

## Surgical management of peripheral cementifying fibroma - A rare case report

Srinivasa TS\*, Priya J\*, Aena J\*, Gopinath V\*, Yeltiwar RK\*, Rathod V\*\*

\*Department of Periodontics, Rungta College of Dental Sciences and Research, Bhilai

\*\*Department of Oral and Maxillofacial Pathology, Rungta College of Dental Sciences and Research, Bhilai

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#### Corresponding Author:

Dr.Srinivasa TS

Reader,

Department of Periodontics,  
Rungta College of Dental Sciences and Research,  
Bhilai.

### ABSTRACT

Peripheral cementifying fibroma is a reactive focal overgrowth unique to the gingival tissue and thought to arise from periodontal ligament. It usually occurs in younger age group with greater predilection for females. It has slight predilection for anterior segment. Histologically, it is characterized by the presence of numerous basophilic cementum like calcification, seen in discrete pattern within the connective tissue. This case report presents the clinical features, surgical management and histological features of peripheral cementifying fibroma.

### Introduction

Peripheral cementifying fibroma is a reactive focal overgrowth unique to the gingival mucosa. The terms describing this lesion includes Peripheral ossifying fibroma, Peripheral fibroma with cementogenesis, Peripheral fibroma with osteogenesis, Peripheral fibroma with calcification, calcifying or ossifying fibrous epulis and calcifying fibroblastic granuloma.[1] Two types of ossifying fibroma have been cited, the central type and the peripheral type. The central ossifying fibroma arises from endo-osteum or the periodontal ligament adjacent to the root apex and causes expansion of the medullary cavity. The peripheral type occurs solely on the soft tissues covering the tooth bearing areas of the jaw.[2,3]

Peripheral cementifying fibroma is a slow growing, non-aggressive lesion which occurs exclusively on the gingiva and appears as a nodular mass, either pedunculated or sessile, that usually emanates from the interdental papilla. The surface may be smooth or ulcerated and pink to red in color. Peripheral cementifying fibroma occurs approximately 2-4 times more frequently in females than in males (2:1 to 3:1), most often between 25-35 years of age. It has a slight predilection for anterior jaw segments.[4]

Roentgenographically, PCF does not show any apparently visible underlying bony involvement. However, sometimes there may be superficial erosion of the bone or the saucerization of the interdental alveolar crest. PCF is treated by surgical excision with the removal of irritating factors. Higher recurrence rate reflects the technique and philosophy of the surgical management.[1]

### Case Report

A 18 year female patient visited to the Department of Periodontology, Rungta College of Dental Sciences and Research,

Bhilai, with the chief complaint of swelling in the lower front region of the jaw since 2 months. The growth was sudden in onset and gradually increasing in size. Patient gave the history of bleeding while brushing. Family history, medical and dental history was not relevant. Extraoral examination was not significant. Intraoral examination revealed an approximately 1x1.5 cm solitary, pedunculated growth present on the labial surface of lower central incisors (Figure 1). On palpation the growth was firm, non tender and of smooth surface, Grade I mobility was present with #31 and #41 along with positive vitality test.



Figure 1: Gingival overgrowth with #31, #41

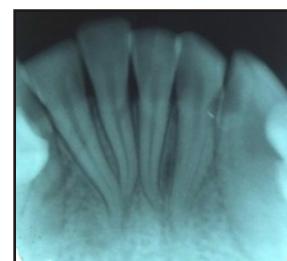


Figure 2: Preoperative radiograph with #31, #41

Radiographic examination revealed loss of lamina dura (Figure 2). Complete hemogram revealed all blood counts to be within normal limits. On the basis of history, clinical presentation and radiographic findings a provisional diagnosis of gingival fibroma was made and excisional biopsy was planned.

After obtaining written informed consent the patient was scheduled for scaling and root planing. Two weeks later the soft tissue mass was excised along with a thin border of healthy gingival tissue under local anaesthesia (2% xylocaine with 1:80,000 adrenaline) (Figure 3, Figure 4). The area was thoroughly debrided and irrigated with normal saline and surgical wound was covered

with periodontal dressing. Antibiotics and analgesics were prescribed and patient was discharged after giving her the postoperative instructions.



