CASE REPORT

Pseudo Temporomandibular Joint Ankylosis Caused by a Giant Osteoma in Zygoma: A Case Report

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ABSTRACT

An exostosis is a benign overgrowth of a pre-existing bone. They are relatively rare in head and neck (HN) region compared to long bones. In HN, sinuses are most frequent site of involvement and jaw bone is rare one. It is usually asymptomatic so remain undiagnosed over years together. Sometimes patient may develop esthetic or functional problems such as facial asymmetry, reduced mouth opening (MO), or severe pain, which are somewhat similar symptoms of temporomandibular joint (TMJ) disorder, so osteomas are misdiagnosed as such. The objective of current article is to present an unusual case of a giant osteoma of zygoma causing reduced MO who misdiagnosed as true, i.e., intra-articular TMJ ankylosis previously, which was later on diagnosed correctly with computed tomography scan and histopathology and treated with surgical excision.

Keywords: Ankylosis, Osteoma, Temporomandibular joint.

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INTRODUCTION

An exostosis, also called an osteoma, is a benign overgrowth of a pre-existing bone. They are broadly classified as central, peripheral, and extra-skeletal types.[1,2] In head and neck region, osteomas are relatively rare compared to long bones but if occurs in skull, sinuses are most frequent site and in jaw bones mandible is commonly involved.[3] As far as location, size or number is concerned, exostosis does not show any consistent pattern of occurrence. It is usually asymptomatic and exhibits continuous growth at adulthood, so, detected incidentally on routine radiographic examination. Sometimes patient may present with more striking features such as facial asymmetry or severe dysfunction, in which osteoma should be considered as one of the differential diagnosis. The objective of current article is to present an unusual case of a giant osteoma of zygoma leading to reduced mouth opening (MO) causing pseudo temporomandibular joint (TMJ) ankylosis who was misdiagnosed as true TMJ ankylosis previously.

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CASE REPORT

A 17-year-male patient reported with gradually reduced MO and slowly growing hard bony mass in left-sided cheek bone since 6–7 years. No history of trauma or infection associated. Previously private practitioner diagnosed it as fibrous TMJ ankylosis due to patient's symptoms and cone-beam computed tomography (CBCT), so, they planned for brisement force, i.e., forceful MO under sedation. There is no improvement in symptoms on treatment at private hospital, so patient referred to our institute. On initial examination, we found inter-incisal MO as 2–3 mm, slight TMJ movements present with deviation on left side. On palpation, bony hard mass palpated in the left zygoma region extending toward mandible mimicking ossification in masseter muscle or exostosis. CBCT showed bony growth extending from zygoma to mandible but due to lack of essential cuts repeat CT scan advised. CT scan showed bony outgrowth of 3.2 cm×1.4 cms approximately extending from outer cortex of mandibular ramus to left zygomatico maxillary sutures, suggestive of exostosis causing pseudo ankylosis. After pre-anesthetic fitness and patient's consent, exostosis was removed surgically by intraoral incision preserving vital structures under general anesthesia. This procedure results in on table 35 mm MO which was maintained by physiotherapy in post-operative period. Patient kept on long-term regular follow-up and vigorous MO exercises. On histopathology examination, decalcified section of resected specimen showed the presence of osteoid tissue along with fibro-cellular marrow tissue confirming diagnosis of osteoma.

DISCUSSION

Osteomas are benign outgrowth of preexisting bone, may arise from proliferation of trabecular (cancellous), compact bone (dense lamellae), or combination of both.[4] According to origin, osteomas are central, peripheral, and extra-skeletal

which arise from endosteum, periosteum, and muscle, respectively.[1,2] Etiology of osteoma is unknown but some suggested causes include genetic, environmental factors, masticatory hyperfunction, and continued jaw bone growth.[5] As there is no history of trauma, syndromic features or known etiological factors seen, in present situation, we could suggest developmental etiology.

Osteomas are more frequent in males than females (2:1).[4] They commonly develop during adolescence and gradually enlarge over the years, in maxillofacial region most frequent reported incidence is between 29.4 and 40.5 years.[1]

In maxillofacial region, osteomas documented in sinuses, external auditory canal, orbit, temporal bone, pterygoid plates, and rarely in jaw bones. In mandible osteomas reported in body, anterior region, posterior region, condyle, angle, ascending ramus, coronoid process, and sigmoid notch.[3] In current literature, there are number of cases with osteoma of zygoma, zygomatic arch but no similar case reported of giant osteoma in the zygoma region extending to mandible hindering the mandibular movements causing extra-articular, i.e., pseudo TMJ ankylosis.

Most commonly osteomas are asymptomatic and they are diagnosed incidentally. However, as in present case they may interfere with normal function and cause facial deformity. According to size and location, other reported symptoms are deviation of the mandible on opening, headache, bone pain, dysphagia, or exophthalmos.[1,6]

Differential diagnosis for the present case is ossification in masseter (Myositis Ossificans), osteochondroma of coronoid process (Jacob's disease), ossifying fibroma, or condensing osteitis. Myositis ossificans is a rare heterotopic bone formation within a muscle being the masseter the most frequently affected, mostly preceded by traumatic injuries. Osteochondroma of coronoid process also has similar features but it forms pseudo joint with inner surface of zygoma and capped with cartilage. Ossifying fibroma is a fibro-osseous lesion, affects both the jaw, consisting of highly cellular, fibrous tissue that contains varying amounts of calcified tissue resembling bone, cementum, or both. Condensing osteitis is a pathologic growth of maxillomandibular bones reflecting the impaired bone rearrangement in response to mild infection of dental pulp characterized by mild clinical symptoms.

Depending on location, conventional regional radiograph and histopathological examination are enough to diagnose osteomas and to differentiate above-mentioned conditions but for proper surgical planning CT scan or CBCT is recommended.

Due to lack of reported incidence, as in current situation, such cases are misdiagnosed as TMJ disorders and treated as accordingly. TMJ disorders also has some similar symptoms but associated with severe pain. In the present case, deviation on left side, reduced inter-incisal MO, bony growth, and CT findings provisionally diagnosed it as osteoma which was confirmed by histopathology.

Osteomas are normally self-limiting and no treatment is required. Although, sometimes they may grow to several centimeters and show adverse symptoms as mentioned above which mandates surgical removal or shaving of bony mass. Recurrence and malignant transformation of such lesion is very rare.[1] However, patient is still in growing stage so we kept him on regular follow-up and vigorous MO exercises and this is advised for such patients.

CONCLUSION

"Osteoma in its present location can be similar to TMJ ankylosis in clinical presentations, but radio-graphic appearances of the two conditions are very different and characteristic. Identification of these radiographic features, preferably in CT or CBCT is helpful to prevent misdiagnosis. We also suggest that the osteoma in our case is of developmental origin in the absence of other relevant causes."

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