Clinical Reports

Craniospinal intradural arachnoid cyst

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Summary: A patient with an uncommonly situated congenital intradural arachnoid cyst is reported. The cyst extended from the cervical spinal canal into the posterior cranial fossa and was posterolateral to the spinal cord. The patient's initial complaint was urinary hesitancy. The location of the cyst is unique and the presenting complaint rare.

Introduction

Intradural arachnoid cysts are uncommon causes of spinal cord compression. They are usually located over the dorsal aspect of the thoracic spinal cord, generally in the midline, but may be laterally situated adhering to the dentate ligament. Cervical and lumbar intraspinal arachnoid cysts have also been described, but one extending on either side of the foramen magnum has not been reported. The present communication describes an unusual case of a posterolaterally placed congenital craniospinal intradural arachnoid cyst.

Case report

A 22 year old male presented with progressively increasing difficulty in passing urine for the past 3 years, taking about 20 minutes to empty his bladder. For the past 2 years he had developed difficulty in walking with stiffness of the lower limbs and jerky movements at the ankles while climbing stairs. He could walk only with support for the past 3 months. He also complained of weakness and stiffness of the upper limbs and could not grasp or hold objects in his hands. There was no history of any pain, numbness or paresthesiae.

Examination revealed marked hypertonia and hyperreflexia in all the four limbs with extensor plantar responses. There was no sensory deficit except for loss of joint position sense in the lower limbs. No congenital malformations were present. Plain X-rays of the cervical spine were normal. Metrizamide myelography demonstrated an appearance of widening of the cervical spinal cord

suggestive of an intramedullary lesion. Metrizamide computed tomographic (CT) scan, done 3 hours later, showed an intradural low attenuation area posterior to the cervical spinal cord extending into the posterior cranial fossa. The spinal cord was displaced anteriorly and to the right. A ring of metrizamide was present around the lesion (Figure 1).

A C1 through 5 laminectomy was performed. A bluish thin-walled arachnoid cyst bulged out upon opening the dura. It was situated posterolaterally and extended from C4 level upwards through the foramen magnum into the posterior cranial fossa. The displaced cord appeared to be thinned out. Clear fluid was obtained from the cyst and a partial excision of the cyst wall was carried out. Histopathological examination of the cyst wall confirmed it to be an arachnoid cyst.

Figure 1 Metrizamide CT scan showing a large intradural low attenuation lesion displacing the spinal cord anteriorly and to the right. (Posterior and lateral margins marked with arrowheads.)

The patient rapidly improved following the surgery and could walk on his own at the time of discharge. Urinary hesitancy had also markedly improved when he was seen one month later.

Discussion

The incidence of symptomatic spinal intradural arachnoid cysts is not high. Elsberg *et al.* found only two cases of intradural spinal arachnoid cysts among 250 cases of spinal cord tumours.¹ Lombardi and Morello could find only one case among 290 spinal tumours.² In a more recent review, Galzio *et al.* found 58 published cases.³

Most spinal intradural arachnoid cysts are located posterior to the thoracic spinal cord. However, they have also been reported to occur dorsal to the cervical⁴⁻⁷ and the lumbar^{8,9} spinal cord. Ventrally placed arachnoid cysts are rarer.¹⁰

Pain is a prominent symptom of spinal arachnoid cysts and may be diffuse, local or radicular, depending on its level and location. Dysaesthesiae and hypalgesia are also common. Impairment of motor function, ranging from mild gait difficulty to spastic quadriplegia, has been observed in approximately half of the reported cases. Urinary

hesitancy as an initial symptom is rare (two out of 12 cases reported by Teng and Papatheodorou).⁶ Our patient had no pain at any time, his primary problems being urinary hesitancy and a progressive spastic quadriplegia.

Several mechanisms have been postulated to explain the formation of congenital spinal intradural arachnoid cysts.¹¹⁻¹³ It seems plausible to consider them as embryonic malformations due to an error in the differentiation of early endomeningeal tissue.¹⁴⁻¹⁷ Meningitis, trauma and haemorrhage are considered to be causative or contributing factors in the genesis of acquired spinal arachnoid cysts.

Available therapeutic alternatives range from total extirpation of the cyst to a percutaneous shunting procedure.¹⁸⁻²⁰ Total excision may not always be feasible owing to the presence of multiple adhesions between the spinal cord and the cyst. Incision and deroofting of the cyst is, therefore, the more commonly performed procedure.¹⁰ Our patient was managed by partial excision of the cyst wall resulting in adequate decompression of the spinal cord and rapid clinical improvement. The location of the cyst and clinical presentation were uncommon features of this case.

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