

## **Ossifying Fibroma- A Case Report**

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**ABSTRACT:** Ossifying fibromas is a rare, benign fibro-osseous neoplasm of the jaw characterized by substitution of normal bone by fibrous tissues and newly formed calcified products such as bone, cementum or both and is thought to originate from the periodontal ligament. It is a well-demarcated lesion that can be differentiated from fibrous dysplasia. The overlapping clinical and histopathological features of these subtypes have led to diagnostic dilemma and confusion. Hereby, we report a rare case of ossifying fibroma arising in the maxilla of a 55-year-old female patient together with histologic and imaging findings.

**Keywords:** Ossifying Fibroma; Fibro-osseous lesions; Fibrous dysplasia.

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### **I. Introduction**

Ossifying fibroma is rare non-odontogenic, fibro-osseous tumor affecting both jaws and composed of proliferating fibroblasts and osseous products that include bone and cementum-like material.<sup>1</sup> OF is believed to originate from the multipotential mesenchymal cells of the periodontal membrane surrounding the roots of teeth which are capable of forming cementum, bone and fibrous tissue.<sup>2</sup> It is usually seen in the second to fourth decades of life and it generally shows a female predilection.<sup>1</sup> Mandible is far more commonly involved than the maxilla, especially the premolar and molar region.<sup>3</sup> The clinical presentation of ossifying fibroma is usually a spherical or ovoid, expansive, deforming, painless jaw bone mass that may displace the roots of adjacent teeth and sometimes cause root resorption.<sup>2</sup> Radiographically, OF presents as a well-defined, unilocular lesion which contains varying amounts of radiopaque material.<sup>4</sup> Once it is completely excised, OF does not usually recur.<sup>5</sup> The present paper describes a rare case report of OF in anterior maxilla which clinically mimics Fibrous dysplasia.

### **II. Case Report**

A 55yr old female patient reported to the Department of Oral Medicine and Radiology with the chief complaint of swelling in the upper left back region of jaw since 15yrs and pain since one week. Patient's history revealed that the swelling was peanut in size primarily, which was initially at the left side of the maxilla, which had then gradually increased recently and attained the present size. The pain started since 1 week, was intermittent in nature, aggravated while eating and subsided temporarily on taking analgesics. On extra-oral examination, swelling was evident on left side of the face leading to gross facial asymmetry. The swelling was about 6 x 7 centimeter in size. The swelling was hard in consistency. On palpation, mild tenderness was noted. (Fig.1) Patient presented with restricted mouth opening and intraoral examination revealed 3 well defined nodular swellings which were seen in the left maxillary region.

Two swellings were seen over the anterior aspect of the hard palate and one in the left maxillary buccal vestibule. The swellings over the anterior aspect of the hard palate extended mediolaterally from midline of the palate, 2mm short of palatal gingival margin of maxillary left central incisor up to second premolar and anteroposteriorly from mesial of upper left central incisor to second premolar and were approximately 4 × 5 cm and were roughly oval in shape.

The mucosa over the swelling was intact and pale pink in colour with no secondary changes. The swelling of the maxillary buccal vestibule was ill defined, extending anterioposteriorly from the distal aspect of maxillary left lateral incisor till the distal aspect of second molar and had caused obliteration of the entire labial and buccal vestibule. The swelling was accompanied by marked buccal displacement of left first premolar.

On palpation, mild tenderness was noted and swelling was hard in consistency. There were no palpable cervical or submandibular lymph nodes. Expansion of the buccal and the lingual cortical plates was seen over that region. (Fig. 2)

Radiological investigations including an intraoral periapical radiograph, occlusal and panoramic radiograph of the lesion showed a large, well circumscribed, mixed radiopaque –radiolucent lesion extending from maxillary left canine to mesial of maxillary left second molar. The lesion was accompanied by marked distal and superior displacement of first premolar. (Fig 3) Axial CT images showed a mass containing diffuse

calcification foci, which extended from the left anterior region to the lateral maxilla horizontally and vertically from the alar region to below the occlusal plane. (Fig 4)

A trephine incisional biopsy was performed and the specimen was sent to the pathology. Histopathological examination revealed a tumor composed of bundles of spindle fibroblastic cells containing spherical and small bone spicules. Around the bone spicules, osteoblasts were present. These findings along with clinico-radiological observations were consistent with Ossifying fibroma of the upper jaw.



**Fig 1:** Facial swelling on the left side leading to facial asymmetry.



**Fig 2:** Clinical photograph showing pedunculated nodular growth in the upper left vestibular region.

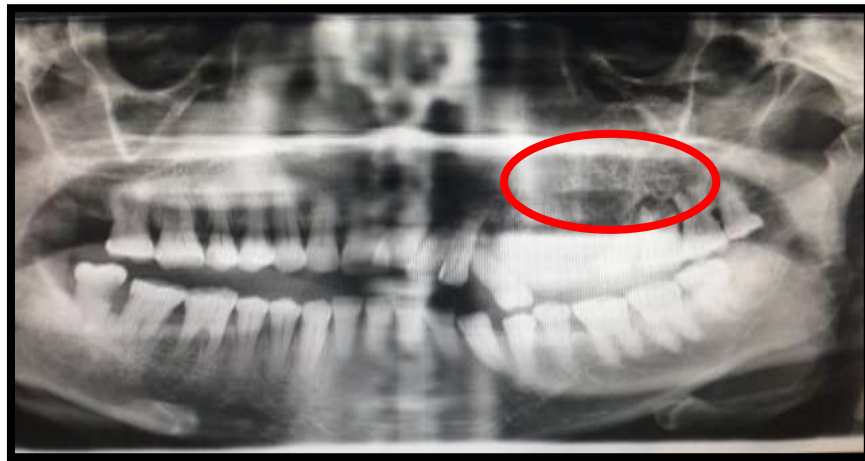


Fig 3: An orthopantomograph showing a large, well circumscribed mixed radiopaque-radiolucent lesion on the left side of maxilla.

