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Case Report

PERIPHERAL CEMENTOOSSIFYING FIBROMA IN MAXILLARY REGION – A CASE REPORT

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ABSTRACT
Cemento-ossifying fibroma (COF) is a relatively rare, benign, nonodontogenic tumor of the jaw, a subdivision of fibro-osseous lesions, arising from periodontal ligament and is usually seen in tooth bearing area. Age of occurrence is between 20 to 40 years. Female to male ratio is 5:1. It can affect both the mandible and the maxilla with affinity for posterior mandible region. This bone tumour consists of highly cellular, fibrous tissue that contains varying amounts of calcified tissue resembling bone, cementum or both. The aim of this paper is to evaluate a classical case report of peripheral cemento-ossifying fibroma with discussion of review of literature.

Keywords: *Peripheral Cementoossifying Fibroma, Benign and Malignant Tumors, Maxilla, Non Odontogenic Tumour*

INTRODUCTION
Cemento-ossifying fibroma is defined by WHO as a demarcated or rarely encapsulated neoplasm consisting of fibrous tissue containing various amounts of mineralized material (bone and/ or cementum). Most frequently occurs in female (female: male = 5:1) with age range of 10 to 59 years. They arise in the mandible in 62 to 89% of the patients, 72% occurring in the premolar region, 22% can be found involving molar region of maxilla, ethmoidal and orbital regions and is seen exceptionally in petrous bone. When this arises in children, it has been named the Juvenile aggressive COF, which presents at an earlier age and is more aggressive clinically and more vascular at pathological examination (Jayachandran, 2010). Cemento-ossifying fibroma (COF) is a relatively rare, benign, nonodontogenic tumor of the jaw. It is a subdivision of fibro-osseous lesions, arising from periodontal ligament and is usually seen in tooth bearing area. Age of occurrence is between 20 to 40 years. Female to male ratio is 5:1. It can affect both the mandible and the maxilla with affinity for posterior mandible region. This bone tumour consists of highly cellular, fibrous tissue that contains varying amounts of calcified tissue resembling bone, cementum or both.

CASES
A 29 year old male patient reported to department of periodontics of Kamineni Institute of Dental Sciences with chief complaint of an intra-oral painless gum swelling in the upper left posterior region of the jaw since 3 months. He noticed the swelling accidentally due to repeated food lodgment in the maxillary premolar legion.
The swelling progressively increased in its size although it was painless and hence the patient seeked medical advice. He did not give any history of bleeding nor dental trauma. His family history was insignificant. No significant medical history was present.
On inspection, an intra-oral swelling was noted in relation to maxillary left premolar region measuring about 3mm x 3.5mm (Figure 1, 2).
Oral mucosa appeared normal. On Palpation, the swelling was firm to hard in consistency, there was no bleed no local rise in temperature and it was not tender.
There was no mobility of adjacent premolar teeth. The lesion was extending from the gingival margin upto mucogingival junction.

