

“Peripheral Cemento- Ossifying Fibroma”–A Case Report

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Abstract: *Peripheral cemento-ossifying fibroma is a gingival lesion of reactive nature and is believed to arise from the periodontal ligament. It comprises about 9% of all gingival overgrowths. Its incidence is around the second and third decade of life. It has a predilection for females and about 60%of the lesions are seen most often in the maxillary arch. Trauma, local irritation such as calculus, ill-fitting dentures or faulty restorations are known to precipitate the development of these lesions.*

This report describes a case of Peripheral cemento-ossifying fibroma in a 45 year old male involving the maxillary anterior region. An excisional biopsy was carried out for the lesion and was diagnosed with peripheral cemento- ossifying fibroma after histological analysis.

Key Words: *Peripheral cement-ossifying fibroma, Gingival overgrowth, Excisional biopsy*

I. Introduction

Benign fibrous overgrowths arising from the mucous membrane are termed as fibromas and are frequent growths in the oral cavity; arising due to overproduction of fibrous tissue in the connective tissue. It usually represents a reactive focal fibrous hyperplasia due to trauma or local irritation. There are two types of ossifying fibromas namely-the central type and the peripheral type. The central type arises from the endosteum or the periodontal ligament adjacent to the root apex and causes expansion of the medullary cavity of the bone. The peripheral type occurs on the soft tissue overlying the alveolar process and is a ‘non neoplastic’, reactive fibrous proliferation of gingiva covering [1].

The term, peripheral cement-ossifying fibroma was coined by Montgomery in 1927 [2]. Peripheral cement-ossifying fibroma accounts for 3.1% of all oral tumors and 9.6% of the gingival lesions. About 60% of these tumors occur in maxilla and more than 50% of all cases of maxillary POF are found in the incisors and canine areas [3].

It affects both genders but review of literature shows a higher predilection for females. There is a slight predilection for the maxillary arch (60%) and the incisor-cuspid region (50%) but may also occur in the mandibular arch. Racial predominance has been reported with 70 % whites being affected in contrast to 26% blacks. Peak incidence occurs in the second and third decades of life [4,5].

The present report describes a case of Peripheral Cemento-Ossifying Fibroma in a 45 year old male patient.

II. Case Report

A 45 year old male patient reported to the Department of Periodontics, Sirte Dental School with a chief complain of a painless swelling in the upper anterior teeth region since 6-7 months. History revealed that the lesion started as a small nodule and has gradually increased to attain the present size. His past medical history and family history were noncontributory. Extra oral examination revealed normal facial features. On examination, the patient’s lips were incompetent. Oral hygiene was fair.

There was an oval, hard, pedunculated growth located on the buccal surface of the gingiva in relation to 11 and 21 region; measuring approximately 2.0 x 1.5 cm in diameter (Figure:1). The overlying mucosa was pale pink in color, with no ulcerations or vascular changes. On palpation, the inspection findings were confirmed. The mass was firm in consistency, pedunculated, non-tender and no bruit or pulse was felt. Periodontal examination showed moderate amount of supra and sub-gingival calculus and probing pocket depth of 6mm in relation to 11 and 21 region. 11 showed Grade I mobility. OPG revealed angular bone loss in relation to 11 and 21. (Figure:2). Routine hemogram was found to be normal. A provisional diagnosis of peripheral cement-ossifying fibroma was made. The differential diagnosis included irritational fibroma, calcifying fibroma or peripheral odontogenic fibroma. The patient had no relevant systemic history. The treatment plan included scaling and root planning (Phase I therapy). Consent for the surgical procedure was obtained from the patient after proper counseling. Under local anaesthesia, an excisional biopsy was performed and the underlying surface was thoroughly curetted up to deepest possible tissue (Figure: 3). After controlling bleeding, periodontal dressing was placed. The patient was discharged with a prescription of antibiotics, analgesics and chlorhexidine mouth wash and was recalled after one week for a follow up. The one week follow up was uneventful with the

surgical site showing signs of healing (Figure: 4). The tissue was sent for histopathologic analysis. A six month postsurgical follow-up of the patient showed no evidence of recurrence.

III. Histopathology

The H&E stained section of the biopsied tissue revealed an over growth of fibrous tissue (Figure:5). The connective tissue of the growth comprised of bundles of collagen fibers in a cellular stroma. Numerous plumps to spindle shaped fibroblasts and fibrocytes were present. These cells were also arranged in a whirl shaped around irregular mineralization foci in the center. The connective tissue also revealed several foci of calcifications, which resembled cementum-like and bone-like ossifications. The overlying epithelium was hyperplastic, parakeratotic stratified squamous epithelium showing numerous elongated rete pegs. Few blood vessels with RBC and proliferating endothelial cells were also evident. Chronic inflammatory cell infiltrate was seen evenly distributed in whole area and the cells comprised mainly of lymphocytes and plasma cells. Thus, a final diagnosis of peripheral cement-ossifying fibroma was established correlating the clinical findings as well as the microscopic features.

