

Osteochondroma of Mandibular Condyle: A Rare Case Report

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Abstract: Osteochondromas are usually common tumors of the long bones, Osteochondroma of temporo mandibular joint is a rare, slow growing, benign tumor that causes a progressive enlargement of the condyle, usually resulting in facial asymmetry, temporo mandibular joint (TMJ) dysfunction, limited mouth opening and malocclusion.

Radiographically, there is unilaterally enlarged condyle usually with an exophytic outgrowth of the tumor from the condylar head. We present a rare case of osteochondroma of right mandibular condyle in a 46-year-old male who reported with painless swelling over TMJ area and progressive limited mouth opening. Computed tomography (CT) was performed for better evaluation of the pathological condition.

Keywords: Osteochondroma, Computed Tomography, Mandibular condyle, Histology, Exostosis.

I. Introduction

Osteochondroma (OC) is also known as exostosis, with cartilage capped exophytic lesion that arises from the bone cortex[1]. It is one of the most common benign tumor of the long bones, but is rarely associated with the facial bones[2]. It has been described in the head, cranial base, jaw, maxillary sinuses, condyle, ramus, body, coronoid process and symphyseal mandibular region³. The embryonic development of the temporo mandibular joint (TMJ), by the endochondral ossification, makes this area the most frequent facial site for OC[1]. It represents approximately 35% to 50% of all benign tumors, and 8% to 15% of all primary bone tumors[3]. The male to female ratio is 1:1.28.

Facial asymmetry and accompanying malocclusion are the most common presentations. Osteochondromas may arise on different aspects of the mandibular condyle. Meng et al[4] reported 34 cases of osteochondromas. In that series, the tumor arose from the medial aspect in 55.9% of the cases, the anterior-superior in 11.8%, the posterior-superior in 11.8%, the lateral in 8.8%, and the generally enlarged in 11.8% of cases.

II. Case Report

A 46-year-old male patient reported to our department, Bapuji Hospital Davangere with complaint of painless hard slow growing swelling on the right TMJ area and asymmetrical face since 1 years 5 months. He noticed reduced mouth opening and deviation of the jaw while opening and closing the mouth. There was no history of any previous trauma. Patient was known case of diabetes mellitus since 5 years and hypertension since 8 years and was on treatment. There was no history of any ear infection. On clinical examination a non-tender bony hard oval swelling on right TMJ approximately measuring around 1.5cm × 1.5cm, with reduced TMJ movements, facial asymmetry and deviation of the midline to the right side, severe malocclusion. There was no tenderness over the right TMJ.

Based on history, clinical examination and CT findings (Fig.1-Fig.5) with continuation of medullary cavity and cortex from the condyle, the diagnosis of osteochondroma of right TMJ was made with differential diagnosis of osteoma, benign osteoblastoma, and hypertrophied mandibular condyle. The patient underwent surgical intervention with correction of malocclusion, and osteochondroma was confirmed on histopathology.

III. Discussion

The rare TMJ lesions are osteochondroma, osteoma, osteoblastoma, synovial chondromatosis, ganglion, synovial cyst, simple bone cyst, aneurysmal bone cyst, epidermal inclusion cyst, hemangioma, non-ossifying fibroma, langerhans cell histiocytosis, plasma cell myeloma, and sarcoma. The bone or cartilage forming tumors such as osteoblastoma or condylar hyperplasia are the most common lesions of the mandibular condyle. They are easily identified as they lead to facial asymmetry and malocclusion. Conversely, the intraosseous condylar lesions are difficult to diagnose as their symptoms-painful or painless swelling, dull pain in the pre auricular region, clicking sound and discomfort during mastication-are similar to the symptoms of temporo mandibular disorders.

Osteochondroma of mandibular condyle is very rare. The etiology is unknown. Trauma and inflammation are thought to be the contributory factors¹. There are controversies whether such lesions should be considered of developmental, neoplastic or reparative nature^[1,2,3].

The symptoms are variable depending on lesion location. The condylar osteochondromas are frequently situated on the antero-medial surface of the condylar head. The TMJ osteochondroma causes a progressive enlargement of the condyle, usually resulting in facial asymmetry, deviation of chin, TMJ dysfunction, limited mouth opening, cross bite to the contra lateral side and malocclusion with open-bite on the affected side. Pain is rarely associated with this tumour^[1,2,5]. The present case was also associated with similar features and was situated at antero-medial surface of the condyle. The growth of an OC is usually slow, causing gradual displacement and elongation of the mandible^[1,2,6]. Our present case also presented with similar clinical features.

