

PERIPHERAL CEMENTO-OSSIFYING FIBROMA- A CASE REPORT

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Abstract

Peripheral cemento-ossifying fibroma (PCOF) is a reactive neoplasm. It occurs frequently in anterior maxilla comprises 9% of all gingival growths and predominantly affects adolescents and young adults. It most commonly arises from the periodontal ligament. A number of factors have been implicated in the pathogenesis of PCOF including trauma and local irritation. The definitive diagnosis of these lesions requires integration of its clinical, radiological and histological features. In this article, we describe a case of PCOF with the history of three months involving anterior region.

Keywords: Ossifying fibroma, tooth migration, periodontal ligament, epulis, calcifying fibroblastic granuloma.

INTRODUCTION

Ossifying fibroma is a benign neoplasm arising in craniofacial bones, composed of proliferating fibroblasts with osseous products that include bone and ovoid calcifications; these lesions are well demarcated from the adjacent bone.¹

There are two types of ossifying fibromas: 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 medullary cavity. The peripheral type occurs solely on the soft tissues covering the tooth-bearing areas of the jaws.²

In 1872, Menzel first described ossifying fibroma; but only in 1927, Montgomery assigned a terminology to it.³ So, the term, peripheral cemento-ossifying fibroma was coined by Montgomery in 1927. Peripheral cemento-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.²

A potential of tooth migration due to the presence of peripheral cement ossifying fibroma has been reported. The treatment of choice is surgical excision with removal of irritation factors.

CASE REPORT

A 22-year old male patient had reported to the Department of Periodontics, Chhattisgarh Dental College and Research Institute, Sundra, Rajnandgaon with the chief complaint of painless overgrowth in upper front region of jaw since 1 year. He gave the history that the overgrowth was present from last 1 year which was small in the earliest and gradually increases till 4-5 months and then it became constant. Bleeding was detected by the patient only after brushing.

Intraoral examination revealed a well defined gingival overgrowth, ovoid in shape with diffuse border in relation to 11 and 21 region extending from cervical margin of 11 and 21

(buccally) to 1.5 beyond cervical margin of 11 and 21 (palatally) of approximately 1.5×2 cm in size(Figure1). It was firm in consistency. Tenderness seemed to be absent on palpating but present while probing. Skin over the overgrowth is normal intermixed with erythematous surface. Pseudopocket of 4-5mm was present in relation to 11 and 21. No other marked deformity was noted extraorally or intraorally.

Intraoral periapical radiograph in relation to 11 and 21 showed radio-opaque shadow on coronal portion of 11 and 21 suggestive of orthodontic brackets and wires. Interdental moderate crystal bone loss in relation to 11 and 21 upto the cervical third of radicular portion was also seen(Figure 2)

A provisional diagnosis of pyogenic granuloma was made. The differential diagnosis included peripheral cemento- ossifying fibroma, traumatic fibroma and peripheral giant cell granuloma. The patient underwent complete blood investigation prior to surgery and was found to be normal.

The patient didn't reveal of any systemic problem, and the surgery was performed 7 days after complete oral prophylaxis. Under local anesthesia, the lesion was excised followed by curettage of the area and scaling of the involved teeth (Figure 3). Periodontal dressing was placed and patient was recalled after 7 days for removal of pack and re- evaluation. The excised tissue was sent for histopathological examination.

HISTOPATHOLOGY

Histopathological report revealed Para-keratinized stratified squamous epithelium with long and narrow rete ridges overlying connective tissue stroma. Underlying connective tissue stroma is fibro-cellular composed of dense bundles of collagen fibres, fibroblasts, numerous blood vessels containing RBCs and chronic inflammatory cell infiltrate composed of lymphocytes and plasma cells. At places concentrically laminated calcified bodies resembling cementum and bony trabeculae lined by osteoblast cells were also observed. A final diagnosis of Peripheral Cemento-Ossifying Fibroma was made (Figure5,6,7).

DISCUSSION

Peripheral cement-Ossifying Fibroma is a non-neoplastic enlargement of the gingiva with randomly distributed calcifications, immature bone and osteoid. It is found exclusively on the gingiva and does not arise in other oral mucosal location.⁷

Peripheral cemento-ossifying fibroma(PCOF) has been given many synonyms, such as epulis, calcifying fibroblastic granuloma, peripheral cementifying fibroma, peripheral fibroma with cementogenesis, peripheral cemento-ossifying fibroma, ossifying fibro epithelial polyp and peripheral fibroma with osteogenesis.^{8,9}

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 lodgement 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.¹⁰

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.

The peripheral cemento-ossifying fibroma clinically presents as a pedunculated or sessile exophytic mass, about <2 cm in diameter (occasionally >10 cm), with a color similar to that of the mucosa, unless the surface is ulcerated.

