb WR. Diseases of the mediastinum. In: Putman CE, Ravin CE, editors. Textbook of diagnostic imaging. 2nd ed. Philadelphia, Pa: Saunders; 1994. p. 428-44.

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