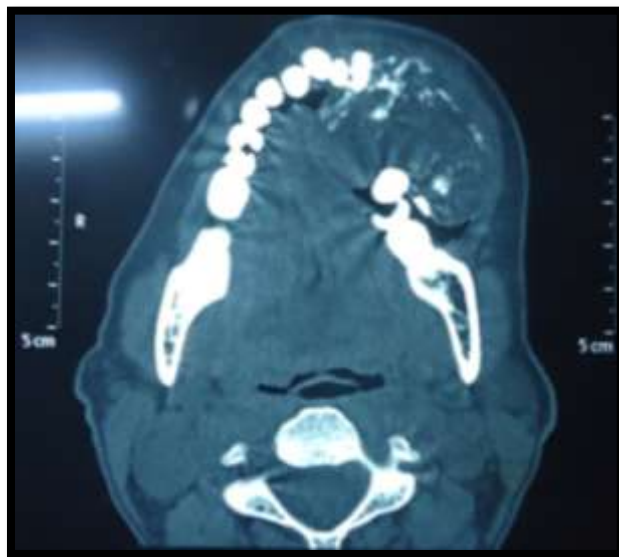


Fig 4: Axial bone window images showing a buccal expansile mass with diffuse calcification foci extending from the left anterior to the lateral maxilla region.

### III. Discussion

In 1872, Yih *et al.*<sup>6</sup> and Sciubba *et al.*<sup>7</sup> attributed the first description of ossifying fibroma to Menzel. Montgomery<sup>8</sup> appears to have been the first to designate jaw lesions of this type by the term ossifying fibromas. Ossifying fibroma of the jaws usually occurs in second to fourth decades of life, in our case, patient was 55-year old. With regard to the location of the lesion, mandible is 4 times more commonly involved than the maxilla. Our case is rare as it is located in the anterior part of maxilla. Some authors have attributed the reasons of trauma in the area of the lesion, the performance of tooth extractions, and the prior existence of periodontitis, as possible triggering factors.<sup>9</sup>

Regarding the clinical symptoms of OF, MacDonald-Jankowski reported that the main symptom is the swelling involving deformation of the jaws (66%) and 84% of patients displayed expansion of the bucco-lingual

cortical plates.<sup>5</sup> Our patient's swelling was larger than those reported in the previous articles because she did not seek medical attention for 10 years. OF are slow-growing lesions and because of the slow growth, the cortical plates of the bone and the overlying mucosa or skin are invariably intact. Ossifying fibromas are usually solitary, but bilateral as well as multiple familial ossifying fibromas have also been reported.<sup>6</sup> Root divergence, displacement of teeth in the tooth-bearing region or root resorption may be associated with the tumor.<sup>5</sup> In the present case the lesion was accompanied by marked distal and superior displacement of first premolar. There was no evidence of root resorption in any tooth. MacDonald-Jankowski described three stages in the radiographic appearance. Initially the lesion is radiolucent (osteolytic image), which then becomes progressively radiopaque as the stroma mineralizes thus giving it a mixed appearance. Eventually, the individual radiopacities coalesce to form mature lesion may appear sclerotic or radiopaque lesion.<sup>10</sup>

Su et al.<sup>3</sup> stated that OF presents as a well defined radiolucency with or without a sclerotic margin, and often accompanied by cortical expansion. Another important diagnostic feature is centrifugal growth pattern rather than linear one and therefore the lesion grows by expansion in all directions and therefore present as a round mass. Large maxillary tumors may involve the nasal septum, orbital floor and infraorbital foramen. Maxillary OFs are large at the time of presentation, indicating the ability of the tumor to expand freely within the maxillary sinus. In mandible, the expansion of the tumor results in the displacement of the mandibular canal.<sup>11</sup> Advanced imaging modality like computed tomography with the bone window technique is an essential diagnostic aid, especially in extensive cases as it delineates the extent of the tumor and the destruction caused by it in the surrounding tissues. OF consists of fibrous tissue with varying degrees of cellularity. Peripheral osteoid and osteoblastic rimming are usually present.

The treatment of choice for OF is surgical excision. Small and well demarcated lesions can be excised by enucleation and curettage, whereas larger lesions, that show a more aggressive pattern, especially in the maxilla, require radical surgery within healthy margins. Recurrence rate varies from 6% to 28% of patients with mandibular OFs.<sup>3,7</sup> The recurrence rate of maxillary OFs is unknown, but it is likely to be higher because of the greater difficulty of their surgical removal and larger size at the time of presentation. If relapse is identified in the course of follow-up, conservative resection is oblige.

#### IV. Conclusion

Early detection and complete surgical resection of these lesions followed by long term follow-up bear importance in clinical management. Therefore a proper correlation of the clinical, radiological and the histological features is necessary for establishing a definitive diagnosis.

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