

Peripheral Cemento-Ossifying Fibroma - A Clinical and Histomorphological Case Report

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ABSTRACT

Introduction: Peripheral cemento-ossifying fibroma is a hard fibrous growth that continues to enlarge, sometimes to a very significant size, unless treated. It is a gingival lesion of reactive nature comprising about 9% of all gingival overgrowths. It occurs sometimes in connection with a fracture or any other type of injury. It is generally asymptomatic until the growth produces a noticeable swelling and mild deformity. Displacement of teeth is an early clinical feature.

Case report: This report describes a case of an 18 year old male presenting with swelling of gingiva in the mandibular anterior region. The mass was surgically excised and flap elevation and debridement was done.

Conclusion: Histopathological report revealed it as peripheral cemento-ossifying fibroma. No recurrence was observed in the next 6 months.

Keywords: Peripheral cemento-ossifying fibroma, Fibroma, Excisional biopsy

INTRODUCTION

“Fibromas” are benign fibrous overgrowths which arise from the mucous membrane. They are frequently found in the oral cavity and arise due to overproduction of fibrous tissue within the connective tissue. It usually represents a reactive focal fibrous hyperplasia due to trauma or local irritation.¹

Ossifying fibromas are types of fibromas arising in the craniofacial bones. They are composed of proliferating fibroblasts with osseous products that include bone, cementum and ovoid calcifications that are well differentiated from adjacent bone.² These hard fibrous growths continue to enlarge, sometimes to very significant size, unless treated. Exact etiology is not known but they can sometimes occur in connection with a fracture or another type of injury.

The ossifying fibromas are of two types, the central type and the peripheral type. The central type arises either from the endosteum of the bone or from the periodontal ligament adjacent to the root apex causing expansion of the medullary cavity of the bone. The peripheral type occurs on the soft tissue overlying the alveolar process of the jaws.³

Montgomery in 1927 first coined the term, peripheral cemento-ossifying fibroma⁴ which appears as a nodular mass, either pedunculated or sessile originating usually from the interdental papilla. The color of the lesion ranges from red to pink while the surface is frequently but not always ulcerated. There is a slightly higher predilection for the maxillary arch (60%) and the incisor cuspid region (50%) but it can also be found in the mandible.⁵ Peripheral cemento-ossifying fibromas make about 3.1% of all the oral tumors and 9.6% of all the gingival lesions. It affects both genders but females show a higher predilection than males. The lesion is generally asymptomatic until growth produces a

noticeable swelling and mild deformity. Displacement of teeth is an early clinical feature. Recurrence rate is considered to be high (8%-20%).⁶

Radiologic features are variable depending on stage of disease. The lesion appears well circumscribed and demarcated from surrounding bone. It initially shows no calcification but as lesion matures, there is increasing calcification. Slowly the radiolucent area becomes flecked with radio-opacities until lesion appears extremely radio-opaque.

The present report describes a case of peripheral cemento-ossifying fibroma in a 45 year old male patient.

CASE REPORT

An 18 year old male came with the chief complaint of swelling of the gums in the lower front region of jaw since 3 months. It was associated with displacement of lower front teeth. Patient gave history of a small swelling 3 months back in the region of the lower anterior gingiva between 31 and 32. The size gradually increased in the next 2-3 months and it was associated with spacing between 31 and 32. There was no history of pain associated with the lesion except for the discomfort felt during mastication.

Patient gave history of a similar lesion between 31 and 32, six months back. He had got it excised from a local dentist 3 ½ months back. But about 15 days following the excision, the lesion again started recurring and its present size is almost twice that was present earlier. There was no relevant medical and family history. No h/o trauma or fracture of the jaws.

Intraoral examination showed a reddish pink, firm swelling in the region of interdental papilla between 31 and 32. It measured about 1x1 cm and extended on the coronal aspect of 31, 32, 41 (facially) and 31, 32 (lingually) (Figure-1). It was nontender on palpation and pedunculated. Indentation due to occlusion was seen on the superior aspect (Figure-1). The IOPA of the region showed bone loss upto middle one thirds between 31 and 32 and spacing between 31 and 32. Occlusal radiographic view showed distolabial migration of 32. The routine hemogram of the patient was found to be normal. Peripheral ossifying fibroma was the provisional diagnosis made for the patient. The differential

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diagnosis included irritational fibroma, peripheral giant cell granuloma, calcifying fibroma or pyogenic granuloma.

