Case Report

Osteochondroma condyle: A journey of 20 years in a 52-year-old male patient causing severe facial asymmetry and occlusal derangement

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Abstract

Mandibular condylar osteochondroma (OS) is a rare lesion though most common benign tumor of the axial skeleton. OSs are slow-growing tumors originating from the cortex of the bone resulting in facial asymmetry, temporomandibular dysfunction and occlusal derangement. We present an extremely rare case of OS of the mandibular condyle in a 52-year-old male patient who presented to our hospital with gradual deviation of the lower jaw, difficulty in opening the mouth and chewing the food for 20 years with clinicoradiological and pathological correlation.

Keywords: Mandibular condyle, osteochondroma, temporomandibular joint

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INTRODUCTION

Osteochondroma (OS) or osteocartilaginous exostosis is a rare slow-growing benign tumor arising from the cortex of the bone. The embryonic development of the temporomandibular joint (TMJ) occurs by the endochondral ossification, making this area the most frequent facial site for OS.[1] OSs are common tumors of the long bones but are rare in the craniofacial region, the incidence of which is around 0.6%. The mean patient age is 39.7 years, with a peak in the fourth decade. The male-to-female ratio is 1:1.28. In the facial skeleton, the coronoid process and the mandibular condyle are the most common sites of involvement.[2] OS usually causes facial asymmetry over the years. Modified as 'It can be of two types; those causing overgrowth & bowing of ipsilateral body needing excision and gnathic correction and those growing superior or superomedial to condyle requiring only excision and swing back correction of symmetry.[3] We describe OS of condyle – a journey of 20 years in a 52-year-old male patient causing severe facial asymmetry and occlusal derangement.

CASE REPORT

A 52-year-old male patient reported to the dental outpatient department with a chief complaint of deviation of the lower jaw toward the right side with difficulty in opening mouth and chewing food for 20 years. On extraoral examination, facial asymmetry, right-sided deviation of the mandible and bony growth measuring 35 mm × 40 mm

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on the left TMJ area which was fixed and nontender were noted. Intraoral examination revealed restricted mouth opening with difficulty in speech and eating. Deranged occlusion with deviation of mandible towards rightside. Routine laboratory investigations were within normal limits. Orthopantomograph X-ray showed irregular radiopaque mass over the left condylar region. Inferiorly displaced left-side condyle was compared to the contralateral side [Figure 1]. Computed tomography (CT) scan with three-dimensional (3D) reconstruction showed irregular bony mass in the left condylar region. T2- weighted magnetic resonance imaging (MRI) section showed solid mass in relation to the left condyle without involving condyle and temporal fossa [Figure 2a and b]. Provisional diagnosis of OS was given.

Preanesthetic evaluation revealed undetected old myocardial infarction and extensive anterior non-ST-elevated coronary syndrome without congestive cardiac failure. Hence, conservative treatment, surgical excision of tumor mass and occlusal correction without orthognathic surgery were planned. Preauricular approach (Al Kayat and Bramley's incision) was given. Tumor mass on the left TMJ was exposed. Tumor mass was not attached to the condyle and removed in fragments. It was removed in pieces without zygomatectomy. Vacuum drain was placed and wound closure was done. Postoperative period was uneventful.

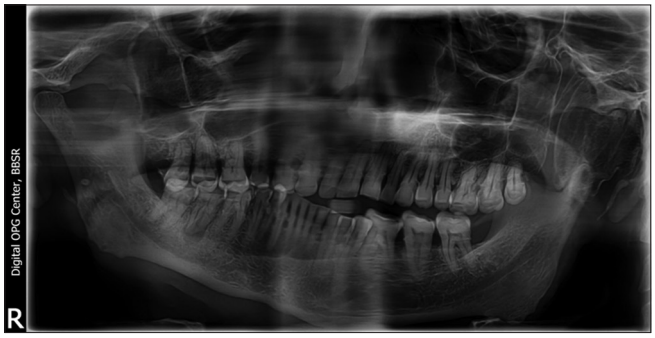

Figure 1: Radiograph showing irregular radiopaque mass over the left condylar region and inferiorly displaced left-side condyle compared to the contralateral side

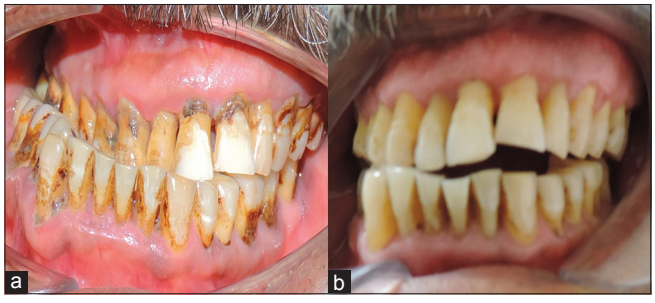

Figure 3: (a and b) Pre and post-operative pictures, respectively, for comparison of occlusion

The patient was kept under observation in Intensive Care Unit for 2 days. Arch bar fixation with elastic traction was done to guide the occlusion for 3 weeks [Figure 3a and b]. Grossly, irregular bony mass with a bluish-gray cap of cartilage was noted. Histopathologically, surface hyaline cartilage with underlying endochondral ossification and cortex was noted. Final diagnosis of OS of the condyle of the mandible was given [Figure 4a and b].

