

Cervical osteochondroma presenting with acute quadriplegia

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ABSTRACT

Osteochondromas of the vertebral column are rare tumors and constitute about 3-4% of all primary vertebral column tumors. We report a case of osteochondroma arising from C3 lamina presenting with acute quadriplegia following a trivial fall. Computed Tomography (CT) and Magnetic Resonance imaging (MRI) showed bony lesion arising from C3 laminar arch compressing the cord with underlying spinal cord contusion. Emergency C3 laminectomy and complete en bloc excision of the lesion was performed, following which patient showed gradual recovery in neurological status. This acute presentation in this rare, slow growing, tumor has never been reported in literature till date.

Key words: Acute quadriplegia, cervical, osteochondroma

Introduction

Osteochondromas of the vertebral column constitute about 3-4% of all primary vertebral column tumors. We report a case of osteochondroma arising from C3 lamina presenting with acute quadriplegia following a trivial fall. Computed Tomography (CT) and Magnetic Resonance imaging (MRI) showed bony lesion arising from C3 laminar arch compressing the cord with underlying spinal cord contusion. Emergency C3 laminectomy and complete excision of the lesion was performed, following which patient showed gradual recovery in neurological status. This acute presentation in this rare, slow growing, tumor has never been reported in literature till date.

Case Report

A 14-year-old boy, a diagnosed case of multiple hereditary exostoses (MHE), presented with sudden onset weakness following a trivial fall at home. On examination, his power in

both upper and lower limbs was 0/5, exaggerated reflexes and sensory blunting from C4 dermatome downward. There were diffuse, non tender, hard swellings at the bony prominences in right thigh, right and left shins, ankles and shoulder suggestive of multiple bony swellings. He was investigated; MRI and CT of cervical spine which showed bony lesion compressing the cord with evidence of hyperintense signal in the cord at the site of compression. [Figure 1a] A CT scan revealed a pedunculated bony tumor from right laminar inner aspect with encroachment of the spinal canal. [Figure 1b] Patient was operated through posterior approach and C3 laminectomy was done, tumor was removed en block. He showed gradual improvement in the post operative period. Post operative MRI showed well decompressed cord with contusion. [Figure 1c] Histology revealed the characteristic features of osteochondroma [Figure 1d].

Vertebral osteochondromas are rare tumors and comprise about 3-4% of primary vertebral tumors, may be single or multiple.^[1,2] Solitary osteochondromas are more common. Multiple lesions are seen in hereditary multiple exostoses (HME) involving many areas in the skeletal system and is a heterogeneous autosomal dominant condition associated with mutations of EXT1 and EXT2 genes with the male preponderance.^[3-5] Spinal involvement is more common in HME. They arise from the posterior elements such as lamina and spinous process probably due to presence of secondary ossification centers.^[3,4,6] They are more common in cervical spine followed by thoracic and lumbar spine in descending order. Spinal cord compression is due to gradual ingrowth of tumor into spinal canal and causes progressive myelopathy.^[2,5-7] In our case, patient presented with acute quadriplegia following a

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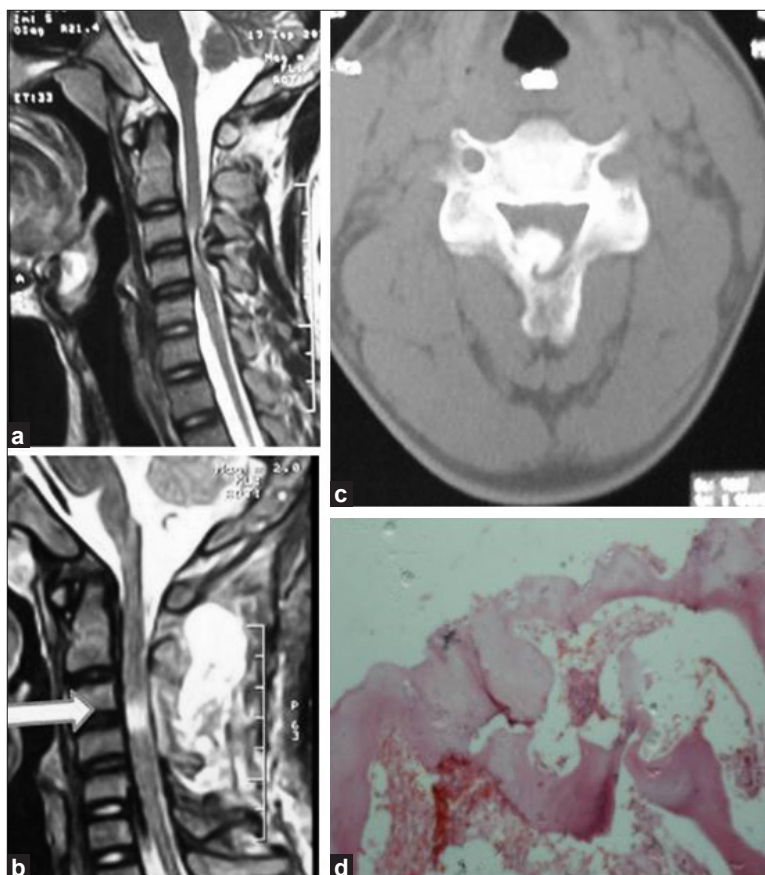


Figure 1: (a) T2W MRI cervical spine showing the C3 osteochondroma compressing the cord, (b) CT axial section showing the pedunculated osteochondroma, (c) Post op MRI T2WI showing the cord contusion, (d) Histopathological examination showing cartilaginous cap with underlying irregular bony trabeculae

trivial trauma, which is not described in osteochondromas. CT scan is the investigation of choice and shows extent of bony involvement and canal compromise. Lesions are smooth bordered well demarcated, sessile with calcifications, eccentric growth into spinal canal and with sclerotic reactions in the adjacent bone. Although CT gives sufficient clue regarding pathology, MRI gives additional information of the cord as in our case, which showed cord contusion. Osteochondromas of spine on MRI appear typically with peripheral hypo intensity on T1 and T2 and central part with marrow intensity and is described as ‘bull’s eye’.^[4] Complete excision along with the cartilaginous cap is curative.^[5] Recurrence following complete excision does not occur. Our patient underwent complete en bloc removal of C3 lamina and fixation using lateral mass screws and rods. A review of literature showed 97 cases with spinal osteochondromas, of which, 24 were associated with HME and all these patients had gradually progressive myelopathy, unlike our case. Probably, this case might prompt clinicians to get a screening cervical spine MRI in all HME patients.

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