Case Report / Olgu Sunumu

A unique case of cervical osteochondroma causing dysphagia

Disfajiye neden olan benzersiz bir servikal osteokondrom olgusu

Ajay Gulati, M.D.,[1] Amit Mittal, M.D.,[2] Rikki Singal, M.S, FICS,FAIS,[3] Samita Gupta, M.D.,[2] Varun Garg, (Post-Graduate Resident), M.D.,[2]

[1]*Department of Radiodiagnosis and Imaging, Postgraduate Institute of Medical Education & Research, Sector-12, Chandigarh, India.*
[2]*Department of Radiodiagnosis and Imaging, Maharishi Markandeshwer Institute of Medical Sciences and Research, Mullana, Haryana, India.*
[3]*Department of Surgery, Maharishi Markandeshwer Institute of Medical Sciences and Research, Mullana, Haryana, India.*

Osteochondroma of the spine is a rare condition. It may present in solitary form or with multiple exostoses or hereditary multiple exostoses. In this article, we report a 22-year-old male case who was diagnosed with cervical osteochondroma, originating from the third and fourth cervical vertebra.

Key Words: Dysphagia; magnetic resonance imaging; osteocartilaginous exostosis; spinal tumor.

Servikal osteokondrom, nadir görülen bir hastalıktır. Hastalık tek başına veya multipl ekzostoz veya herediter multipl ekzostoz olarak görülebilir. Bu yazıda üç ve dördüncü servikal vertebradan köken alan, servikal osteokondrom tanısı konulan 22 yaşında erkek bir olgu sunuldu.

Anahtar Sözcükler: Disfaji; manyetik rezonans görüntüleme; osteokartilajinöz ekzostoz; spinal tümör.

Osteochondroma is one of the most common benign tumors of bone. Also known as osteocartilaginous exostosis, this form of neoplasia accounts for roughly 8.5% of all osseous tumors, and approximately 36-40% of benign tumors overall.[1,2] Solitary osteochondroma of the cervical spine is a rare manifestation of this common bony tumor. As in our case, it can create symptoms depending on the adjacent compressed structures[3]

CASE REPORT

A 22-year-old male patient presented with mild pain during swallowing and localized pain in the right side of the neck for the last three months. There was no other complaint. On examination there was a hard, non-mobile and non-tender swelling in the right side of the neck.

High resolution sonography showed a calcified mass in the area of swelling. Radiographs of the cervical spine showed a mass with chondroid type of calcification overlying the C3 and C4 vertebrae and expanded pedicles of C3 and C4 (Figure 1a, b). Magnetic resonance imaging (MRI) revealed a large lobulated mass arising from the body, right side of the pedicle and transverse process of C3 and C4 vertebrae. The mass was mildly

Available online at
www.kbbihtisas.org
doi: 10.5606/kbbihtisas.2013.41736
QR (Quick Response) Code

Received / *Geliş tarihi:* August 23, 2011 Accepted / *Kabul tarihi:* October 10, 2011

Correspondence / İletişim adresi: Rikki Singal, (MS, FICS, FAIS). C/o Dr Kundan Lal Hospital, Ahmedgarh, Distt- Sangrur, Pin code-148021 Punjab, India.
Tel: +091 999 618 47 95 e-mail *(e-posta):* singalsurgery@yahoo.com

