Case report

Solitary anterior osteochondroma of cervical spine: An unusual cause of dysphagia and review of literature

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ARTICLE INFO

Article history:

Received 19 December 2017

Received in revised form 20 December 2017

Accepted 28 December 2017

Available online 29 December 2017

1. Introduction

Osteochondroma is the most common benign tumor of bone (especially long bones), but involvement of the spine is very rare (1–4%).^{1,2} C2 vertebrae is the most commonly involved vertebrae. The neurological impairment is least due to slow growing nature of the tumor.³ They usually arise from the posterior elements and anterior element involvement is rarity. We share our experience of a cervical spine osteochondroma arising anteriorly from the body of C4 vertebra and causing dysphagia in a young male patient.

2. Case report

A 33 year old man presented to us with history of progressive dysphagia for the past twelve months. There was no any prior history of cervical trauma or surgery in past. Higher mental functions was normal and cervical spine examination revealed normal cervical movements and neurovascular examination was normal. The patient was investigated for the same. Plain antero-posterior and lateral radiograph of cervical spine showed loss of normal cervical lordosis with a mass arising from body of C4 vertebrae Fig. 1. Computed Tomography delineated large irregular sessile bony outgrowth arising from anterior tubercle of right transverse process and body of C4 vertebrae Fig. 2a,b. Magnetic Resonance Imaging showed heterogeneously enhancing lesion with cartilage cap thickness of 1.76 cm Fig. 3. In view of progressive dysphagia a surgical excision of mass was planned. There was no evidence of involvement of any long bone or positive family history.

Fig. 1. X ray (AP and Lateral) showing solitary osteochondroma arising from C4 vertebrae.

Fig. 2. Computerised Tomography (Sagittal and axial) showing osteochondroma arising on the Right side.

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Fig. 3. MRI (sagittal) showing osteochondroma with cartilaginous cap.

Using standard Smith Robinson Approach; a semi-vertical incision along the anterior border of sternocleidomastoid muscle was given on the right side. A careful dissection was performed to isolate the tumor. Exposure of vertebral artery done by de-roofing foramen transversum as it was going close to the tumor tissue. The tumor tissue was removed en-bloc and sent for histopathology [Fig. 4](#). Hemostasis was achieved with bipolar cautery and use of bone wax. Wound was closed in layers over a drain. There was no evidence of any post-operative hematoma or infection. Histopathology revealed osteochondroma and no evidence of malignancy [Fig. 5](#). Patient is currently asymptomatic at 2 years follow-up and there had been no recurrence [Fig. 6](#).

3. Discussion

Osteochondroma can manifest as solitary or multiple. The involvement of spine occurs more frequently in multiple osteochondroma and male are frequently affected than female [\[4\]](#). The prevalence of these lesions in cervical spine is usually

Fig. 4. Intraoperative photograph showing osteochondroma with intact cartilage cap.

attributed to microtrauma suffering physeal cartilage plate for increased mobility and flexibility of vertebral segment.³ Osteochondroma usually originates in the pedicles or in the vertebral body and anterior part is rarely involved.⁵

The diagnosis of Osteochondroma by plain radiograph is sometimes difficult because of the structures are superimposed on the image so Computer Tomography is recommended in such cases. Spinal exostosis is better delineated with computer tomography than magnetic resonance due to bone lesion characteristics.⁶ Magnetic Resonance imaging is useful in patients with radiculopathy to monitor the level and extent of nerve compression. Malignancy should be suspected when the thickness of the cartilage cap is greater than 2 cm in adults and more than 3 cm in children.⁷

Few case reports of osteochondroma arising from anterior part of cervical spine and their management [Table 1](#).^{11–15}

The solitary osteochondroma are usually asymptomatic and can be managed conservatively and there are low chances of malignancy.⁸ Surgical resection is done if there is pain, compressive symptoms or neurological involvement. The recurrence following surgical management is rare and is usually due to incomplete resection of the lesion.^{9,10}

Fig. 5. Photomicrographs were taken from the lesion showing a cartilaginous cap (arrow) with underlying vertically oriented lamellar bony trabeculae (A × 40). High power photomicrograph shows benign chondrocytes (arrow) within the cartilaginous cap (B × 100).

Fig. 6. Follow up X ray at end of 2 years.

Table 1
XXXX.

S. No	Location of Cervical Osteochondroma	Symptoms	Management
1.	Anterolateral aspect of the C7[11]	Dysphagia	Surgical removal
2.	Anterior surface of the C4 and C5[12]	Laryngeal compression, dysphagia and paralysis of left vocal cord	Surgical removal
3.	Anterior arch C1 vertebral[13]	Obstructive sleep apnea and dysphagia	Surgical removal
4.	Body of C2 [14]	Globus Symptom i.e. subjective sensation of mass in the throat	Surgical removal
5.	Anterior arch of Atlas [15]	Dysphagia	Surgical removal

4. Conclusion

Cervical Osteochondroma must be sought as the cause of progressive dysphagia and surgical intervention is warranted in such cases.

Conflict of interest

None.

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