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A SILENT EXPANDER: RARE OSSIFYING FIBROMA OF MAXILLA, A CASE SERIES

Otorhinolaryngology

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ABSTRACT

Ossifying fibroma (OF) is a benign fibro-osseous tumour that commonly involves the maxilla, though it can also affect the mandible. This lesion is characterized by the presence of fibrous tissue mixed with varying amounts of mineralized material, including bone and cementum-like substances. The precise cause of ossifying fibroma is not well understood, but genetic, developmental, and possibly traumatic factors have been suggested. The condition typically presents with symptoms such as asymmetrical facial swelling, a palpable mass, or tooth displacement, though it is often asymptomatic in its early stages. On imaging, OF appears as a well-defined, expansile radiolucency with varying degrees of calcification, which can sometimes give it a characteristic "soap bubble" appearance. Histologically, the lesion contains a combination of dense fibrous tissue and areas of mature bone or cementum-like material. Surgical excision is the primary treatment approach, offering a high rate of complete removal and low recurrence. This article reviews the clinical, radiological, and histopathological features of ossifying fibroma of the maxilla, discussing its management and prognosis.

KEYWORDS

Ossifying Fibroma; Bone; Benign; Maxilla; Mandible

INTRODUCTION

Ossifying fibroma (OF) is a benign fibro-osseous lesion that typically arises within the jaws, with the mandible being more commonly affected than the maxilla. However, the occurrence of OF in the maxillary region, although less frequent, presents unique clinical and diagnostic challenges. This lesion is characterized by a proliferation of fibrous tissue with varying amounts of mineralized material, such as woven bone or cementum-like structures. Most cases of OF are asymptomatic in their early stages, leading to a slow, progressive enlargement of the affected bone, often without pain. This lack of clinical symptoms during the early stages contributes to a delayed diagnosis, with the lesion often detected incidentally during routine dental radiographs or clinical examination.(1)

Histopathologically, ossifying fibroma is a well-demarcated lesion with a fibrous stroma containing varying amounts of osteoid or bone-like structures. These structures may resemble either immature bone or a cementum-like material, depending on the specific subtype of the lesion. In addition to its fibrous and mineralized components, the lesion may also show areas of cellularity, with fibroblasts and osteoblasts in varying proportions. While OF is typically benign, its growth can lead to facial asymmetry, displacement of teeth, and, in severe cases, damage to adjacent structures such as the sinuses or the orbit. Surgical intervention remains the treatment of choice, with complete excision of the lesion offering the best chance for a favorable outcome. (2)

Clinical Presentation and Diagnosis

The clinical presentation of ossifying fibroma in the maxilla can be subtle, often manifesting as a painless swelling or bulging of the affected area. As the lesion progresses, patients may begin to notice facial asymmetry or displacement of adjacent teeth, particularly in the posterior region of the maxilla. In rare cases, maxillary OFs may involve the maxillary sinus, leading to symptoms such as nasal obstruction or sinus infections. Radiographically, OFs typically appear as well-circumscribed, radiolucent lesions with varying degrees of radiopacity due to the presence of mineralized tissue within the tumor. The differential diagnosis of ossifying fibroma includes other fibro-osseous lesions like fibrous dysplasia, cemento-ossifying fibroma, and odontogenic tumors. However, the distinct combination of radiographic, clinical, and histopathological features helps to differentiate OF from these other conditions. (3)

Histopathology and Subtypes

Ossifying fibromas of the maxilla, like those of the mandible, are classified based on their histological composition and growth pattern. The lesion may present in two main subtypes: the trabecular and the desmoplastic types. The trabecular subtype is characterized by a loose fibrous stroma interspersed with trabeculae of bone, often appearing as a more well-defined, radiolucent mass. In contrast, the desmoplastic subtype shows a denser, more collagenized stroma with areas of mature bone formation, making it radiographically denser and more difficult to differentiate from other ossifying lesions. Despite these variations, the lesion's consistent histological features—fibrous tissue with mineralized bone or cementum-like material—remain the hallmark of an ossifying fibroma diagnosis. Immunohistochemical analysis and molecular studies are being explored to better understand the biological behavior and potential for recurrence.(4)