In our case the lesion was seen in the maxillary region involving the incisors, in a male patient aged 22 with a mild supragingival stains and interdental bone loss. It measures approximately 1.5x2.0 cm, sessile mass with well-defined margins and pebbled surface.

Postoperative infection is an uncommon complication of periodontal surgery. It appears that infection is more likely to occur in association with bone exposure, flap displacement, where periodontal lesions are the result of pulp degeneration. In association with sutures and particles of impacted debris, in areas of tissue laceration and impaired vascularization add calculus and bacterial plaque have been accidentally impacted into the tissues. Aspects of wound healing were considered before the start of the procedure.

Radiographically PCOF varies from completely no changes to areas of calcification depending upon the degree of mineralization. Superficial bone loss, cupping defect and focal areas calcification have been reported in some cases¹¹. Present case shows intra-crestal bone loss.

The reported gingival overgrowth has been clearly diagnosed as peripheral cemento-ossifying fibroma after histopathologic examination. Clinical picture of less vascular growth rules out the possibility of pyogenic granuloma.

The treatment of choice for PCOF is excision of the mass with removal of peripheral and deep margins including both the periodontal ligament and the affected periosteal component following a thorough scaling & root planning.¹² 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%.

CONCLUSION

The diagnosis of peripheral cemento-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.



Figure.1. Photograph showing gingival overgrowth in relation to 11 & 21.



Figure.2. Intra oral Peri Apical showing crestal bone loss in relation to 11 & 21.



Figure.3. Photograph showing excised tissue.

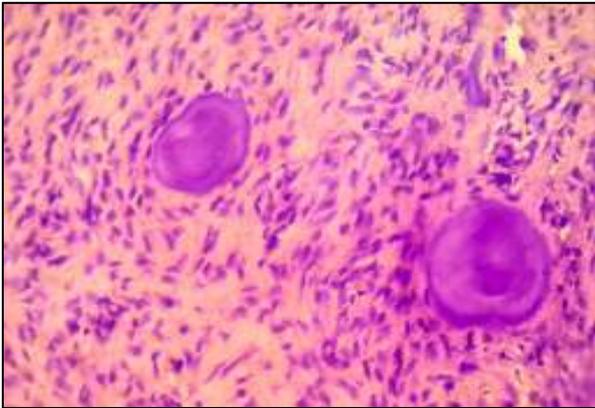


Figure.4. Photograph showing postoperative view at 3 months.

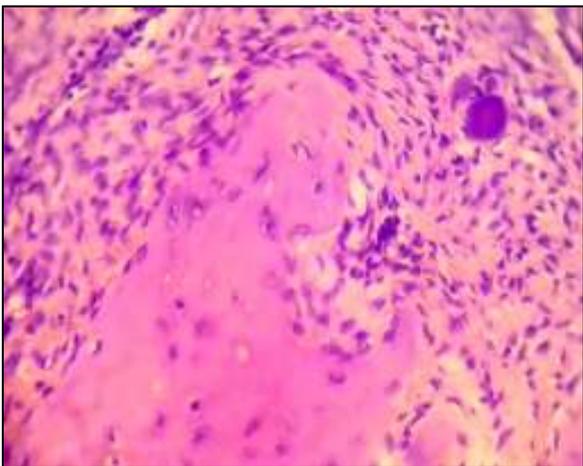


Figure.5. Low power photomicrograph showing epithelium overlying connective tissue component (H & E stain, X 10)



Figure.6. High power photomicrograph showing fibrocellular connective tissue stroma along with cementum like masses (H & E stain, 40x).

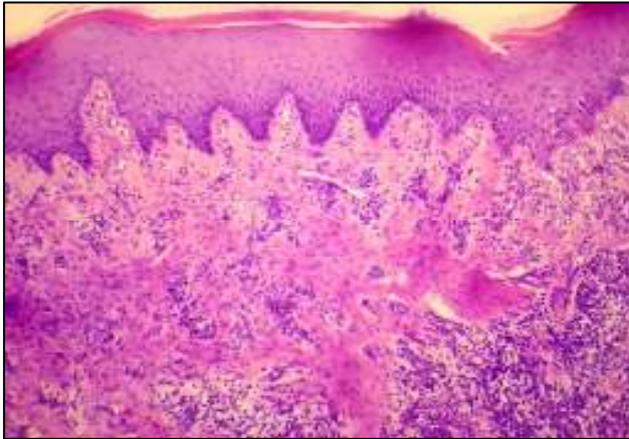


Figure.7. High power photomicrograph showing bony trabeculae with peripheral osteoblastic rimming in a fibrocellular connective tissue stroma. (10x)

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