DISCUSSION

OS is a developmental lesion rather than a true tumor. The pathogenesis of OSs of the mandibular condyle is speculative. Trauma and inflammation have been implicated as either initiating or predisposing factors. Lesions consistently arise from the anteromedial surface of the condylar process at the site of attachment of the lateral pterygoid muscle. The tumors are thought to develop from the tendinous attachment of this muscle, similar to the tendency of long bone.[4] This supports the theory of focal accumulation of embryonic connective tissue with cartilaginous potential at the site of tendon insertions. Constant stress and strains in the insertion of the lateral pterygoid muscle may cause hyperplastic changes in these cells and may also explain the occurrence of these tumors in the coronoid process stressed by the tension of the

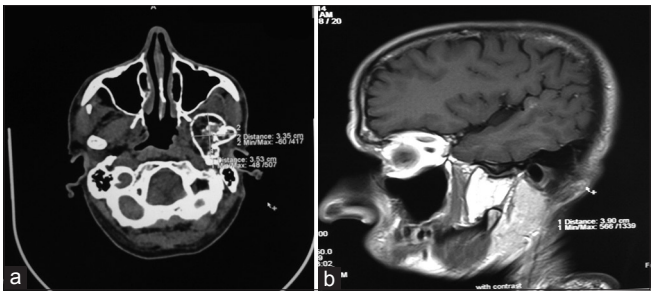

Figure 2: (a) Computed tomography image: Axial slice shows bony mass on the left condylar region sized 3.4 cm × 4 cm. (b) T2-weighted magnetic resonance imaging section shows solid mass in relation to the left condyle without involving condyle and temporal fossa

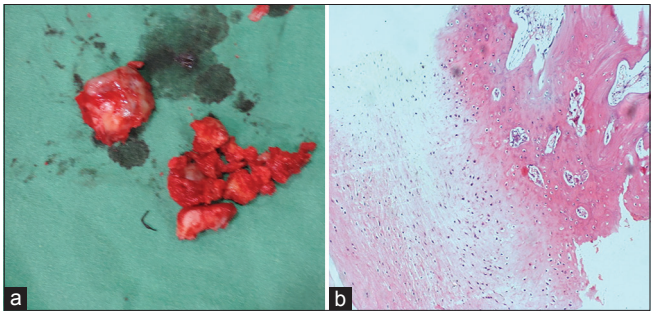

Figure 4: (a) Gross specimen showing multiple bony bits with cartilaginous cap. (b) Photomicrograph showing mature cartilaginous cap composed of hyaline cartilage and focus of endochondral ossification with underlying cortex (H and E, ×10)

temporalis muscle. The exact etiology of these tumors is not understood and controversial. Other hypotheses are based on residues from the cartilaginous primordial cranium, or somatic mutations in chromosome 8 and 11 are responsible for the neoplastic pathogenesis of OS.[5,6] OS should be differentiated from unilateral condylar hyperplasia, osteoma, chondroma, chondroblastoma and benign osteoblastoma. The definitive diagnosis is based on clinical, radiological and histological criteria.[7] The use of CT scan provides information about the accurate diagnosis, extent of the lesion, and these findings may then help a surgeon to decide on the best treatment modality for the case. CT scan with 3D reconstruction helps in multiplane visualization and further MRI scan delineates the soft-tissue alterations.[2,8] The traditional treatment of condylar OSs consists of total condylectomy with immediate reconstruction. Aydin *et al.* and Ortakoglu *et al.* suggested minimally invasive treatment for OSs by removing only the portion of condyle involved by the lesion, reshaping the remaining condyle and subsequent plication of the disc as OS is benign in nature and carries only 2% recurrence rate. Peroz *et al.*, in his extended review on 34 cases reported, concluded that 26 patients treated with condylectomy had no recurrence and two developed recurrent tumor out of 9 treated by only surgical removal of the tumor.[5,9] In our present case, the bony mass was in the region of the left condyle and not attached to the condyle. Hence, conservative surgery was planned as the patient was high-risk subject. Tumor was large in size and was removed in piece to avoid zygomatectomy. Occlusion was brought to near normal. Only three cases of recurrence have been reported in the literature. Two of the recurrent OSs were detected by a routine radiographic examination without symptoms a year later, while the third was discovered after 3 years and was accompanied by asymmetry. There is no recurrence in our patient even after 38 months of follow-up. However, long-term follow-up is necessary.[10] Both functional and cosmetic goals were achieved to a great extent.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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