Case Report

Solitary osteochondroma of dorsal spine causing canal stenosis with myelopathy – A case report with review of literature

Ashish Acharya, Sarvpreet Singh Grewal, Paul Sudhakar John, Ravindra Kumar Bind, Ankita Khurana

Department of Neurosurgery, Christian Medical College, Ludhiana, Punjab, India

E-mail: *Ashish Acharya - ashish.acharya@live.in; Sarvpreet Singh Grewal - sarvpreetgrewal@yahoo.co.in; Paul Sudhakar John - paulsjohn@gmail.com; Ravindra Kumar Bind - drrkbind.medic@gmail.com; Ankita Khurana - khuranaankita07@gmail.com

*Corresponding author: Ashish Acharya, Department of Neurosurgery, Christian Medical College, Brown Road, Ludhiana - 141008, Punjab, India. ashish.acharya@live.in

ABSTRACT

Background: Osteochondroma is a common benign tumor arising from the long bones. It rarely arises in the spine, where it can cause mild symptoms such as backache all the way up to compressive myelopathy. Malignant transformation has also been reported. Here, the authors present a 52-year-old male with myelopathy attributed to a rare thoracic solitary osteochondroma.

Case Description: A 52-year-old male presented back pain radiating into both lower extremities with paresthesia to the toes of 1 year's duration. On examination, he exhibited hyperactive bilateral lower extremity reflexes with bilateral Babinski signs, and focal sensory changes to pin, and touch appreciation in the left L5S1 distributions. Computed tomography and magnetic resonance imaging showed an abnormal bony mass arising from the posterior arch of T10 with protrusion into the spinal canal resulting in marked canal/cord compression. Surgery included a D10 laminectomy with en bloc resection of the lesion. Postoperatively, the patient's symptoms resolved. Histologically, the lesion was an osteochondroma.

Conclusion: When patients present with myelopathy, one should include osteochondromas among the differential diagnostic possibilities.

Keywords: Osteochondroma, Spine, Spinal cord compression

INTRODUCTION

Solitary osteochondromas are the most common benign skeletal neoplasms arising from the long bones. They rarely occur in the spine and may contribute to canal stenosis and/or compressive myelopathy. The most devastating complication of these lesions is malignant transformation into chondrosarcomas (e.g., 1% for solitary and 3–5% for multiple lesions). Here, we report resection of a rare T10 osteochondroma responsible for back pain, thoracic canal stenosis, and myelopathy.

CASE REPORT

A 52-year-old male presented with 1-year history of bilateral lower extremity radiculopathy with paraesthesia extending to the toes. The neurological examination revealed bilateral lower
extremity hyperreflexia and Babinski responses plus a 10% loss of light touch in the left S1 distribution.

**Thoracic Computed tomography (CT) and magnetic resonance (MR) Studies**

CT and MR examinations showed an abnormal bony mass arising from the posterior arch of T10 that protruded into the spinal canal, resulting in marked canal stenosis and cord compression. The cortex and medullary portions of the lesion were continuous with the T10 vertebral body (i.e., exostosis) [Figure 1]. The MR T1- and T2-weighted images revealed a hypointense lesion occupying the left posterolateral spinal canal at the T10 level with accompanying posterior cord compression. Further, there was a hyperintense signal on T2/STIR images within the cord itself consistent with edema [Figures 2 and 3].

**Surgery**

Surgery consisted of a bilateral T10 laminectomy for en bloc resection of the lesion, a predominantly bony mass originating from the left lamina of T10 that was (e.g., continuous with the inner surface of the T10 lamina on the left) [Figure 4]. Postoperatively, the patient immediately recovered normal neurological function.

**Histopathology**

The histopathologic revealed a bony lesion with a cartilaginous cap covered with perichondrium, endochondral ossification continuous with bony trabeculae, and benign chondrocytes consistent with the diagnosis of osteochondroma [Figures 5 and 6].

**DISCUSSION**

Osteochondromas/exostoses comprise 2.6% of all benign tumors of the spine. They are the most common primary bone tumors (i.e., one-third of all benign bone tumors), and...
maybe solitary (80% of cases), or multiple (HME) (10–20% of cases).[3] Solitary vertebral osteochondromas resulting in spinal cord compression are extremely rare, and only 52 such cases have been published in the literature. Here, we have presented an additional case involving a 52-year-old male who presented with thoracic myelopathy due to a T10 osteochondroma.

**Etiology of osteochondromas**

Osteochondromas are developmental lesions rather than true neoplasms. They result from the separation of a portion of the epiphyseal growth plate cartilage, which herniate through the periosseum around the growth plate.[1] Trauma and/or other factors may also cause perichondral deficiency and lead to the formation of an osteochondroma. It is a disease of the growing bone and, therefore, is often seen in young patients, most of whom are asymptomatic.[3]

**Location and diagnosis of spinal osteochondromas with CT/MR**

Spinal involvement is more common in HME, typically involving the laminae of the thoracic and lumbar vertebrae. Rarely, they exhibit extension into the spinal canal resulting in canal stenosis and myelopathy.

**CONCLUSION**

Here, we presented a patient with a rare left-sided T10 thoracic osteochondroma contributing to back pain, thoracic canal stenosis, and myelopathy. A decompressive laminectomy resulted in full resolution of the patient's myelopathic deficit.

**Declaration of patient consent**

The authors certify that they have obtained all appropriate patient consent.

**Financial support and sponsorship**

Nil.

**Conflicts of interest**

There are no conflicts of interest.

**REFERENCES**

1. Hassankhani EG. Solitary lower lumbar osteochondroma (spinous process of L3 involvement): A case report. Cases J 2009;2:9359.
2. Lotfinia I, Vahedi P, Tubbs RS, Ghavame M, Meshkini A. Neurological manifestations, imaging characteristics, and surgical outcome of intraspinal osteochondroma: Clinical article. J Neurol Surg Spine 2010;12:474-89.
3. Mehrian P, Karimi MA, Kahkuee S, Bakhshayeshkaram M, Ghasemikhah R. Solitary osteochondroma of the thoracic spine with compressive myelopathy; a rare presentation. Iran J Radiol 2013;10:77-80.
4. Murphey MD, Choi JJ, Kransdorf MJ, Flemming DJ, Gannon FH. Imaging of osteochondroma: Variants and complications with radiologic-pathologic correlation. Radiographics 2000;20:1407-34.
5. Shim JH, Park CK, Shin SH, Jeong HS, Hwang JH. Solitary osteochondroma of the twelfth rib with intraspinal extension and cord compression in a middle-aged patient. BMC Musculoskelet Disord 2012;13:57.

**How to cite this article:** Acharya A, Grewal SS, John PS, Bind RK, Khurana A. Solitary osteochondroma of dorsal spine causing canal stenosis with myelopathy – A case report with review of literature. Surg Neurol Int 2020;11:199.