Management and Prognosis

The treatment of choice for ossifying fibroma in the maxilla is complete surgical resection. Given the benign nature of the tumor, local excision is generally sufficient to ensure a favorable prognosis. The goal of surgery is to remove the tumor in its entirety, preserving as much of the surrounding healthy bone and soft tissue as possible. In some cases, depending on the size and location of the lesion, reconstructive procedures may be necessary to restore normal function and appearance. Recurrence of ossifying fibroma is rare but has been reported, particularly in cases where the lesion was incompletely excised or if the lesion was unusually aggressive. The overall prognosis for patients with maxillary OF is excellent, and long-term follow-up is usually recommended to monitor for any signs of recurrence or complications.(1)

This case series describes an uncommon presentation of Ossifying Fibroma in maxilla in 2 adult male patients.

CASE

Case 01

A 40 year old male patient residing in Mumbai came with complaint of mass near right upper teeth since 1 year.Patient had difficulty in mastication due to the presence of mass.

On examination of oral cavity a 3x2 cm mass arising from alveolus of right upper 1st premolar (Fig 1.1). Swelling was hard, non tender, with uneven surface and skin over the swelling was normal with no proliferative or ulcerative growth attached to the alveolus with a narrow base. Minimal buccal and palatine extension of the swelling was present. Regional lymph nodes were not palpable.

Radiological evaluation was done, Computed tomography showed hyperdense well defined radio opaque expansive lesion on the left maxilla involving the upper 1st premolar. (Fig .1.2)

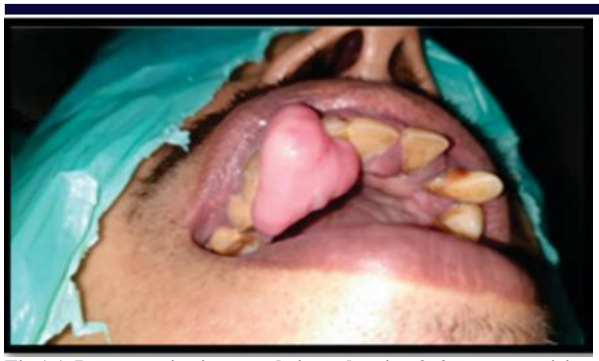

Fig 1.1. Pre operative intraoral view showing 3x2cm mass arising from alveolus of right upper 1st premolar

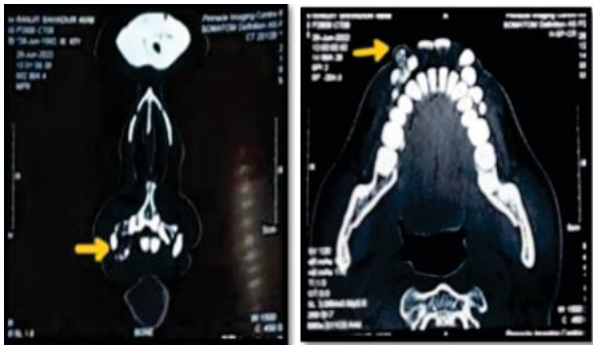

Fig 1.2 Pre-operative CT Scan showing lesion with well defined lesion and involvement of alveolus.

Surgical excision of the lesion was done under Local anaesthesia, mass was cut at the base from alveolus, with minimal bleeding controlled with pressure. Sample was sent for Histopathological evaluation.(Fig 1.3)

Histopathology report revealed a nodule comprised of spicules of osteoid rimmed by osteoblasts and separated by fibroblastic and collagenous stromatolites with inflammatory infiltrate suggestive of Ossifying Fibroma (Fig 1.4)

Fig 1.3 Post-operative view after excision of lesion under local anaesthesia

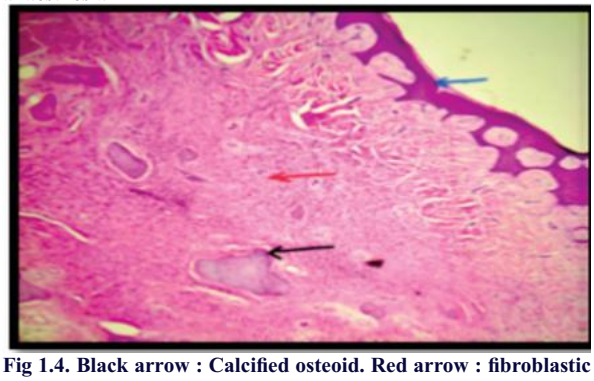

Fig 1.4. Black arrow : Calcified osteoid. Red arrow : fibroblastic stromatolites. Blue arrow: stratified epithelial of buccal mucosa

