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**CASE REPORT**

**FOCAL REACTIVE SOFT TISSUE LESION OF GINGIVA – A DIAGNOSTIC DILEMMA**

**\*^Usha Chikkaiah, \*\*H J Jaikrishna, \*\*\*KB Hemavathy, \*\*\*\*Gururaju CR,  
#Jyothi PA and ##Madhu Kiran**

\*^Department of Oral Medicine & Radiology, Sharavathi Dental College and Hospital, Shimoga;

\*\*Department of Oral Medicine & Radiology, Shyamala Reddy Dental College & Hospital, Bangalore;

\*\*\*Department of Oral & Maxillofacial Surgery, Daswani Dental College and Research centre, Kota; \*\*\*\*

Department of Oral & Maxillofacial Surgery, Sharavathi Dental College & Hospital, Shimoga,

#Department of Prosthodontics including crown & Bridge, Sri Rama Dental College & Hospital, Kanpur;

##Department of conservative & Endodontics, Sharavathi Dental College & Hospital, Shimoga.

**^Correspondence author:** [cushamds@gmail.com](mailto:cushamds@gmail.com)

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##Department of conservative & Endodontics, Sharavathi Dental College & Hospital, Shimoga.

**^Correspondence author:** [cushamds@gmail.com](mailto:cushamds@gmail.com)

**ABSTRACT:**

There are different types of focal overgrowths which may occur on the gingiva. These growths of gingiva are common and often result from underlying systemic disease, drug induced, local iatrogenic factors and dental plaque. Many of these enlargements are considered to be reactive rather than neoplastic in nature. These reactive lesions are more common in the oral cavity because of the frequency with which the tissues are injured. Clinically differentiating one from the other as specific entity is sometimes difficult. This case report describes one such reactive growth of the gingiva that is not implicated with any underlying systemic disease or drug induced. Clinical, radiographic, histologic characteristic along with the differential diagnosis, treatment and prognosis are discussed with the importance of the proper communication with the patient as she was more anxious about the possibility of the lesion being a carcinoma.

**Key words:** Focal, Overgrowth, Gingiva, Reactive, systemic disease, drug induced

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**INTRODUCTION:**

Oral mucosa is constantly subjected to external and internal stimulus and therefore manifests a spectrum of disease that range from

developmental, reactive and inflammatory to neoplastic [1]. These lesions present as either generalized or localized. Reactive lesions are clinically and histologically non neoplastic

nodular swellings that develop in response to chronic and recurring tissue injury which stimulates an exuberant or excessive tissue response [1, 2].

The most common group of hyperplastic reactive gingival/alveolar lesions includes inflammatory gingival hyperplasia, fibrous epulis, oral pyogenic granuloma, irritation fibroma, giant cell fibroma, fibroepithelial polyp, peripheral ossifying fibroma, peripheral giant cell granuloma and pregnancy epulis excluding caries, periodontal and periapical inflammatory disease. Such reactive lesions are less commonly present in other intraoral sites such as cheek, tongue, palate and floor of the mouth [1]. Clinically, these reactive lesions often present diagnostic challenges because of similar clinical features and mimic various groups of pathologic processes [1].

Many of these lesions can be identified as specific entities on the basis of characteristic morphology [3].

The aim of this paper is to provide comprehensive knowledge on the focal reactive hyperplastic gingival lesion. Even though they are non-neoplastic most of the patients are concerned about the malignancy. There is a need for the awareness, proper investigations and histologic evaluation in the management of this lesion.

#### **CASE REPORT:**

Presenting concerns: A 56-years-old female reported with a complaint of the swelling in the upper front tooth region. She had initially noticed a small swelling 2 years back, later it had increased to the present size associated with pain and bleeding while brushing and having food. The patient was much tensed due to a recent death of a 40-year-old male patient after surgery in her village that had a similar kind of swelling in the oral cavity and was diagnosed as oral cancer. As her swelling was noticed by all her neighbours they had assumed it was a cancer. Ethical clearance for this study was obtained from the College Ethics committee.

