

Occurrence of Oversized Peripheral Cemento Ossifying Fibroma in the Gingival Region of all the Molars - A Case Report

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Abstract

Peripheral cemento ossifying fibroma is a reactive gingival overgrowth whose pathogenesis is uncertain, mostly originating from the superficial periodontal ligament. It is commonly associated with irritant agents such as calculus, bacterial plaque, orthodontic appliances, ill-adapted crowns, and irregular restorations. Clinically PCOF appears as sessile or pedunculated mass with colour similar to mucosa. Predominantly occurs in female than males. The present case report describes an unusual presentation of oversized peripheral ossifying fibroma in all the molar regions with bone loss in the relation to the corresponding teeth.

Keywords - Peripheral cemento ossifying fibroma, oral tumours, excisional biopsy, gingival overgrowth

INTRODUCTION

Peripheral cemento ossifying fibroma was 1st described by Menzel in 1872 as ossifying fibroma, and Montgomery assigned its terminology in 1927.[1] It has got a higher incidence among young adults occurs in 2-3 decade of life[2] with females getting affected predominantly.[3] It accounts for 3.1% of all the tumors.[4]

The etiology of peripheral cemento ossifying fibroma has not been well established. But literature suggest that pluripotent stem cells, arising from the periodontal ligament transforms to osteoblasts, cementoblasts or fibroblasts.[5] Constant irritation from calculus, bacterial plaque, ill adapted crown, irregular restorations leads to the enlargement of gingiva.[6,7]

Clinically the surface appears usually smooth with normal coloured mucosa. About 60% of such enlargement appears in maxilla, with more than 50% cases affecting the incisors and canine region (especially in the interdental papilla).[8,9,10] Occasionally large Peripheral ossifying fibroma exhibits foci of calcification which elicit radiopaque changes, however it is not so in all the cases. Reports about variant of peripheral cemento ossifying fibroma in literature, has been very few. We hereby report a unique case of variant of oversized peripheral cemento ossifying fibroma on both maxillary and mandibular gingiva which was developed within a period of 6 months along with bone loss in the corresponding teeth region.

CASE HISTORY

A 42 year old female patient reported to the department of Periodontics, Saveetha dental college, Chennai with the chief complaint of a painless swelling in her upper and lower right and left back teeth region of the jaw for the past 6 months. The swelling initially started in maxillary left posterior teeth region and subsequently involved all the other quadrants. It had started as a small pea sized swelling, which eventually increased its volume to attain the present

size. There was no pain associated with the swelling and patient reported difficulty in biting as the swelling interfered with the occlusion. She also had occurrences of bleeding while brushing. Patient had no history of any systemic diseases, allergy to any medication or occurrence of similar growth in any of her family members. She denied tobacco or alcohol use.



Fig 1) Clinical appearance of peripheral cemento ossifying fibroma extending from premolar to second molar in the second quadrant.

Extra oral examination revealed no gross facial asymmetry, normal mouth opening and significantly palpable submental and submandibular lymph nodes. Intra oral examination revealed pinkish red, sessile, firm, with smooth surface and non-tender growth of 3*3cm extending from the buccal aspect of 23-27 region with grade I mobility in 26 and 27 (Figure 1). A similar growth was present on the premolars and molars of the remaining three quadrants, but was more diffused comparatively smaller in size with smooth surface and not well demarcated from the surrounding gingiva (figure 2).



Fig 2) Clinical appearance of diffuse swelling present in the first and fourth quadrant.

On periodontal examination presence of pocket depth varying from 7mm to 12mm were present in relation to all the molar teeth region and due to the enlarged gingival condition, loss of attachment was not recorded.

Radiographic examination revealed presence vertical bone loss in relation 45,46,35,16 and horizontal bone loss in relation to 14,15,13,25,47 (figure 3). In relation to 16,17 the radiolucency was extending beyond the apex. Clinically pocket depth of 9mm was present with no evidence of caries and traumatic occlusion, mobility was present in relation to 16,17. The teeth responded to vitality check. Since the teeth was found to be vital no endodontic procedures were done and a close follow up done. Upon blood investigation all the haematological values were within normal limit. Based on the clinical and radiographic findings differential diagnosis of traumatic fibroma, peripheral cemento ossifying fibroma, peripheral giant cell granuloma and pyogenic granuloma was made.



Fig 3) Orthopantomogram showing horizontal and vertical bone loss in relation to all the molars.