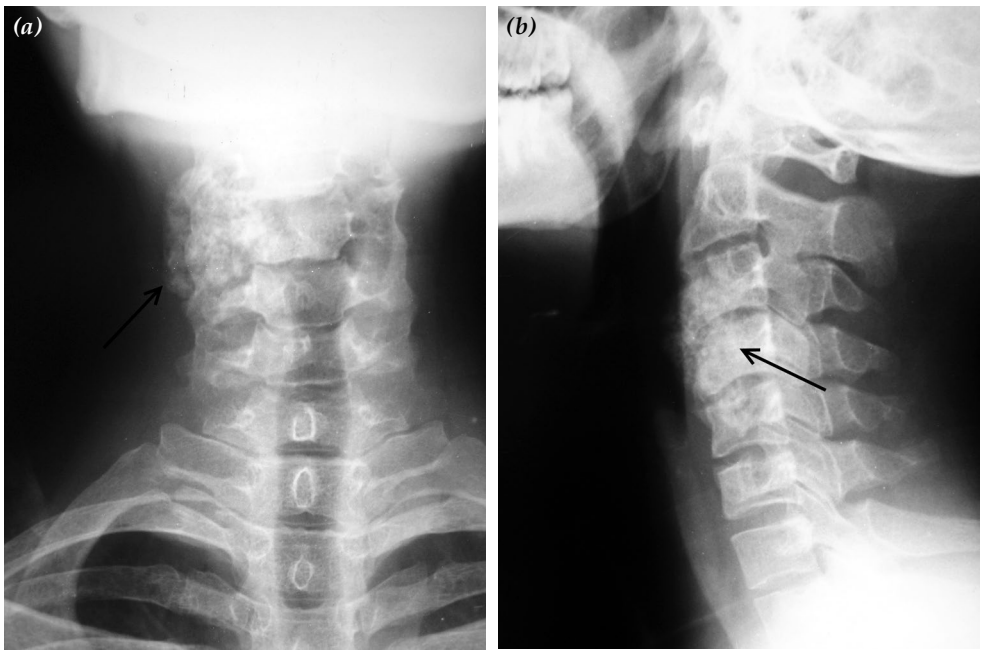

Figure 1. *Anterior-posterior* ***(a)*** *and lateral radiographs* ***(b)*** *of cervical spine are showing calcified mass with chondroid type of calcification overlying C3 and C4 vertebrae.*

hyperintense to muscle on T_2-weighted sequence and isointense to muscle on T_1-weighted sequence with evidence of hypointense foci in the mass suggestive of calcification (Figure 2a-c). There was also evidence of bone marrow edema in the rest of the C3 and C4 vertebral bodies. The mass was encasing the right vertebral artery and anteriorly causing pressure effects on the hypopharynx in the area of the right pyriform sinus. Non-contrast computed tomography (CT) showed a cartilaginous calcified mass arising from the right side of the C3 and C4 vertebrae and extending anteriorly to compress the hypopharynx (Figure 3). The patient was operated on with a diagnosis of osteochondroma, which was confirmed by histopathology.

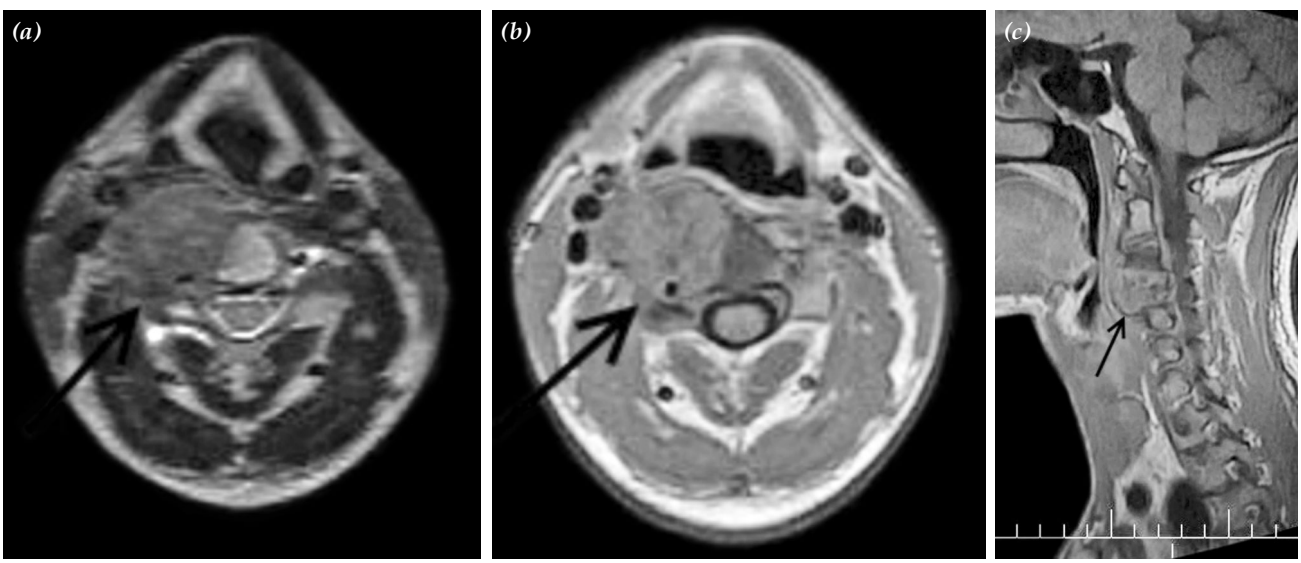

Figure 2. *Axial T_2W* ***(a)****, T_1W* ***(b)*** *and sagittal T_1W* ***(c)*** *magnetic rezonance images are showing large lobulated mass arising from the body, right side pedicle and transverse process of C3 and C4 vertebrae. Mass is encasing right vertebral artery and anteriorly causing pressure effect on hypopharynx in area of right pyriform sinus.*

