



FIRST REPORTED CASE OF OSTEOCHONDROMA IN CONDYLE OF MANDIBLE IN BHOPAL

Maxillofacial Surgery

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ABSTRACT

Osteochondroma is a rare tumor of the mandibular condyle. Much confusion seems to exist in the literature in differentiating these tumors from chondromas as well as condylar hyperplasias. Due to considerable overlapping features between chondromas and condylar hyperplasia, it is likely to get misdiagnosed, thereby resulting in inadvertent diagnosis in the treatment.

KEYWORDS

INTRODUCTION

Osteochondroma or solitary osteo-cartilaginous exostosis is an exophytic lesion that arises from the cortex of bone and is capped with cartilage.¹ It is one of the most common benign tumors of the bone, representing 35%–50% of all benign bone tumors and 8%–15% of all primary bone tumors.² Although frequently found in the general skeleton, it is most infrequently seen to involve the facial bones.

The coronoid process and the mandibular condyle are the affected areas especially the medial aspect of the mandibular condyle. At present in Scholarly literature, there are a total of 98 cases of mandibular condylar osteochondroma³ reported between 1927 and 2010. It reveals a female preponderance, with male: female ratio of 1:1.6 and age range of 13 years–70 years (mean 38.4 years).³ However, there are no large studies available for review because most of the literature consists of only single case reports.

A case report of a 35 year old male patient with mandibular deviation and malocclusion is presented here. He initially went unnoticed for features of an osteochondroma of the mandibular condyle but was subsequently treated for the same.

In this report, an interesting case of an osteochondroma of the mandibular condyle in a 35 year old male patient who was initially considered to have deviated mandibular prognathism is presented. Since the osteochondroma of the mandibular condyle arises from different sites around the condyle and presents diverse shapes on panoramic radiographs, only plain radiographs features may not help us in the exact diagnosis. If the CT and MRI techniques are integrated, the diagnosis becomes more reliable, the complaint of progressive facial asymmetry, difficulty in speech and mastication for the past 1 year. More recently, the patient had also experienced mild difficulty in opening the mouth. There was no history of trauma, infection in and around the TMJ or ear and no similar complaints in the past.

History revealed that 2 years back, the patient had presented with lesser similar signs of facial asymmetry and deviated mandible to the right side at the same institution for which he had undergone bilateral sagittal split osteotomy and differential mandibular setback to correct the prognathism and midline shift. The correction of his facial asymmetry was undertaken after scintigraphy tests which clearly showed no hotspots for left TMJ region and after ruling out any endocrinologic abnormalities. The patient's general condition was otherwise normal.

Clinical examination showed extensive facial asymmetry with

mandibular deviation to the right which was a major concern for the patient. The mandibular midline was deviated by 7 mm to the right of the maxillary dental midline, reflecting an asymmetric prognathism. Inter-incisal mouth opening at examination was 35 mm. There was an ipsilateral open-bite and a contra-lateral cross-bite. No obvious canting of occlusion was evident. Lateral jaw movements were restricted.



Outcome and follow-up

The patient regained normal jaw related with correction of occlusion postsurgery. Open bite on the diseased side and cross bite on the right side of the face were corrected and facial symmetry was regained after the surgery. Prosthetic acceptance was reviewed, after fortnight which was found to be good. The titanium prosthesis articulated with glenoid fossa; therefore, the occlusion and normal movements of the jaw were restored.

DISCUSSION

In facial region that includes major bone structure Osteochondroma is a relatively common finding in the skeleton, occurring frequently in the metaphyseal region of the long bones. It is also found in the ribs, scapulae, clavicles, and vertebrae.⁴ In the maxillofacial region, the occurrence of osteochondromas is infrequently reported.

Common clinical symptoms are pain, deformity, altered sensation and function in the form of facial asymmetry, TMJ pain, clicking sound or hypomobility of jaw. Other signs are malocclusion, joint crepitus on auscultation, muscle tenderness, deviated path of jaw opening, and rarely tinnitus, hearing loss and stenosis of external auditory canal are reported. Tumour mass proliferation leads to increase in ramus height

on the affected side causing facial asymmetry, deviated path of opening and malocclusion. It usually causes open bite on the affected side and crossbite on the unaffected side.⁷ Tumour mass may displace cartilage cap of TMJ. Tumour mass sometimes proliferate medially underneath the zygomatic arch and may cause hypomobility of jaw. Posterior growth of mass may displace joint in forward direction causing severe malocclusion. The majority of extracondylar osteochondromas in this region occur on the coronoid process. However, cases have been reported in the posterior maxilla, maxillary sinus, zygomatic arch, mandibular body and symphysis.⁵ Osteochondroma of the mandibular condyle is extremely unusual.² Those involving the mandibular condylar region, are found most often on the medial aspect of the mandibular condyle (52%), followed by an anterior location (20%), but rarely on the lateral or superior positions (1%).³

- Osteochondroma (OSCH) of condyle is a rare slow-growing benign tumour difficult to diagnose due to lack of knowledge of this rare entity.
- OSCH appears as a bony exostosis most commonly from the medial surface of condyle.
- CT and MRI scans reveal the location and mineralisation pattern helpful in diagnosis and treatment planning

Origin of osteochondroma is controversial. Different theories of etiopathogenesis – neoplastic, developmental, reparative, and traumatic have been proposed and discussed.^{6,7} Radiation-induced osteochondroma is also reported in the literature.⁸ However, presently none of these theories are sufficient to explain all the cases of osteochondromas. Among the reported benign tumors of the condyle, chondroma, osteomas and osteochondromas; osteochondromas are most common.⁹

Condylar osteochondromas are usually situated on the anteromedial surface of the condylar head.^{3,10} The occurrence of these tumors in the condyle tends to support the theory of aberrant foci of epiphyseal cartilage on the surface of the bone.¹¹ It is accepted that stress in the tendonous insertion region of lateral pterygoid muscle, where focal accumulations of cells with cartilaginous potential exists, leads to formation of these tumors. This may also explain the occurrence of osteochondromas in the coronoid process, which is stressed by the tension of temporalis muscle.

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