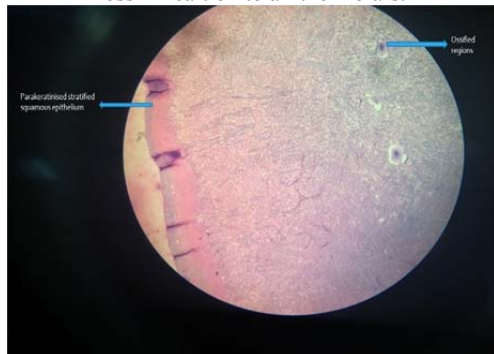


Fig 4) Dense fibrous connective tissue with areas of calcifications, with evidence of foci of minimal inflammatory cell infiltrate and areas of moderate vascularity. Surface epithelium showed parakeratinized stratified squamous epithelium in 10X magnification.

Excisional biopsy of the swelling was planned in the 2nd quadrant, along with samples from the 4th quadrant were sent for histopathological investigation. This was done in order to negate the bias from site variation. Haematoxylin and Eosin stain revealed dense fibrous connective tissue with areas of calcifications, with evidence of foci of minimal inflammatory cell infiltrate and areas of moderate vascularity. Surface epithelium showed parakeratinized stratified squamous epithelium (figure 4). To find the presence of collagen Van Gieson stain was done which stained the ossified region more prominently (figure 5) suggesting diagnosis of peripheral cemento ossifying fibroma.

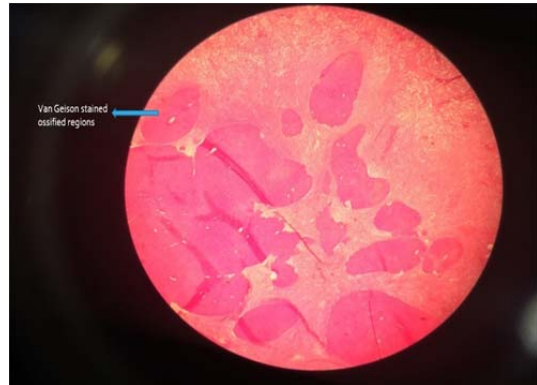


Fig 5) Van Gieson stain showing positive for collagen and ossified areas in the specimen in 40X magnification.

Following biopsy, surgical excision of the swelling performed in all the remaining quadrants by internal bevel gingivectomy. The flap was raised and complete debridement was done in the underlying bone for removal of any periodontal ligament and periosteum. The flap was approximated and sutured with interrupted non-resorbable silk suture. Post-operative instructions and medications were prescribed (Amoxicillin 500 mg t.i.d for 5 days, Ibuprofen b.i.d for 3 days and Ranitidine before food). Patient was advised 0.2% chlorhexidine mouthwash twice daily 3 weeks.

Follow up after 9 months did not show any evidence of recurrence of the lesion (figure 6 and figure 7). 16,17 responded to the vitality check and was asymptomatic at the one year follow up.



Fig 6) Post operative view after 1 year in second and third quadrant.



Fig 7) Post-operative view after 1 year in first and fourth quadrant.

DISCUSSION

Peripheral cemento ossifying fibroma is either thought to be reactive or neoplastic in nature. It has various synonyms like peripheral cementifying fibroma, ossifying fibroepithelial polyp, peripheral fibroma with osteogenesis, peripheral fibroma with cementogenesis, peripheral fibroma with calcifications, calcifying fibroblastic granuloma, calcifying or ossifying fibroma epulis.[6] The term cemento-ossifying has been referred to as outdated and scientifically inaccurate because its clinical and histopathological features are same in areas where there is no cementum, such as skull, femur and tibia. The term cemento ossifying fibroma is given due to the presence of dysmorphic round basophilic bone particles within the ossifying fibroma which are termed as cementicles, which are not originated from cementum but represent dysmorphic products of this tumour.[11]

Peripheral cemento ossifying fibroma is said to originate from the cells of the periodontal ligament considering its exclusive occurrence in the interdental papilla, proximity of gingiva to periodontal ligament and presence of oxytalan fibres within the mineralized matrix seen in some lesion. Chronic irritation from calculus and overhanging restorations to the periodontal and periosteal membrane causes metaplasia of the connective tissue and resultant initiation of formation of bone or dystrophic calcifications

in the lesion. It has also been suggested that the lesion may be caused by fibrosis of the granulation tissue.[10]

Most commonly peripheral cemento ossifying fibroma occurs in anterior teeth region, but was not so in this case where all the posterior teeth region were involved.

Clinically generalized plaque and calculus, moderate to deep periodontal pockets (≥ 7 mm) was present in relation to molar regions of all the four quadrants with evidence of bone loss radiographically in all those regions which has not been commonly reported in the literature.

Orkin and Aimadas et al emphasized the importance of histopathological examination to confirm the diagnosis of POF, which clinically resembles a pregnancy tumor, epulis fibrosa, inflammatory hyperplasia, or peripheral and central giant cell granuloma.

The prognosis of peripheral ossifying fibroma is good, but some instance of recurrence have been reported. In this case no such recurrence have been observed even after one year.

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