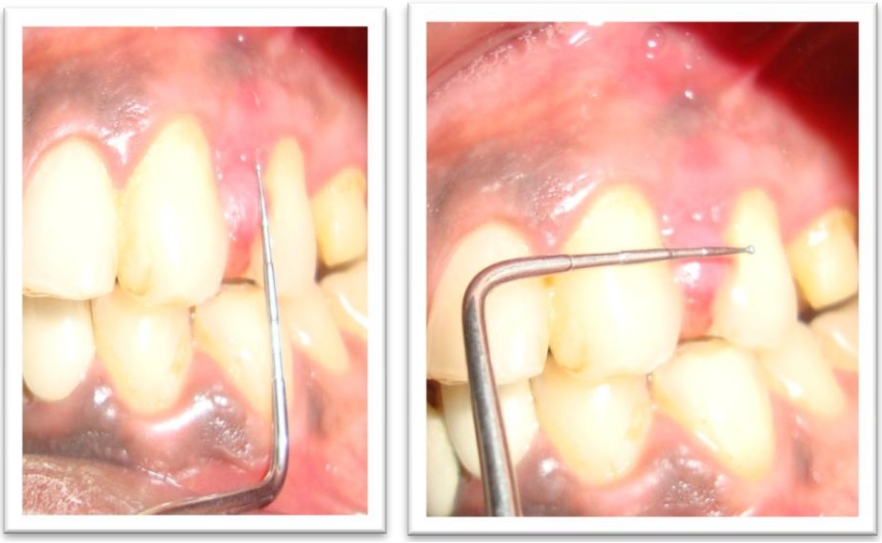

Figure 1a and 1b: Gingival mass measuring 3*3.5mm size

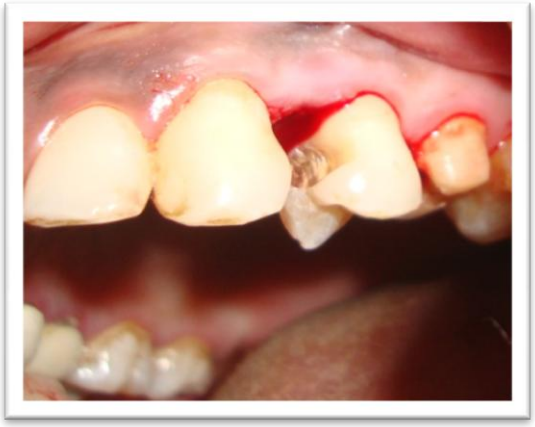

Figure 3: Post surgical excision showing carious lesion beneath the swelling

The patient was further investigated with Orthopentamograph. It revealed no bony involvement. Radiographs showed central radioopaque areas surrounded by radiolucency. A probable diagnosis of peripheral ossifying fibroma was made. Surgical excision was done under aseptic precautions. The lesion was well circumscribed (Figure 3). Beneath the lesion there was dental caries in the first premolar tooth. Hence the carious lesion was excavated and filled with Glass ionomer cement (Figure 4).

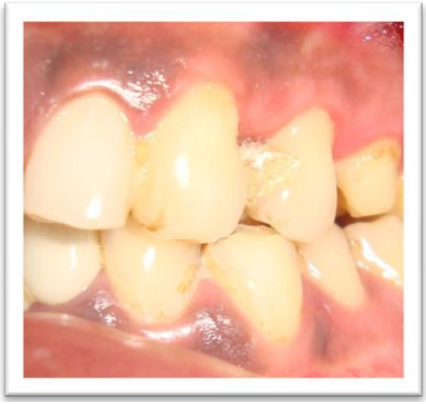

Figure 4: Carious lesion restored with Glass ionomer cement

The excised biopsy sample was sent for histopathological examination. It was reported to have mixed collagen and bony tissue. Scattered foci of calcifications or cementoid like areas with high cellular connective tissue stroma were seen. Spindle-shaped cells were present in stroma. Stratified squamous epithelium was present in tissue (Figure 5a, 5b). This confirmed the diagnosis of peripheral cementoossifying fibroma. Postoperatively the patient was followed up after three months. There was no local recurrence of lesion.