Figure 3. Excision of the overgrowth with #15 blade



Figure 4. After excision of pedunculated overgrowth

The histopathological examination revealed stratified squamous epithelium which is slightly proliferated. At places, stretching of rete ridges were also appreciated. Underlying connective tissue was collagenous with active fibroblasts. Chronic inflammatory infiltrate consisting of predominantly plasma cells and lymphocytes were also evident. Numerous basophilic lamellar cementum like calcifications appeared in many areas of the section (Figure 5, 6). Considering the history, clinical features, radiographic findings and histopathological picture, a final diagnosis of 'Peripheral cementifying fibroma' was made.



Figure 5. Photomicrograph at 10x magnification

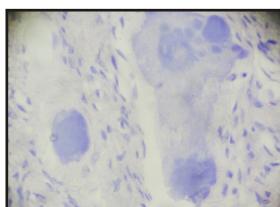


Figure 6. Photomicrograph at 10x magnification



Figure 7. Clinical photograph of 6 month post-surgery

Patient reported after one week, the periodontal dressing was removed and the area was thoroughly irrigated with saline. The oral hygiene was reinforced and patient was recalled at regular intervals for re-evaluation. Healing was uneventful. After six month follow up there is no evidence of recurrence (Figure 7).

## Discussion

The present case is a rare case of Peripheral cementifying fibroma which was initially diagnosed as gingival fibroma based on clinical and radiographic findings. Gingival fibroma is a benign soft tissue neoplasm arising from connective tissue or periodontal ligament. It is a slow growing tumour that may be firm, nodular, soft or hard. Histopathologically there is stratified squamous epithelium,

hyperplastic rete ridges and connective tissue stroma with collagen fibers and fibroblasts. Surgical excision is the treatment of choice.[9 10]

Peripheral ossifying fibroma, histological variant of PCF is considered as a quite common lesion (approximately 9.6% of all the biopsied gingival lesions).[4] When bone predominates, 'ossifying' is the appellation, while the term 'cementifying' is assigned when curvilinear trabeculae or spheroidal calcifications are encountered.[5,6] Both are impossible to separate clinically and radiographically. An attempt has been made to distinguish cementifying fibroma from ossifying fibromas and fibrous dysplasia by using immunohistochemical analysis for keratin sulfate and chondroitin-4-sulfate in which the of cementifying fibroma showed significant reactivity for keratin sulfate and ossifying fibromas and fibrous dysplasia showed intensive immunostaining for chondroitin sulfate.[7] Though exact etiology of PCF is not clear, it is believed to be inflammatory in nature and originating from the superficial periodontal ligament. This lesion is frequently associated with irritants like plaque, calculus, dental appliances, ill-fitting crown and rough restorations. Hormonal influence may contribute in explaining their growth because of higher incidence in adult women and rare before the age of 10 years.

Histologically, the PCF shows characteristics features like stratified squamous epithelium which can be keratinized or parakeratinized, intact or ulcerated. The exceeding cellular mass of connective tissue is another key feature of this lesion which is in contrast to the simple fibroma. There are large number of plump fibroblast with delicate fibrillar stroma. The vascularity is not as prominent as in the pyogenic granulomas. Numerous basophilic cementum like calcification in discrete pattern is another characteristic microscopic feature.[4]

Surgical excision of the lesion, thorough degranulation and root planing of the adjacent teeth is the treatment of choice. The recurrence rate of PCF is high for reactive lesions.[3] Cudniff in 1972 reported 16% recurrence. Some other authors have reported recurrence rates varying from 8.9 to 20%. It probably occurs due to incomplete removal, repeated injury or persistence. The average time interval for the first recurrence is 12 months.[2] To minimize the recurrence, excision should be wide enough to involve a thin layer of normal healthy gingival tissue and deep enough to involve the bone.[8] Thorough debridement and irrigation of the operated site may reduce any possibility of recurrence of the lesion, which was observed in the present case.

## Conclusion

Peripheral cementifying fibroma is a rare variant of Peripheral ossifying fibroma. It is important to eliminate etiological factors including plaque and calculus retentive restorations along with surgical excision. The possibility of recurrence should be minimized by total excision of involved periodontal ligament and periosteum. Long term follow up is of utmost importance following this.

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