The diagnosis of OC in the present case was based on clinical and radiographic findings. Computed tomography (CT) helps in evaluating complex cases in the maxillofacial field and provides information that leads to more accurate and specific diagnosis of TMJ pathologies. CT scans can easily demonstrate the continuity of cortex and medulla of the bone tumor and is considered the best tool to demonstrate calcified cartilage^[1,5]. Radiographically, OC manifests as a radiopaque lesion with distinct borders and is easily identified on panoramic radiograph and CT imaging^[2,3]. In the present case, the radiopaque-radiolucent appearance of the lesion may be based on the amount of marrow tissues and proportion of calcification of the tumour. CT was useful in determining the margins of the OC. Scintigraphy can also be used to detect the presence of intense uptake in the exostosis^[1,7]. Histologically, the diagnosis of an OC includes chondrocytes of the cartilaginous cap arranged in clusters parallel to lacunar spaces. Most of the lesions show growing bone surrounded by cartilages^[1,2,7].

Differential diagnosis of osteochondroma of mandibular condyle includes unilateral condylar hyperplasia, osteoma, chondroma, chondroblastoma, benign osteoblastoma, giant cell tumor, myxoma, fibro-osteoma, fibrous dysplasia, fibrosarcoma, and chondrosarcoma^[1,2,6]. However definitive diagnosis should always be based on clinical, radiological and histological criteria.

Surgical treatment is the choice for condylar osteochondroma which includes complete resection of the tumor using condylectomy, condylectomy with reconstruction, or selected tumor removal without condylectomy.

Figures



Fig.1

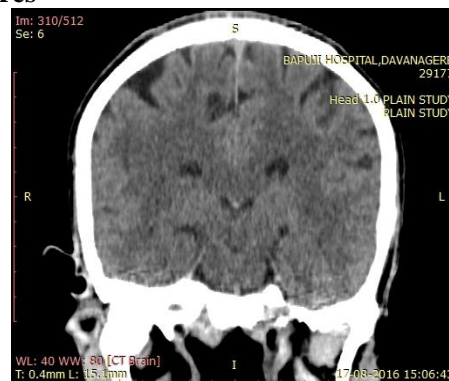


Fig.2

CT scan: brain window (axial and coronal) showing an pedunculated mineralized solid mass of bone density, originating from the head of right condyle noted.



Fig.3



Fig.4



Fig.5

CT scan: bone window (axial, coronal and sagittal) showing an pedunculated bony mass, originating from the head of right condyle noted, with clear continuation of medullary cavity and cortex with condyle. Typical for an osteochondroma.

IV. Conclusion

Swelling in TMJ region with facial asymmetry is a diagnostic challenge. Temporomandibular joint lesions are usually diagnosed by thorough patient history, comprehensive clinical examination and radiographic imaging. These pathologies are often initially overlooked, as patients are treated by conventional means. Imaging techniques along histopathology are the valuable aid for accurately diagnosing neoplasm like condylar osteochondroma.

References

- [1]. Utumi ER, Pedron IG, Perrella A, Zambon CE, Cecchetti MM, Cavalcanti MG. Osteochondroma of the temporomandibular joint: A case report. *Braz Dent J.* 2010;21:253–8.
- [2]. Kumar A, Rastogi S, Modi M, Nijhawan S. Osteochondroma of the mandibular condyle. *Indian J Dent Res.* 2011;22:616.
- [3]. Cury SE, Shinohara E, Oliveira R, Miyagusko J, Mitsuda ST, Martins MT, et al. Soft tissue osteochondroma of the articular disc of the temporomandibular joint: A Case Report. *Webmedcentral Histopathol.* 2011;2:1–7.
- [4]. Meng Q, Chen S, Long X, Cheng Y, Deng M, Cai H. The clinical and radiographic characteristics of condylar osteochondroma. *Oral Surg Oral Med Oral Pathol Oral Radiol.* 2012;114:e66–74.
- [5]. Bonatti Bde S, Patrocinio LG, Costa SA, Costa JM, Patrocinio JA. Temporomandibular joint synovial chondromatosis. *Braz J Otorhinolaryngol.* 2008;74:480.
- [6]. Wood RE. Malignant diseases of the jaws. In: White SC, Pharoah MJ, editors. *Oral radiology principles and interpretation.* 5th ed. New Delhi: Mosby; 2006. pp. 458–84.
- [7]. Park W, Nam W, Park HS, Kim HJ. Intraosseous lesion in mandibular condyle mimicking temporomandibular disorders: Report of 3 cases. *J Orofac Pain.* 2008;22:65–70.