IV. Discussion

Peripheral cement-Ossifying Fibroma is a non-neoplastic enlargement of the gingiva with randomly distributed calcifications, immature bone and osteoid [2]. It is found exclusively on the gingiva and does not arise in other oral mucosal location. Clinically, it resembles a peripheral fibroma, but histopathologic analysis always reveals immature bone and osteoid within the lesion. Its incidence is 0.5% in the older age group. It varies from pale pink to cherry red in color, can be either pedunculated or sessile and is typically located in the interdental papilla region. The lesion may cause a separation of the adjacent teeth, and occasionally minimal bone resorption can be seen beneath the lesion. The peak incidence is found most frequently in teenagers and young adults and has a high recurrence rate upto 20% while women are 2-4 times more likely to be affected than men[3].

Peripheral cemento-ossifying fibroma(PCOF) has been given many synonyms, such as epulis, [4] calcifying fibroblastic granuloma, peripheral cementifying fibroma, peripheral fibroma with cementogenesis, peripheral cemento-ossifying fibroma, ossifying fibro epithelial polyp and peripheral fibroma with osteogenesis. [5] Bhasker et al in 1984 described this lesion as peripheral fibroma with calcification and the term PCOF was coined by Eversol and Robin. [6] The etiopathogenesis of PCOF is unclear, trauma or local irritants such as subgingival plaque and calculus, dental appliances, poor-quality dental restorations, microorganism, masticatory forces, food lodgment and iatrogenic factors are known to influence the development of the lesion. An origin from cells of periodontal ligament has been suggested because of exclusive occurrence of PCOF from interdental papilla, the proximity of gingiva to PDL, the presence of oxytalan fibers within the mineralized matrix of some lesions, the age distribution, and the fibro cellular response similar to other reactive gingival lesions of periodontal ligament origin[7].

Approximately 60% of PCOFs occur in the maxilla and they are found more often in the anterior region, with 55- 60% presenting in the incisor-cuspid region.

In our case the lesion was seen in the maxillary region involving the incisors, in a male patient aged 45 with a moderate amount of supra and sub-gingival calculus and interdental angular bone loss. It usually measures less than 1.5 cm and rarely reaches more than 3 cm in diameter, but lesions of 6 cm and 9 cm have also been reported. [8]

The surface may be either intact (34%) or ulcerated (66%). The reported case was of 2×1.5 cm in diameter with a smooth surface. The lesion represents varying stages of a fibroma with ossification, however, ossification or calcification may not be evident in all cases, particularly in earlier stages of growth. Foci of radiopaque material, bone formation or dystrophic calcification may be seen, particularly in large lesions or lesions with overt mineralization. PCOF can produce migration of teeth with interdental bone destruction[8,9].

Histopathologically, PCOF, can exhibit either an intact or ulcerated stratified squamous epithelium. The deeper fibroblastic component is highly cellular with central areas of calcification. The mineralized tissue may consist of bone, cementum like material, dystrophic calcification, or a combination of each[9].

Treatment of PCOF consists of elimination of etiological factors, scaling of adjacent teeth and total aggressive surgical excision along with involved periodontal ligament and periosteum to minimize the possibility of recurrence. Long term postoperative follow-up is extremely important because of the high growth potential of incompletely removed lesion and a relatively high recurrence rate of approximately 20%.

V. Conclusion

The diagnosis of peripheral cement-ossifying fibroma based only on clinical aspects can be difficult and therefore histopathological examination of the surgical specimen obtained by excisional biopsy is mandatory for an accurate diagnosis.

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Legends For Pictures



Figure 1: Clinical Image (pre operative)



Figure 2: Radiograph (OPG) of the oral lesion



Figure 3: Excision of the lesion



Figure 4: 1 week Postoperative view

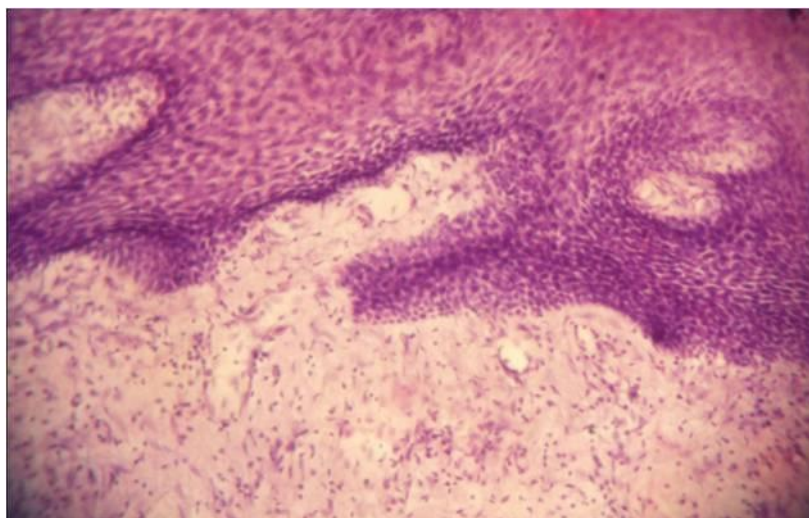


Figure 5: Histological appearance of the oral lesion