

Central Odontogenic Fibroma of Maxilla –A Case Report



Dental Science

KEYWORDS : odontogenic fibroma, maxilla, benign tumour.

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ABSTRACT

Odontogenic fibroma (OF) is a very rare benign Odontogenic tumor characterized by various amounts of Odontogenic epithelium in a mature fibrous stroma.2,3. Two variants can be distinguished: an intraosseous or central OF (COF) and an extraosseous or peripheral 2,3. The intraosseous variant is an extremely rare tumor that presents clinical, radiographic, and histopathologic variable findings 2,3,4,13. We present a case of central Odontogenic fibroma in 15 year old child in maxilla. We present brief description and discussion of the case reported in maxilla and mandible.

Introduction

The Odontogenic fibroma (OF) has been described as a benign Odontogenic tumor characterized by varying amounts of Odontogenic epithelium in a mature fibrous stroma². The term OF is applied to 2 histologic types: an epithelium poor (simple type) and an epithelium-rich or World Health Organization type (complex or WHO type) . Two

variants can be distinguished: an intraosseous or central OF (COF) and an extraosseous or peripheral type . Central OF is a rare tumor that accounts for 0.1% of all odontogenic tumors^{4,5,6}. Although initial reports indicated a slight predilection for the mandible, recent studies have reported equal proportions of cases in maxilla and mandible^{4,5,6,13}. In the maxilla, the lesion appears frequently to involve the anterior region, whereas in the mandible, the lesion tends to be in the posterior area^{4,5,6}. Clinically, it appears as a painless swelling often with cortical expansion and shows radiographic characteristics variables with a prevalence of unilocular radiolucent lesions, and it is well circumscribed. Most patients have been treated by conservative surgical excision, and neither local recurrence nor malignant transformation has been reported^{1,4}.

Case report:

A 15 year old boy with noncontributory medical, family and social history was referred to dept. of oral and maxillofacial surgery, faculty of dental science, KGMU with complain of swelling over right side of face since 6-7 months which was slow in growth and was painless. through clinical examination facial asymmetry was present due to swelling over right side face app 6x6 cm in size and was extending from right infraorbital margin to right side corner of mouth superoinferiorly and from right side preauricular region to right ala of nose anteroposteriorly with normal skin in temperature and appearance which was non fluctuant non pulsating non tender with no cervical lymphadenopathy. Intraoral examination show swelling in relation to right lateral incisor to right 1st molar with normal mucosa, teeth were mobile.



Fig 1:Frontal view showing swelling over right side of the face



Fig 2: Right lateral profile with massive swelling over maxilla.



Fig 3: Intra-oral view showing extension of the swelling.



Fig 4: Axial CT Showing extension of lesion into the right maxillary sinus.

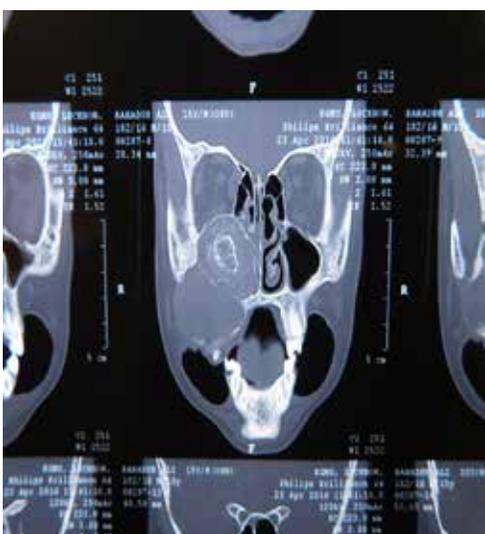


Fig 5: Coronal CT Showing extension into right maxillary sinus and nasal apparatus along with expansion of the palate and buccal cortices.

NCCT face (axial and coronal) showed multilocular radio-lucent lesion with complete ossification of maxillary sinus and calcification foci present in the center.

adenomatoid Odontogenic tumor, ossifying fibroma, calcifying epithelial Odontogenic tumor, fibrous dysplasia, Cherubism, Ameloblastic fibroma were consider as clinical and radiological differential diagnosis. incisional biopsy was performed and suggestive histopathological diagnosis of central Odontogenic fibroma was made. under general anesthesia intraoral incision was given, lesion was exposed and whole lesion was removed in Toto. the surgical specimen was fixed in 10% formalin and submitted to histologic examination.