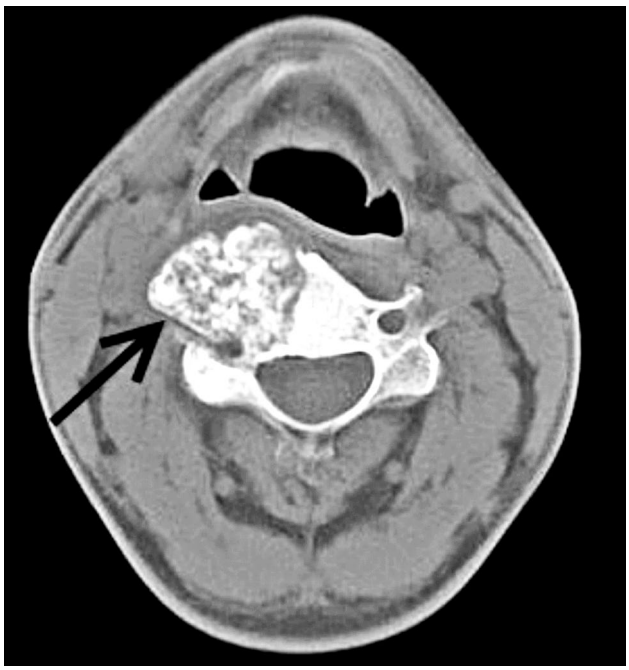

Figure 3. *Non-contrast computed tomography is showing cartilaginous calcified mass arising from the right side of C3 and C4 vertebrae and extending anteriorly to compress hypopharynx.*

DISCUSSION

Osteochondromas are believed to originate through lateral displacement of a portion of the epiphyseal growth cartilage[1] and affect mostly long bones. Only 1.3-4.1% of solitary osteochondromas originate in the spine.[2] Spinal osteochondromas are rare, benign tumors of bone. These tumors can manifest as solitary lesions or as part of a hereditary syndrome.[4] They make up 0.4% of intraspinal tumors or 3.9% of solitary spinal tumors.[5] Most spinal osteochondromas occur in the posterior cervical spine and can cause myelopathy or radiculopathy. Osteochondromas of the anterior cervical spine are very rare.[2] Anterior spinal osteochondromas in the neck can also present as a pharyngeal mass, as a calcified goiter, or with hoarseness or dysphagia. On plain radiographs, an osteochondroma typically appears as a pedunculated or sessile bone-like projection, the cortex and spongiosa of which are contiguous with the underlying bone.[6] Spinal osteochondromas are more difficult to detect on plain radiographs, probably because of the complex image formed by the spine. Computed tomography is the imaging modality of choice. Not only can it show the cartilaginous and osseous components of the tumor, allowing a radiologic diagnosis, but it also defines clearly the tumor's extent and its relationship to the vertebral and neural elements of the spine.[6,7] The following CT scan findings may be considered as typical of spinal osteochondroma *(i)* roundish, sharply outlined mass; *(ii)* bone-like density with scattered calcifications; *(iii)* paraspinal, dumbbell or eccentric intraspinal location; *(iv)* osteosclerotic changes in neighboring bone; and *(v)* lack of contrast enhancement.[6-8] Magnetic resonance imaging is more useful than CT in defining an extradural intracranial component of the tumor and dural compression.[9] On CT, the bony nature of the lesion and the diagnoses are more clearly suggested. Although most spinal osteochondromas cause radiculopathy and myelopathy as they commonly grow posteriorly, they can rarely grow anteriorly and cause swallowing and respiratory problems as happened in our case.

Declaration of conflicting interests

The authors declared no conflicts of interest with respect to the authorship and/or publication of this article.

Funding

The authors received no financial support for the research and/or authorship of this article.

REFERENCES

1. Arasil E, Erdem A, Yüceer N. Osteochondroma of the upper cervical spine. A case report. Spine (Phila Pa 1976) 1996;21:516-8.
2. Dahlin DC, Unni KK. Bone tumors: General aspects and data on 8542 cases. 4th ed. Springfield, IL: Charles C Thomas; 1986 p. 19-22: 228-9.
3. Grivas TB, Polyzois VD, Xarchas K, Liapi G, Korres D. Seventh cervical vertebral body solitary osteochondroma. Report of a case and review of the literature. Eur Spine J 2005;14:795-8.
4. Wang V, Chou D. Anterior C1-2 osteochondroma presenting with dysphagia and sleep apnea. J Clin Neurosci 2009;16:581-2. doi: 10.1016/j.jocn.2008.05.024.
5. Cohen DM, Dahlin DC, Maccarty CS. Apparently solıtary tumors of the vertebral column. Mayo Clin Proc 1964;39:509-28.
6. Cooke RS, Cumming WJ, Cowie RA. Osteochondroma of the cervical spine: case report and review of the literature. Br J Neurosurg 1994;8:359-63.
7. Fanney D, Tehranzadeh J, Quencer RM, Nadji M. Case report 415: Osteochondroma of the cervical spine. Skeletal Radiol 1987;16:170-4.
8. Mirra JM, Picci P, Gold RH. Bone tumors: Clinical, radiologic, and pathologic correlations. Philadelphia: Lea & Febiger; 1989. p. 1626-9.
9. Cherubino P, Benazzo F, Castelli C. Osteochondroma of the cervical spine. Ital J Orthop Traumatol 1991;17:131-4.