The treatment plan consisted of scaling and root planning (Phase I therapy) initially, followed by surgical excision of the lesion along with open flap debridement in the region of 31 and 32. Following this minor orthodontic therapy to correct spacing between 31 and 32 was planned. After phase 1 therapy consent for the surgical procedure was obtained. Under local anaesthesia, external bevel incision was given with no 15 surgical blade and the lesion was excised (Figure-2). Following this, crevicular incision was given with no 12 surgical blade from 32 to 41 facially and lingually. Full thickness mucoperiosteal flap was reflected and thorough debridement and scaling and root planning was done (Figure-3). After achieving hemostasis, direct loop suturing was done with 3-0 silk suture. The patient was discharged with a prescription of Amox 500mg 3 times a day for five days, analgesic ibuprofen 400mg 3 times for five days and chlorhexidine mouth wash, 10 ml 2times a day for 14 days and was recalled after one week for a follow up. The excised tissue was sent for histopathologic and radiological analysis The 10 days follow up was uneventful with the surgical site showing signs of healing. A one month follow up followed by 3 and 6 months postsurgical follow-up of the patient showed complete healing of the tissues with no evidence of recurrence (Figure-4).

Histopathology

Haematoxylin and Eosin stain section showed non-keratinized, at

places parakeratinized stratified squamous epithelium with long and slender rete ridges. Epithelium was ulcerated and atrophic at places. The connective tissue stroma was fibro-cellular with proliferating fibroblasts and dense bundles of collagen fibers at places. A large number of blood vessels of varying sizes were noted. In addition multiple interconnecting trabeculae of bone and globules of calcification resembling cementum were also seen. A chronic inflammatory cell infiltrate was noted.

Radiological analysis

The excised tissue was placed at the side of lead foil to compare radio-opacity. A linear radio-opacity was seen within the excised tissue suggesting of ossifications in the tissue.

Thus, a final diagnosis of peripheral cemento-ossifying fibroma was established correlating the clinical, radiologic as well as the microscopic findings.

DISCUSSION

Peripheral cemento-ossifying fibroma is a focal, reactive, non-neoplastic tumor-like growth of soft tissue commonly arising from the region of the interdental papilla.^{6,7} When bony tissue predominates, 'ossifying' is the commonly used term while the term 'cementifying' has been assigned when curvilinear trabeculae or spheroidal calcifications are encountered.⁸ The lesion is referred to as cemento-ossifying fibroma when both bone and cementum-like tissues are observed. The lesion is predominant in the adolescents and younger adults with very



Figure-1: Preoperative view showing reddish pink firm swelling between 31 and 32



Figure-3: After the tissue was excised open flap debridement from 32-42 was done



Figure-2: Intraoperative view showing external bevel incision given using no 15 blade.



Figure-4: 6 Months post-operative showing completely healed healthy gingiva between 31 and 32 with no recurrence

few cases being reported with the older adults.⁵

Peripheral ossifying fibroma is referred to as with numerous synonyms like peripheral cemento-ossifying fibroma, peripheral odontogenic fibroma with cementogenesis, peripheral fibroma with osteogenesis, peripheral fibroma with calcification, fibrous epulis, calcifying fibroblastic granuloma.^{9,10}

The clear cut distinction between ossifying and cemento-ossifying fibroma may be difficult based on clinical and radiological findings. Endo et al distinguished the two by using immunohistochemical analysis for keratin sulphate and chondroitin-4 sulfate. The *cementifying* fibromas showed particularly more reactivity for keratin sulphate whereas ossifying fibromas showed reactivity for chondroitin-4 sulfate.⁷ In the present case typical feature of a pedunculated lesion with the stalk extending interdentially between 31 and 32 was seen. The etiopathogenesis remains unclear but in the present case after reflection of the flap chunk of subgingival calculus was encounter which might be the cause of local irritation. Also the pressure from the lesion was leading to spacing between 31 and 32 which was gradually increasing which created a need for orthodontic therapy following the periodontal therapy.

The probable reason for the initial recurrence observed within 15 days of excision may be inadequate removal of the lesion, persistence of remnants of the lesion within the tissue or persistence of local irritants.¹⁰ Hence complete removal of lesion and careful monitoring thereafter is necessary to prevent recurrence. In the present case since after excision of the lesion open flap debridement was additionally done, all the remnant of the lesion were removed and thorough debridement was done. Following this close monitoring was done after 10 days, 1 month, 3 months and 6 months and no recurrence was observed.

CONCLUSION

Peripheral cemento-ossifying fibroma is a slowly progressing lesion and has limited growth. Its diagnosis based only on the clinical aspects can be difficult and hence histopathological examination of the surgical specimen obtained by excisional biopsy is mandatory for an accurate diagnosis. Well monitored post-operative follow up is required since the lesion has a high recurrence rate.

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