

Spinal cystic meningioma presenting as a ring enhancing lesion on MRI



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Spinal meningiomas are much more common in women. The peak age incidence of presentation occurs in the sixth decade. Cystic meningiomas are rare and seem to have a predilection for children. We report a case of cystic spinal meningioma in a young man presenting as a ring enhancing lesion on Magnetic Resonance Imaging (MRI). This case is unusual because of the atypical features of the tumour, the relatively young age and sex of the patient.

KEY WORDS: Cystic meningioma, Cystic tumour, Spinal meningioma, MRI.

Case Report

A 31 year old man presented complaining of worsening weakness while walking, started 3 months ago. He also complained of mild back pain, exacerbated by flexion of the spine and numbness in both the legs, especially during the night. In the last 15 days he began to have bladder and bowel sphincter dysfunction. Neurological examination showed spastic paraparesis with hyperreflexia and a distinct sensory level to pinprick, at the T12 somatome. MRI revealed a well circumscribed intradural, extramedullary mass at T12 level measuring 1.5x1.0 cm. This mass presented hyperintense on T2 weighted images and hypointense to the cord on T1 weighted images. After administration of gadolinium DTPA (Gd-DTPA) intravenously, it exhibited peripheral enhancement with a cystic lesion (Fig. 1 a, b). The patient underwent a complete laminectomy of the T12 vertebra. Using the operative microscope the mass was gross totally removed. Pathological examination demonstrated a cystic mass measured 1.5 cm in the greatest diameter with irregular external surface. Microscopically, the cystic mass was not lined by epithelium. The wall was composed by elongated cells of medium size, with scanty eosinophilic cytoplasm,

with nuclear hyperchromasia and stratification. Mitoses were absent; while in some areas the wall of the vessels was hyalinized. The histopathological diagnosis was meningioma (Fig. 1c, 1d). Postoperative recovery was uneventful and the patient had excellent improvement. He regained neurological normality in about two months.

Discussion

Spinal meningiomas are the most common intradural tumours with 60% - 70% occurring at the thoracic levels and 10% - 20% at the cervical levels³. They constitute 5.75% - 15% of all meningiomas and 25.9% - 32% of all spinal tumours, second only to neurofibromas^{3,4}. The female to male ratio is from 8:1 to 9:1⁴. In children 20% of meningiomas are spinal⁴. Cystic meningiomas are uncommon tumours with incidence which vary from 1.6% to 7%. They have a predilection for children and male patients. Some authors have suggested that the term «cystic meningioma» should be limited to those lesions with a cyst inside the tumour². Rengachary described this kind of cysts as intratumoral while these with satellite cyst as peritumoral.

Intratumoral cysts are rare and even more they are rare in spinal meningiomas. Cushing and Eisenhardt in the series of 313 meningiomas found 29 spinal of which one was cystic². Our case, a spinal cystic meningioma in the lower thoracic region in a young man, is reasonably very unusual. The mechanisms of pathogenesis of cysts

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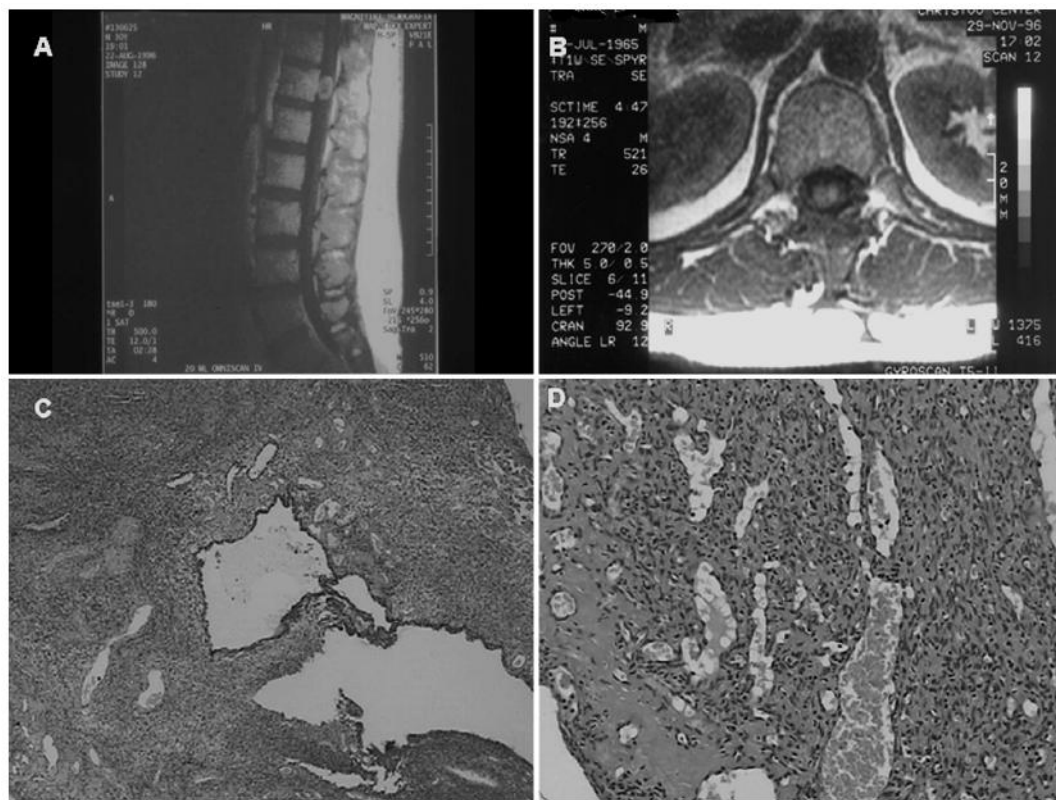


Fig. 1: a) Sagittal and b) Axial view of MRI which revealed a well circumscribed intradural, extramedullary mass at T12 level. After administration of gadolinium DTPA intravenously, it exhibited peripheral enhancement with a cystic lesion; c) Pathological examination displays cystic spaces which are not lined by epithelium (X 25); d) A histological appearance of a meningioma. Mitoses are absent while in some areas the stroma is hyalinized (X 100).

formation include: secretor or degenerative changes, ischemic necrosis and haemorrhage². The presentation of spinal meningiomas on MRI varies. They are usually isointense to the cord on both T1 and T2 weighted images, enhancing strongly after the administration of Gd-DTPA^{1,5}. In our case the tumour was hypointense on T1 and hyperintense on T2 weighted images, while the MRI after Gd-DTPA administration showed enhancement at the periphery. Our case is one of the few rare cases of cystic spinal meningiomas with ring enhancement on MRI. This atypical feature raises problems in neuroradiological diagnosis because schwannomas, epidermoid tumours and ganglion cysts may have similar presentation. Intrinsic tumors of the cord as astrocytomas and ependymomas, may also present same features, but the intramedullary location of them helps in differential diagnosis^{1,5}. In our case, although the first clinical diagnosis was different, the presentation on MRI, even atypical, put strong suspicion of a meningioma.

Riassunto

I meningiomi spinali si manifestano più frequentemente nel sesso femminile. Il picco d'incidenza in rapporto all'età, si colloca nella sesta decade di vita.

I meningiomi cistici d'altro canto sono dei tumori alquanto rari e sembrano prediligere l'età infantile. In questo lavoro gli Autori descrivono un raro caso di meningioma spinale cistico in un giovane adulto di sesso maschile, evidenziato alla RNM come una neoformazione ad anello. L'aspetto interessante è dato, oltre che dall'età e dal sesso del paziente, anche dalla morfologia atipica ed alquanto inusuale del tumore.

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