



PERIPHERAL OSSIFYING FIBROMA- A REACTIVE LESION

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ABSTRACT Peripheral ossifying fibroma (POF) represents a rare separate entity of reactive benign lesion believed to be of periodontal ligament origin that occurs mainly in the gingiva. The present article is a case report related to peripheral ossifying fibroma in a 40-year female who reported with a painless growth in the right maxillary posterior region of jaw, its diagnosis, satisfactory clinical management along with brief review of literature.

KEYWORDS : Case report, peripheral ossifying fibroma, benign oral lesion, fibroma

INTRODUCTION

The most prevalent benign soft tissue tumor in the oral cavity is fibroma. Most fibromas representing reactive focal fibrous hyperplasia occur due to trauma or local irritation. The term peripheral ossifying fibroma was proposed by Gardner in 1982. There are numerous histologically different types of focal overgrowths, which may occur on the gingiva, such as the peripheral giant cell granuloma, the giant cell fibroma, the pyogenic granuloma, the simple fibroma. The term peripheral ossifying fibroma (POF) is used for relatively common gingival lesion characterized by a high degree of cellularity usually exhibiting bone formation, although occasionally cementum-like material or rarely dystrophic calcification may be found instead. It accounts for 3.1% of all oral tumors and for 9.6% of gingival lesions. It has prediction for female and may occur at any age but more frequently seen in young adult mainly 2-3rd decade. Approximately, 60 % of these tumors occur in the maxilla, and >50 % of maxillary POF are found in the incisors and canine areas. POF occurs as a rare growth of the mandible, especially of the anterior region. It is a well-demarcated, slow-growing, solitary focal mass of tissue on the gingiva, with a sessile or pedunculated base, mostly originating from the interdental papilla. It is of the same color as normal mucosa or slightly reddened. The surface may be intact or ulcerated. Along with analyzing the current literature, the case report of a 40-year-old female patient with peripheral ossifying fibroma, its diagnosis, as well as satisfactory clinical management are the main topics of this paper.

CASE REPORT

A 40 year old female patient named Mrs Phoolan devi reported at the department of Periodontology, UPUMS, Saifai, Etawah, U.P. with chief complaint of bleeding and swelling around right upper back tooth region since 2-3 months. Patient gave history of extraction 1 and 1/2 years back and after that only she notices some growth over that region. But for the last 3 months that growth was associated with bleeding and had rapid increase in size. Medical history was non-contributory in this case. She used to clean her teeth with finger and toothpaste.

On extra oral examination face appeared grossly asymmetrical. There was gross swelling of face on the right zygoma region. On Intraoral examination, large, solitary, well-defined growth in the region of attached gingiva, approximately 2.2cm×1.5cm in size and extending posterior distal of tooth 17 involving the tuberosity region was found. Superio-inferiorly it extend from the buccal vestibule extending inferiorly covering the coronal 1/3rd of crown 17.

The colour was same as that of attached gingiva with red erythematous area in the posterior 1/3rd of swelling. The surface was regular and smooth. On palpation non-tender, non-pulsating, pedunculated swelling of firm consistency was present. It was associated with pus discharge. The overlying surrounding mucosa was normal.

Figure 1: Pre-operative maxillary ocular view showing pale pink solitary well-defined swelling around #17 region extending toward maxillary tuberosity



Figure 2: Pre-operative IOPAR wrt #17,16 showing radio-opacity posterior to #17 and cupping defect of bone



Figure 3: Intra-operative view showing excision of the growth



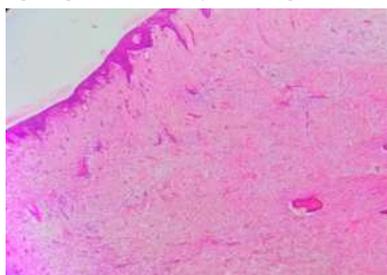
Figure 4: Excised growth



Figure 5: Suture placed after excision of the growth



Figure 6: Histological section of the growth showing intact epithelium, high degree of cellularity with irregular calcification



On radiographic examination- IOPAR wrt #17,16 revealed presence of radio-opacity posterior to #17, periodontal ligament widening present irt #17 with cupping bone defect on disto-proximal surface irt #17. Multiple root stump was noted i.e. 14,26,27,28 on panoramic view.

Phase I periodontal therapy was done as the oral hygiene status of the patient was very poor. Following 2 weeks, after obtaining the written consent from the patient, an excisional biopsy of the growth was performed under local anesthesia. The growth was enucleated, #17 tooth was extracted and the sample was sent for histopathological examination. The histopathology report revealed mass of connective tissue covered partly by parakeratinized stratified squamous epithelium with abundant of fibroblasts, thin collagen fibers, blood capillaries and few inflammatory cells. Also, few irregular calcified masses were appreciated. Correlating the clinical and radiological findings with the histopathological features a final diagnosis of peripheral ossifying fibroma was made.

