



## Peripheral Cement-Ossifying Fibroma - A Clinical and Histopathological Case Report

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### Abstract

Peripheral cement-ossifying fibroma is a reactive gingival overgrowth occurring frequently in anterior maxilla. It is a slow growing benign tumor which may lead to pathologic migration and other periodontal problems hence it should be excised as soon as possible. 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. Early diagnosis with proper surgical excision and aggressive curettage of the adjacent tissues are essential for prevention of recurrence.

**Keywords:** Gingival Overgrowth; Peripheral Cement-Ossifying Fibroma; Fibroma; Reactive Gingival Growth.

### Introduction

The oral cavity often presents with localized gingival overgrowths that are difficult to diagnose solely on their clinical appearance. Many of these lesions are plaque induced in nature.

Peripheral Cement-Ossifying Fibroma is a benign neoplasm arising in craniofacial bones, composed of proliferating fibroblasts with osseous products that include bone and ovoid calcifications. There are two types of ossifying fibromas: the central type and the peripheral type. It occurs exclusively on the gingiva and accounts for 3.1% of all oral tumors and for 9.6% of gingival lesions [1].

Peripheral Cement-Ossifying Fibroma is a relative rare lesion considered as an osteogenic tumor (nonodontogenic) with variable expressiveness. It is defined as a well-demarcated and occasionally encapsulated lesion consisting of fibrous tissue containing variable amounts of mineralized material resembling bone (ossifying fibroma), cementum (cementifying fibroma) [2]. Peripheral cement ossifying fibroma 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 but the surface is frequently but not always ulcerated. There is a slightly higher predilection for the maxillary arch (60%) and incisor cuspid region (50%) but it can also be found in the mandible [3].

The present case report describes a case of peripheral cement-ossifying fibroma in a 17 year old female patient.

### Case Report

A 17 year old female patient reported to the Department of Periodontics with the chief complaint of a painless swelling in the lower left back tooth region since 2 months. The swelling increased in size gradually over a period of 2 months. The patient gave history of a similar lesion in the same region of the mouth which was excised 2 years ago.

Intraoral examination revealed a localized swelling in relation to 34-36 region involving the interdental papilla and attached gingiva, measuring 1.5 X 1.5 cm in dimension. It was firm and fibrotic in consistency, bright red in colour with a lobulated appearance

(Figure 1-3). The surface of the lesion did not show any ulceration and did not bleed spontaneously on probing. The patient presented with poor oral hygiene.

The lesion was excised, and tissue was sent for histopathological examination to Department of Oral Pathology and Microbiology (Figure 4 and 5).



Figure 1: Pre op Frontal view.



Figure 2: Pre op Lateral view.



Figure 3: Extent of lesion.

Radiographically, no evidence of bone loss was seen. Routine blood tests were normal. Patient was systemically healthy. Following thorough oral prophylaxis and root planing, the patient was scheduled to undergo excision of the lesion.

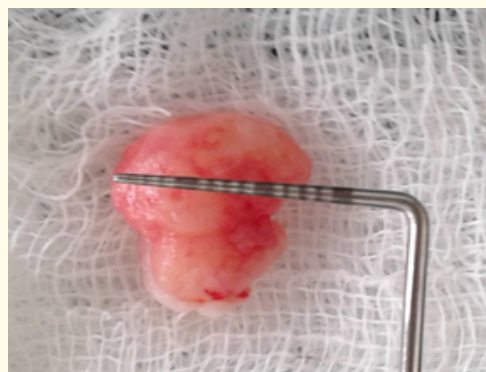
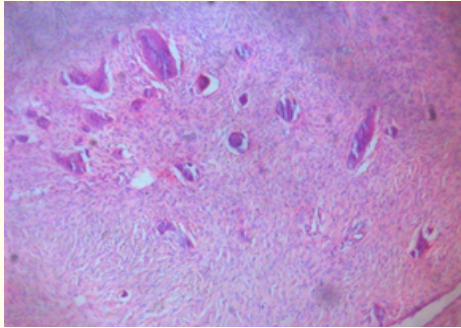


Figure 4: Excised lesion.



Figure 5: Immediate Post op.

Histopathology reports indicated presence of stratified squamous parakeratinized hyperplastic epithelium. The underlying connective tissue showed densely packed collagen fibres. The focal area of the stroma showed myxoid degeneration. The stroma also revealed round to ovoid calcified materials suggestive of cementum and irregular bony trabeculae suggestive of osteoid. Presence of diffuse and moderate inflammatory cell infiltrates comprising of plasma cells and lymphocytes and endothelial lined blood vessels with engorged RBCs was also noted in the stroma. These features were suggestive of Peripheral Cement Ossifying Fibroma (Figure 6).



**Figure 6:** Photomicrograph showing cementoid material within stroma.



**Figure 7:** 1 week post operative.

## Discussion

Peripheral cemento-ossifying fibroma (PCOF) is a focal, reactive, non-neoplastic tumor-like growth of soft tissue, often arising from the interdental papilla. Though the etiopathogenesis of peripheral ossifying fibroma is uncertain, an origin from cells of periodontal ligament has been suggested. The reasons for considering periodontal ligament origin for peripheral ossifying fibroma include exclusive occurrence of peripheral ossifying fibroma in the gingiva (interdental papilla), the proximity of gingiva to the periodontal ligament and the presence of oxytalan fibers within the mineralized matrix of some lesions [1]. It has also been suggested that it may develop as a result of fibrous maturation over time and subsequent calcification of lesion such as pyogenic granuloma [4].

Ossifying fibromas elaborate bone, cementum and spheroidal calcifications, which has given rise to various terms for these benign fibro-osseous neoplasms. When bone predominates, ossifying is the appellation, while the term cementifying has been assigned when curvilinear trabeculae or spheroidal calcifications are encountered. When bone and cementum like tissues are observed, the lesions have been referred to as cemento-ossifying fibroma [2].

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 sulphate. The cementifying fibromas showed particularly more reactivity for keratin sulphate whereas ossifying fibromas showed reactivity for chondroitin -4-sulphate [6].

Peripheral cement-ossifying fibroma is a non-neoplastic enlargement of the gingiva that is classified as a reactive hyperplastic inflammatory lesion. It is possible to misdiagnose PCOF from the other reactive lesions arising from the gingiva [5]. Therefore, histopathological examination is essential for an accurate diagnosis and for proper management. We described a case of Peripheral Cement Ossifying Fibroma in a 17 year old female patient in 34 to 36 region. The lesion recurred in same region of the jaw probably due to an inappropriate surgical excision. Complete excision upto with aggressive curettage of the adjacent tissues are essential for prevention of its recurrence rate ranging from 8% to 20% [4,7].

## Conclusion

Peripheral Cement-Ossifying Fibroma is a slowly progressing lesion, the growth of which is generally limited. Many cases will progress for long periods before patients seek treatment because of the lack of symptoms associated with lesion. In the current case treatment consists of surgical excision, including the periosteum and scaling of adjacent teeth. Close postoperative follow-up is required because of history of recurrence.

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