Case 02

70 year old male patient presented with complaint of Right upper alveolar mass since 6 months. Patient had history of tobacco chewing since 20 years. On examination a 4x4 cm lesion was seen in the alveolus of ight upper 2nd molar. Swelling is hard, non tender, with palatine extension (Fig 2.1).Radiology report revealed a well defined dense solid lesion arising from inner cortex of maxilla in region of molars. The lesion measures up to 31x13mm in size. No cortical erosion or calcification was seen and Features were suggestive of Osteoma(Fig 2.2)

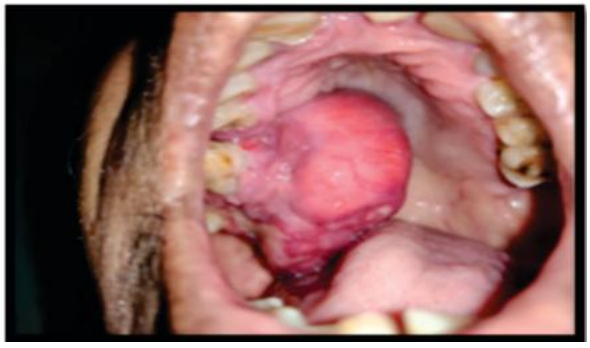

Fig 2.1 Pre operative intraoral view of lesion

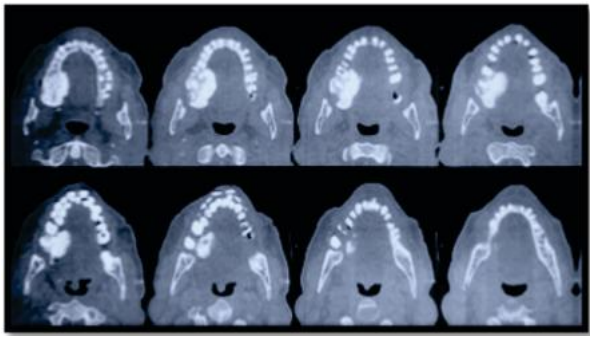

Fig 2.2 Pre Operative CT scan showing Bony opacification involving right upper alveolus and palate (Axial section)

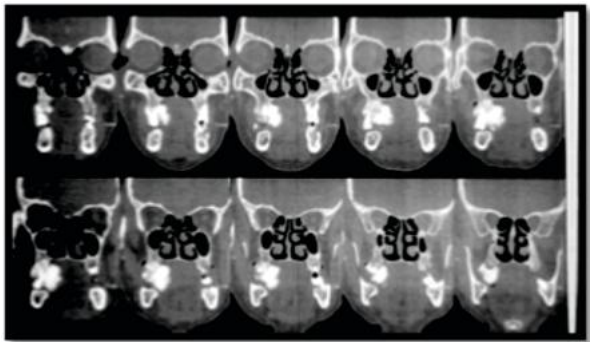

Fig 2. 3 Pre Operative CT scan showing Bony opacification involving right upper alveolus and palate (Coronal section)

Biopsy of sample was suggestive of pseudoepitheliomatous hyperplasia. Patient underwent Infrastructure maxillectomy with excision of lesion under General anaesthesia. (Fig 2.4). Histopathology report was suggestive of Ossifying fibroma (Fig 2.5)

