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Case Report

Concomitant Synspondylism and Thoracic Spinal Meningioma, An Extremely Unusual Occurrence

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Abstract

Lower back pain is an extremely common and rather vague entity with numerous differentials in its list ranging from congenital to non-neoplastic and malignant lesions. Here, we report a rather unusual cause of back pain resulting from congenital and neoplastic etiology. Synspondylism, which is fusion of the thoracic vertebrae and an intradural extramedullary meningioma of suspicious invasive pattern of growth in the same patient is discussed along with a brief review of literature.

Keywords: Vertebral Fusion; Meningioma; Spine

Introduction

The prevalence of low back pain in adults range from 15% to 52.9%, with majority of women (60.9%) with low back pain experienced moderate disability [1]. The most common causes of spinal pain are injuries, degenerative changes, inflammatory processes or neoplasms in the spine [2]. Various vertebral anomalies of Anatomic interest have been reported viz.; occipitalisation, sacralisation, lumbarisation, absence of posterior elements of vertebral arch and vertebral synostosis. Fusion of vertebra at single or multiple levels is referred to as block vertebrae or spinal fusion or vertebral synostosis [3]. Spinal meningiomas are common extra-axial solid lesions with distinguishing features, and most of them have a thoracic localization [4].

Case Report

A 59-year-old housewife, presented to the neurosurgeon with dull-aching backache localized to the cervical spinal region and lower back. She was on NSAIDs for a year (on-and-off, poor compliance) and Vitamin D supplements. The patient did not complain of any other symptoms. No clinical evidence of sciatica, neuropathy or significant disc-compression on examination was found. An MRI was scheduled subsequently.

The multiparametric Magnetic Resonance Imaging (MRI) (Figure 1 and 2) of the head and whole spinal cord was conducted using a high-field (1.5T) resonator which showed a well-defined intradural extra-medullary isointense lesion at the level of thoracic vertebrae number 11, measuring 1.5 x 1.1 x 0.9 cm. adherent to the posterior dura compressing and displacing the spinal cord right anterolaterally. L2 to S1 disc revealed posterior bulge (Figure 1 and 2).

Figure 1 and 2: The MRI tomography of the patient with meningioma at the Th11 level before surgery in axial and sagittal projections respectively.

Screening of the cervico-dorsal spine revealed congenital partial fusion of the D1/D2 vertebral bodies with complete fusion of the posterior elements. Posterior protrusion of C4/C5 disc compressing anterior sub-arachnoid space, posterior bulges of C3/C4, C4 and C5/C6 disc indenting anterior subarachnoid space was also noted.

Patient was scheduled for removal of the thoracic spinal lesion. Histopathological examination of the lesion showed multiple tumor fragments composed of tumor cells arranged in concentric whorls and syncytial sheets (Figure 3). Tumor cells had round to ovoid vesicular nuclei with eosinophilic cytoplasm without distinct cell membranes. Numerous calcified concentric basophilic 'psammoma-bodies' (Figure 4) were noted. Although Ki-67 proliferation index was less than 1% (Figure 5), a focus showed an invasive pattern of growth with erosion of the vertebral bone (Figure 6). A final diagnosis of Grade I Psammomatous Meningioma was made. On one-month follow-up, patient had improvement in symptoms and is on low dose NSAID.

Figure 3: Histopathological micrograph showing the lesion at 100x magnification (H&E stain).

Figure 4: Psammoma bodies, classically seen in this lesion (400x, H & E stain).

Figure 5: Ki-67 proliferation index (400x, IHC).

Figure 6: Invasive focus of the lesion, (100x, H & E stain).

Discussion

Several pathological events, both traumatic and non-traumatic viz inflammatory and neoplastic, may result in sudden onset back pain. While most spinal meningiomas present with sudden back pain or with rapidly progressive neurological deficit, subdural bleeding and cord-compression have also been documented. In individuals with normal spinal cord position and no thickening of filum terminalis, as happened in the present case, clinical symptoms usually occur in a late phase, possibly due to adaptive compressibility of the cerebrospinal fluid and the adjacent vascular structures. When the compliance of these structures exceed, the tumor compression is directly transmitted to the spinal cord resulting in neurological deficit [5].

Meningiomas are common intraspinal lesions, accounting for 25 - 46% of primary instraspinal neoplasms. These are typically intradural extramedullary in location being most likely derived from the meningothelial cells of the arachnoid layer. Extradural spinal meningiomas on the other hand are infrequent (2.5 to 3.5% of all spinal meningiomas) [6,7].

Differential diagnosis such as lymphomas, metastases, neurogenic tumor, chondrosarcoma, pyogenic abscess, hemangioma, epidural lipomatosis have been suggested. Given the high rate of recurrent, some authors have suggested consideration of radiotherapy as an adjunctive treatment after subtotal excision. Radiotherapy can also help control unexcised or recurrent meningioma [8].

Rigorous follow-up and imaging studies should also be conducted in asymptomatic patients and especially in present case, which showed a suspicious focus of an invasive pattern of growth. Although Grade 1 in nature, there is a high possibility that spinal meningiomas may behave aggressively as compared to extra-axial cranial meningiomas.

Conclusion

Making a correct preoperative diagnosis remains challenging because of their rarity and affinity to other types of tumors with calcification. This type of clinical entity should be considered in the differential diagnosis of intraspinal neoplasms. Complete removal provides optimal outcome, rending the lesion curable.

Conflict of Interest

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Bibliography

1. Ahdhi GS., *et al*. "Prevalence of low back pain and its relation to quality of life and disability among women in rural area of Puducherry, India". *Indian Journal of Pain* 30 (2016): 111-115.

2. Pereira Fihlo Ade A., *et al*. "Symptomatic thoracic spinal cord compression caused by postsurgical pseudomeningocele". *Arquivos de Neuro-Psiquiatria* 65 (2007): 82-279.

3. Kulkarni V and Ramesh BR. "A spectrum of vertebral synostosis". *International Journal of Basic and Applied Medical Sciences* 2.2 (2012): 71-77.

4. Gottfried ON., *et al*. "Spinal meningiomas: surgical management and outcome". *Neurosurgery Focus* 2 (2003): 14.

5. Mariniello G., *et al*. "Sudden post traumatic sciatica caused by a thoracic spinal meningioma". *Neuroradiology Journal* 29.5 (2016): 390-392.

6. Dagain A., *et al*. "Extradural spinal meningioma: case report". *Neurochirurgie* 2009 55.6 (2009): 565-568.

7. Milz H and Hamer J. "Extradural spinal meningiomas: Report of two cases". *Neurochirurgia* 26.4 (1983): 126-129.

8. Mirimanoff RO., *et al*. "Meningioma: analysis of recurrence and progression following neurosurgical resection". *Journal of Neurosurgery* 62 (1985): 18-24.

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