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Case Report

A Rare Site Mandibular Condyle Osteochondroma Complicated by Fracture

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Abstract

Osteochondromas are most common benign bone tumor occurring at the metaphyseal region of long tubular bone but rarely seen at maxillofacial region with less than 100 cases of mandibular condyle osteochondromas reported in literature. This article reports a rare case of mandibular condyle osteochondroma with associated fracture in 32 years old female patient presenting with sudden onset of severe pain at right preauricular region following yawning.

Key Words: *Computed tomography, Fracture, Mandibular condyle, Osteochondroma, Temporomandibular joint.*

Introduction:

Osteochondroma as defined by world health organization (WHO) "is a cartilage capped bony projection arising on the external surface of bone containing a marrow cavity that is continuous with that of the underlying bone" [1]. Majority of osteochondroma are solitary, however approximately 15% are multiple and associated with hereditary multiple osteochondromas [2]. It is most common benign tumor of bone occurring in 3% of population and constitutes 35 - 50% and 8 - 15% of all benign and primary bone tumors respectively [2, 3]. Osteochondromas occur in a bone with embryonic development by endochondral ossification [4] and most commonly occur in metaphyseal region of long tubular bone (femur, humerus, tibia) with rare occurrence in maxillofacial region [5]. Usually osteochondromas are asymptomatic and found incidentally with most common clinical symptom being long

standing slowly growing hard mass, but may present with symptoms due to complications like bony deformity, vascular compromise, nerve impingement, fracture, overlying bursa formation and rarely malignant transformation [1,6].

This article reports a case of osteochondroma in a rare site at mandibular condyle complicated by fracture.

Case presentation:

A 32 years old female patient presented with sudden onset of severe pain at right preauricular region for 2 days following yawning. She also gave history of slowly growing painless hard swelling at right preauricular region, facial asymmetry, progressive difficulty in opening of mouth and in mastication and crowding of tooth for last 2 years. No history of previous trauma or surgery was present. On clinical examination malocclusion, facial asymmetry with deviation of midline

towards right side, limitation of mouth opening and a bony hard swelling of size approximately 1.5 x 1.5 cm at right temporomandibular joint (TMJ) region were noted. There was tenderness over the swelling, however overlying skin was normal. Patient was then referred for computed tomography (CT) of TMJ, which showed a well-defined bony outgrowth originating from medial surface of right mandibular condyle and extending superiorly with continuation of cortex and medullary cavity of bony outgrowth and parent bone. Associated fracture was seen at the base of bony outgrowth. Left TMJ was normal. (Figure: 1, 2). After correlating clinical and radiological findings diagnosis of right mandibular condyle osteochondroma with fracture was made. Surgical resection of the lesion was done and diagnosis of osteochondroma confirmed by histopathology.



Figure 1

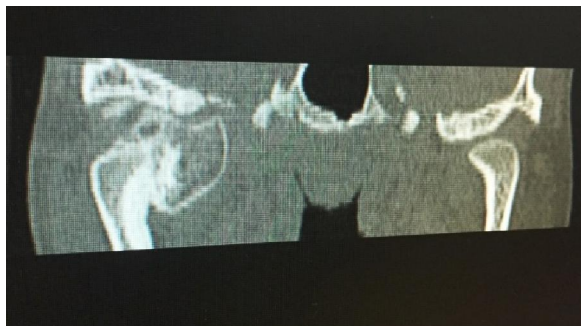


Figure 2

Figure 1 & 2: Axial and coronal CT scan images showing a well-defined bony outgrowth originating from medial surface

of right mandibular condyle with fracture at the base of bony outgrowth.

Discussion

Although osteochondromas most commonly occur at metaphyseal region of long tubular bone, they are rarely seen in maxillofacial region [5]. In maxillofacial region, they are reported in skull, skull base, maxillary sinuses, posterior maxilla, zygomatic arch and in mandibular condyle, coronoid process, ramus, body and symphysis [3,7]. Less than 100 cases of mandibular condyle osteochondromas are reported in literature [5,7,8] with majority (55.9%) arising from medial aspect of condyle in one of the case series [9], as seen in this case. The exact etiology for origin of mandibular condyle osteochondroma is still not clear with trauma and inflammation suggested as contributory factors [4]. Also, controversies regarding nature of the lesion being developmental, neoplastic or reparative exists [3,4]. The theory of aberrant foci of epiphyseal cartilage on the surface of bone is supported by occurrence of osteochondroma in the condyle [10]. According to another theory, stress in the tendinous insertion region of lateral pterygoid muscle where focal accumulations of cells with cartilaginous potential exist leads to formation of these tumors [11]. Hard swelling at the region of TMJ, facial asymmetry, difficulty in mouth opening, cross bite to the contralateral side, malocclusion, TMJ pain, clicking and recurrent joint dislocation are common symptoms of mandibular condyle osteochondroma [8,9] but may also present due to complications like fracture, as the patient did in this case. Radiological investigation includes radiograph and CT scan of TMJ. Panoramic radiograph shows well defined radioopacity with distinct border at the region of mandibular condyle. CT scan plays significant role in diagnosis

and preoperative treatment planning of the lesion. Bony outgrowth with continuity of its cortex and medullary cavity with that of parent bone can easily be demonstrated by CT scan, which is the most important diagnostic feature of osteochondroma. Coronal images give better anatomical details and relationship of outgrowth and parent bone. Even though non-calcified cartilaginous cap is not seen with CT scan, it has high accuracy for demonstration of calcified cartilage. Also, CT scan plays vital role in differential diagnosis, particularly differentiating mandibular condyle osteochondroma from unilateral condylar hyperplasia and should be performed in all cases of suspected condylar osteochondroma. [4,7,12]. Other differential diagnosis to be considered include osteoma, benign osteoblastoma, chondroma, chondroblastoma, giant cell tumor, myxoma, fibro-osteoma, fibrous dysplasia, fibrosarcoma and chondrosarcoma [13]. On histopathological examination, osteochondroma shows chondrocytes of the cartilaginous cap arranged in clusters parallel to lacunar spaces [4]. However definitive diagnosis of osteochondroma should always be made correlating clinical, radiological and histopathological findings.

Surgery is the treatment of choice for mandibular condyle osteochondroma with an aim to achieve acceptable mouth opening ranges, recovery of facial asymmetry, establish facial harmony and correction of malocclusion [4,13].

Conclusion:

Mandibular condyle is a rare site for osteochondroma, however should be considered in differential diagnosis in patients presenting with slowly growing swelling at TMJ region and facial asymmetry. Fracture of the lesion can occur resulting in sudden onset of pain at TMJ region. CT scan plays crucial role in diagnosis and preoperative treatment

planning of these lesions, hence should be performed in all cases of suspected mandibular condyle osteochondroma.

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