Fig 2.4 Intra operative image showing Excision of mass

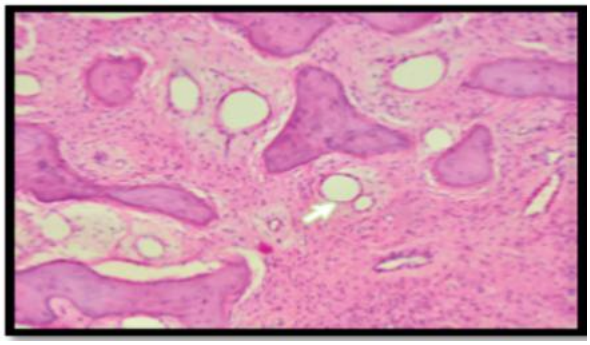

Fig 2.5 Histopathology image suggestive of Ossifying Fibroma

DISCUSSION

Yih et al. and Sciubba et al. attributed the first description of this disorder to Menzel in 1872.(5) Montgomery appears to have been the first to designate jaw lesions of this type as ossifying fibromas, by which the lesion is currently known(6). Lack of standardized terminology and classification of central or intraosseous cemento-osseous lesions of the jaws have long posed a dilemma for histopathologists and clinicians(7). Until 1948 it was believed that fibrous dysplasia and ossifying fibroma were either the same entity or variants of the same lesion. That year, Sherman and Sternberg published a detailed description of the clinical, radiological and histological characteristics of ossifying fibroma, and since then most researchers coincide in considering the two lesions to be different clinical entities(8). Jaffe originally believed these lesions to be monostotic manifestations of fibrous dysplasia, although 5 years later he considered the ossifying fibroma, which he called fibrocementoma, as a separate entity from fibrous dysplasia (9).

In the 2017 WHO classification of head and neck tumors, ossifying fibroma is divided into three clinicopathologic entities: ossifying fibroma of odontogenic origin, which affects exclusively the tooth-bearing bone of mandible and, more rarely, maxilla; juvenile trabecular ossifying fibroma, mostly occurring in the alveolar process of the maxilla, while extragnathic localization is exceedingly uncommon; and juvenile psammomatoid ossifying fibroma, which originates mostly from the fronto-orbital and ethmoid bones (10)

Differential diagnosis of ossifying fibroma depends on the radiographical features of the lesion. Ossifying fibroma with a completely radiolucent lesion may be misdiagnosed as cemento-osseous dysplasia (early stage), odontogenic cyst, periapical granuloma, traumatic bone cyst, ameloblastoma or central giant cell granuloma. Differential diagnosis for mixed radiographical feature may include a non-specific diagnosis of fibro-osseous lesion, calcifying odontogenic cyst (Gorlin cyst), adenomatoid odontogenic tumor, rarefying and condensing osteitis, cemento-osseous dysplasia, calcifying epithelial odontogenic tumor (Pindborg tumor), odontogenic fibroma or ameloblastic fibro-odontoma. Furthermore, ossifying fibroma with completely radiopaque radiographical features may be misdiagnosed as retained root, odontoma, idiopathic osteosclerosis, condensing osteitis, cemento-osseous dysplasia (late stage) or osteoblastoma. In addition, ossifying fibroma with a very large size may be misdiagnosed as osteogenic sarcoma (11)

REFERENCES

1. Praetorius, F., et al. (2005). "Ossifying Fibroma: A Review of the Literature with Emphasis on its Classification." *Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology*.
2. Kaffe, I., et al. (1996). "Ossifying Fibroma of the Maxilla: A Review of 8 Cases." *Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology*.
3. Neville, B. W., et al. (2016). "Oral and Maxillofacial Pathology." *Elsevier Health Sciences*.
4. Buchner, A., et al. (2006). "Fibro-osseous lesions of the jaw: A comprehensive review of the literature." *Journal of Oral Pathology & Medicine*.
5. Yih WY, Pederson GT, Bartley MH. Ossifying fibroma: Clinicopathologic study. *Oral Surg Oral Med Oral Pathol*. 1989;68:63-72.
6. Montgomery AH. Ossifying fibroma of the jaw. *Arch Surg*. 1927;15:30-44.
7. Slootweg PJ. Maxillofacial fibro-osseous lesions: Classification and differential diagnosis. *Semin Diagn Pathol*. 1996;13(2):104-112.
8. Sherman RS, Sternberg WC. Roentgen appearance of ossifying fibroma of bone. *Radiology*. 1948;50:319-325.
9. Jaffe HL. Fibro-osseous lesions of bone. *Arch Pathol*. 1953;56:523-540.
10. El-Mofty SK, Nelson B, Toyosawa S. Ossifying fibroma. In: El-Naggar AK, Chan JKC, Grandis JR, Takata T, Slootweg PJ, editors. *WHO Classification of Head and Neck Tumours*. 4th ed. Lyon: IARC Press; 2017. p. 251-252.
11. Mainville GN, Turgeon DP, Kauzman A. Diagnosis and management of benign fibro-osseous lesions of the jaws: A review. *Oral Dis*. 2017;23(4):440-450.