DISCUSSION

Gingiva is one of the anatomical regions in the oral cavity with the broadest array of lesions ranging from inflammatory to neoplastic. It is also the exclusive location for the occurrence of POF that accounts for 9.6% of all the gingival lesions. The periodontal ligament or connective tissues are the primary sources of gingival fibromas. There was controversy over the term. In the past Peripheral ossifying fibroma and peripheral odontogenic fibroma was used synonymously. But, the letter term used for a lesion of odontogenic tumor which is totally different entity. POF represents a rare separate entity of reactive benign lesion believed to be of periodontal ligament origin or from the soft tissue overlying the alveolar process (periosteum).

Excessive proliferation of fibrous tissue can occur in response to gingival irritation, subgingival injury or the presence of a foreign body in the gingival sulcus. In this case, the lesion may occur because of poor oral hygiene, cluster of plaque and calculus. POF has higher incidence in female patients because of hormonal influence and for our case, the patient is also a female.

POF may closely resemble pyogenic granuloma, Traumatic fibroma, inflammatory hyperplasia, peripheral ossifying cementoma, peripheral giant cell granuloma, central ossifying fibroma or central giant cell fibroma. The following is a list of the key differences:

TABLE – 1 Clinical feature of different benign tumors of gingiva

Lesion	Clinical feature
Pyogenic granuloma	Prediction- Female, gingiva, Characteristic- Soft mass, lobulated or smooth, sessile or pedunculated, pink to red to purple in color, prone to bleed.
Peripheral ossifying fibroma	Prediction- Females, anterior to the molar area. Characteristic- slow-growing, solitary focal mass of tissue on the gingiva, sessile or pedunculated base, normal mucosa or slightly reddened, intact or ulcerated surface.
Central ossifying fibroma	Prediction- black population, young adults, mandible, posterior teeth-bearing area. Characteristic - central neoplasm of bone asymptomatic, slow growing resulting in mild deformity
Central giant cell granuloma	Prediction- females, anterior Characteristic - Non-neoplastic reactive lesions asymptomatic slow-growing bony swelling to an aggressive lesion.

Giant cell fibroma	Prediction- 10–30 years, no gender predilection, mandible Characteristic - Asymptomatic sessile or pedunculated nodule, <1 cm in diameter. Bosselated or somewhat papillary surface.
Peripheral giant cell granuloma	Prediction- Female, Mandible Characteristic -reactive or neoplastic process, relatively rapid growth rate, pedunculate or sessile, size 0.5-1.5 cm, dark red, vascular, or hemorrhagic in appearance, ulcerated surface

TABLE – 2 Histopathological features of different benign tumors of gingiva

Lesion	Histopathologic feature
Pyogenic granuloma	Vascular proliferation that resemble granulation tissue Mixed inflammatory infiltrate.
Peripheral ossifying fibroma	Exceedingly cellular mass of connective tissue, plump fibroblasts Bone, cementum-like or dystrophic mineralized component.
Central ossifying fibroma	Delicate interlacing collagen fibrils, Active, proliferating fibroblasts. Mitotic figures Many small foci of irregular bony trabeculae
Central giant cell granuloma	Abundant hemorrhage, aggregations of multinucleated giant cells and occasionally trabecular of bone.
Giant cell fibroma	Large, plump, spindle shaped fibroblasts, unencapsulated, presence of multinucleated giant cell, corrugated and atrophic surface epithelium
Peripheral giant cell granuloma	Multinucleated giant cells Plump ovoid and spindle-shaped cells Abundant hemorrhage

The most common location for this lesion is maxilla (about 50%) and more commonly in the anterior maxilla (about 60% of cases) with 55–60% presenting in the incisor-cuspid region. Mandeep Rallan et al. reported that it may occur on anterior region of the mandible (about 3.1%). In our case, the lesion is present in maxillary arch in posterior region.

Clinically, the POF presented well-demarcated, slow-growing, solitary focal mass of tissue on the gingiva, with a sessile or pedunculated base. The size of the lesion ranges from: 0.2-2.0 cm in most of the cases. But, Childers et al. reported few cases giant POF up to 9 cm in diameter. In our case, the size is more than usual size but not considered as giant POF.

The radiographic assessment may present as no involvement of underlying bone to rarely, superficial erosion of bone range, cupping defect and focal areas of radiopaque calcifications at the center of the lesion. In our case, radio-opacity at the centre of the lesion present distal to tooth number #17 with erosion of the bone on disto-proximal aspect of #17.

Differential diagnoses included traumatic fibroma, pyogenic granuloma, peripheral ossifying fibroma, central ossifying fibroma, peripheral odontogenic fibroma, peripheral giant cell granuloma and osteosarcoma. In the present case, because of the radiographic feature, we excluded most of the differential diagnosis. Histopathology provides the confirmatory diagnosis with the recognition of fibrous connective tissue along with presence of mineralized material either bone or cementum-like. Giant cells were not seen.

The line of treatment is excisional biopsy with histopathological evaluation, tooth extraction seldom needed. The recurrence is rare. In our case, we extracted #17 tooth because of its poor prognosis during excisional biopsy. The patient follow-up for the next 1 year and no sign of recurrence was observed.

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