Fig 6: exposure of the lesion via intraoral vestibular approach.



Fig 7: excision of the lesion done in toto.

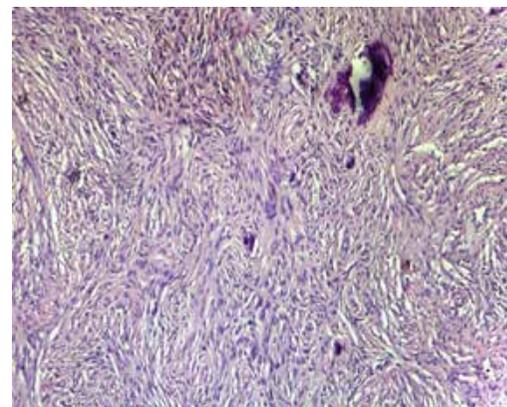


Fig8: H&E Stain microscopic view (40x)

section shows fairly cellular fibrous connective tissue with collagen fibers arranged in interlacing bundles calcification composed of cementoid fragments are evident throughout the lesion.

Central OF is an extremely rare tumor of the oral cavity, accounting 0.1% of all Odontogenic tumors⁴ However, Buchner et al⁶ noted in their study 1.5% of 1.088 cases of central Odontogenic tumors. The pathogenesis of OF is still unclear, and whether OF represents a peculiar reactive process (hamartoma) or a neoplasm has not been completely established in the literature¹. According to Covani et al,⁹ the COF is believed to originate from mesenchymal Odontogenic tissue, that is, dental papilla, periodontal ligament, or dental follicle. Considering the histogenesis of the lesion in the WHO classification², it has been suggested that the epithelium-poor type of COF is derived from the dental follicle, whereas the epithelium-rich type arises from the periodontal ligament. At present, <100 cases (including this case) of COF have been reported in the jaw bones. Most clinical and radiographic information was collected from 51 diagnosed cases of COF reported by In 7 years, 9 cases were found. Most of COFs have been observed in those aged 4 to 80 years, with a peak incidence in the second decade of life in 21 cases. Regarding sex, initially, there were a higher number of cases in female patients with a female/male ratio of 3:1¹. However, recent analysis shows a female/male ratio of 1.8:1^{5,6,7,8}. This lesion was originally thought to occur almost exclusively in the mandible³; however, there were changes in epidemiologic profile. It was observed that there was a tendency of equal distribution between maxilla and mandible sites. However, when evaluating by location, this lesion was mostly found in the posterior mandible and anterior maxilla.

Clinically, COF manifests as a painless swelling and has a slow growth that results in cortical expansion^{1,2,4,7,8}. Moreover, several clinical cases showed the presence of diastema due to the dislocation of the adjacent teeth and, sometimes, root resorption⁹. Clinical symptoms such as pain and paresthesia are uncommon⁴. In the present case, the lesion presented a slow persistent growth that resulted in a painless cortical expansion.

Radiologically, COF can show radiolucent or mixed findings^{5,7}. According to most cases, COF are radiolucent, unilocular, and with well defined borders^{1,4,5,6,13}. The radiographic features of the COF are similar to other radiolucent lesions, such as traumatic bone cyst, Ameloblastoma, Odontogenic cysts, and central giant cell granulomas^{1,9} and hence, these lesions should be considered for differential diagnosis. The present case has similar characteristics with the report of Covani et al⁹ because the radiographic examination showed a multilocular radiolucent lesion between the lateral incisor and first molar with well-defined borders, such as the central ossifying fibroma or lateral periodontal cyst. Daniels¹ reported that the larger COF tends to be scalloped margins or multilocular, and it may occasionally be associated with root resorption of associated teeth. These features appear in the presented case. Araki et al¹⁰ reported that the diagnosis of COF by radiographic findings is extremely difficult, especially when the lesion is associated with a crown of the unerupted tooth that might resemble a dentigerous cyst.

The current treatment of choice for COF is conservative surgery (enucleation). The recurrence is uncommon and the prognosis is good^{1,9}. According to Covani et al⁹ COF is usually easily removed, not showing any adherence to bone and/or to tooth structure as seen in their

clinical case. The presence of of myofibroblast and macrophages can be affiliated to the potential aggressiveness of OF, however immuno- histochemical and electron microscopic analysis can lead to better understanding of this unusual odontogenic tumour.

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