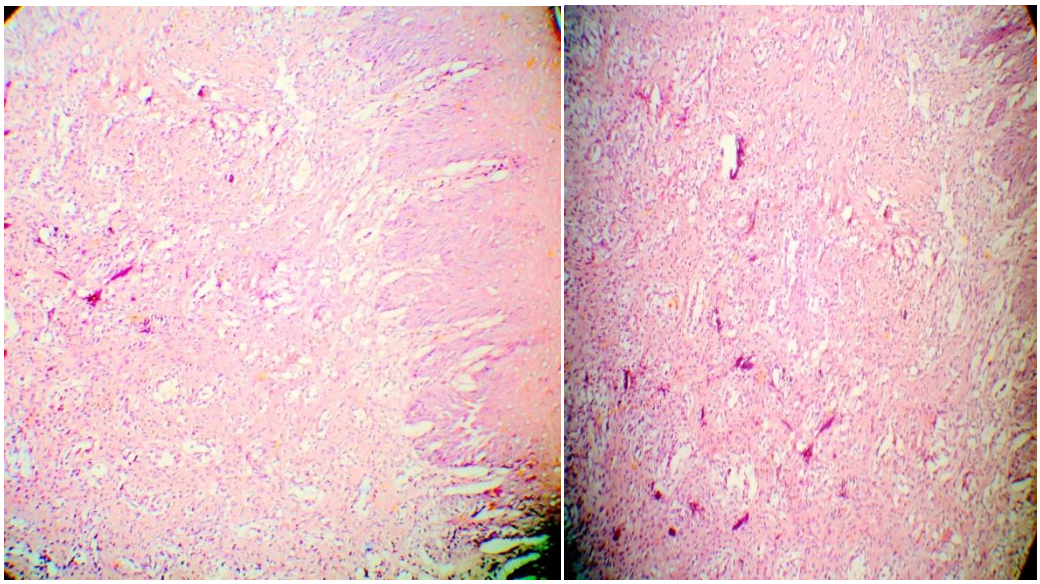

Figure 5: (a) On left showing Peripheral COF with stratified squamous epithelium, (b) on right shows high cellular connective tissue stroma with mixed collagen and bony tissue. Scattered foci of calcifications or cementoid like areas seen

DISCUSSION

Central cementoossifying fibromas are a distinct from of benign fibroosseous lesions of the facial skeleton. Majority occur in maxilla and mandible although some cases occurring in like gingival and adjacent structures. These are referred as peripheral cementoossifying fibroma. They usually present between third and fourth decades of life. They are thought to arise from the periodontal ligament and are composed of varying amounts of cementum, bone and fibrous tissue. They are reactive rather than neoplastic and their origin appears to be uncertain (Amit, 2013). Recurrence rate is almost 8.9% to 28%. They are generally asymptomatic and are not diagnosed until the tumor calcifies and expands. Usually condition is painless but if a nerve is involved there can be pain. It is a relatively slow growing tumor and because of this, the cortical plates of bone and overlying mucosa or skin are almost invariably intact. Growth of the tumor will be usually in centrifugal manner (Kunal, 2012). Central cementoossifying fibromas are well-circumscribed, radiolucent lesions with scattered radioopaque foci. They expand and may or may not involve cortical bone. Maxillary central cementoossifying fibromas tend to display a greater degree of immaturity than that seen in mandibular lesions (Sreenivasan, 2010). The differential diagnosis includes chondrosarcoma or osteosarcoma, fibrous dysplasia, odontogenic cysts, squamous cell carcinomas, calcifying odontogenic cysts (Gorlin cysts), and calcifying epithelial odontogenic tumors (Pindborg tumors) other lesions that contain mixed radiopacities and radiolucent areas. The recommended treatment of the central cementoossifying fibroma is excision. The entire tumor should be removed including involved regions of the orbital floor and maxillary sinus walls. This may be attributable to the difference in bone character between the mandible and maxilla ant to the available apace for expansion in the maxillary sinus (Sreenivasan, 2010). Since it is low vascularized and well-circumscribed, it is easy to remove it from the surrounding bone. Prognosis is good (Jayachandran, 2010). The term ‘‘ossifying

fibroma'' has been used since 1927, and since 1968 cementum-containing tumours have been grouped together. In 1971 the World Health Organization (WHO) classified four types of cementum- containing lesions: fibrous dysplasia, ossifying fibroma, cementifying fibroma and cemento-ossifying fibroma. According to the second WHO classification, benign fibro-osseous lesions in the oral and maxillofacial regions were divided into two categories, osteogenic neoplasm and non-neoplastic bone lesions; cementifying ossifying fibroma belonged to the former category. However, the term ''cementifying ossifying fibroma'' was reduced to ossifying fibroma in the new WHO classification in 2005. The origin of OF is thought to be the periodontal membrane. Some OFs do, in fact, contain prevalent cementum-like calcifications and others show only bony material, but a mixture of the two types of calcification is commonly seen in a single lesion (Liu, 2010).

Mandible is the most commonly involved site, typically inferior to the premolars and molars. Although MacDonald-Jankowski considered that radiological diagnoses was not difficult for specialist radiologists, not all radiological diagnoses in the reports were in accordance with the final histological diagnoses. In his review MacDonald-Jankowski, reported that the radiology 9of the OF in contrast to fibrous dysplasia is well defined and round or oval in shape. But, in fact OF may present as irregular in shape, especially if the tumour recurs or grows quickly in a short period. OF requires radical surgery because of the tendency for recurrence and possibility of malignant transformation. It is known, most OFs, once completely excised, do not recur.

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