#### **Clinical findings:**

On general physical examination, the patient was moderately built and nourished, conscious and co-operative. No abnormalities in gait and posture. There was no evidence of pallor, cyanosis, edema, icterus and clubbing. Right side single submandibular lymph node was palpable measuring about 2.0 x 1.0 cm, firm in consistency, non tender and mobile. All the vital signs were within normal limits. On extra oral examination, lips were incompetent. Fullness of upper lip on right side was noted with a diffuse swelling measuring about 2.0 x 3.0 cm in size. Anterio-posteriorly, the swelling extended from corner of the mouth to 3.0 cm posteriorly and superiorly from ala-tragal line to the upper vermilion border of the lip. No

secondary changes of the skin over the swelling (figure 1). The swelling was tender on palpation and firm in consistency with no local rise in temperature.

Mouth opening was adequate. On intraoral examination a solitary nodular sessile growth seen on the buccal gingiva in relation to teeth 14, 15 measuring about 3.0 x 4.0 cm in size, extending antero-posteriorly from distal aspect of tooth 13 to distal aspect of tooth 17. Superiorly it was obliterating the buccal sulcus in relation to teeth 14, 15, 16, 17 and inferiorly up to the occlusal level of the same involved teeth. The surface was smooth and the overlying mucosa was pink in colour with bleeding spots (figure 2). On palpation, tenderness was present, firm in consistency and bleeding was noted on probing.

General intraoral examination showed generalized bleeding on probing with deposits of calculus and stains. Generalized attrition and gingival recession was noted. Other findings included abrasion of teeth 11, 12; dental caries in relation to teeth 26, 27 and mobility of teeth 14, 15, 26, 31, 32, 41, 43. A provisional diagnosis of pyogenic granuloma of gingiva in relation to teeth 14, 15 was made.

#### Differential diagnosis:

The various differential diagnoses considered were peripheral giant cell granuloma, peripheral ossifying fibroma and peripheral odontogenic fibroma.

#### Diagnostic focus and assessment:

The patient was subjected to routine blood investigation and radiographic examination. The blood picture was within normal limits.

#### Radiographic evaluation:

##### Intraoral Periapical Radiograph (IOPAR):

IOPAR of teeth 14, 15 showed interdental bone loss in relation to teeth 14, 15, 16 extending upto apical 1/3rd of the root surface and foci of calcification between the crowns of teeth 14 and 15 not in contact with the tooth (figure 3).

##### Occlusal Radiograph:

Maxillary cross-sectional occlusal radiograph also revealed the foci of calcification on the buccal surface of teeth 14 and 15 measuring approximately 1.0 x 1.0 cm and is not in contact with the tooth or the buccal cortical plate (figure 4).

##### Orthopantomogram (OPG):

OPG radiograph showed generalized interdental bone loss suggestive of chronic generalized periodontitis. Foci of calcifications were seen in between the teeth 14 and 15 (figure 5). The radiographic diagnosis of peripheral ossifying fibroma was made.

#### Treatment:

Once the patient was convinced, a prophylactic antibiotic was given and she was subjected to surgical excision under Local anaesthesia. The mobile teeth 14, and 15 was also extracted and

the gross specimen measuring about 3.0 x 4.0 cm was shown to the patient and was sent for histopathological evaluation

#### Histopathological Evaluation:

The histologic picture showed parakeratinised stratified epithelium with dense, cellular connective tissue stroma with numerous calcified osseous structures. The connective tissue was infiltrated with inflammatory cells and showed few dilated blood vessels engorged with Red Blood Corpuscles. The histologic picture was suggestive of Peripheral Ossifying Fibroma.

#### Outcome and follow-up:

Based on the clinical, radiological features and histologic characteristics final diagnosis of peripheral ossifying fibroma of gingiva was achieved. The patient was examined one week post operatively with uneventful healing and she also did not complain of any pain and was happy. She was told of the final report that the lesion was a local reactive one and not a neoplastic lesion.

#### DISCUSSION:

Peripheral Ossifying fibroma (POF) is defined as a well demarcated and occasionally encapsulated lesion consisting of fibrous tissue containing variable amounts of mineralized material resembling bone [4].

There are two types of ossifying fibroma, the central and peripheral types. The central type

arises from the endosteum or the periodontal ligament adjacent to the root apex causing expansion of the medullary cavity. The peripheral type occurs solely on the soft tissue covering the tooth bearing areas of the jaws [5]. The peripheral type is a specific entity and does not represent the peripheral counterpart of the central variant [5, 6, 7].

The term Peripheral Ossifying Fibroma was coined by Eversole and Rovin in 1972 [8]. Various terminologies like Peripheral odontogenic fibroma, peripheral cemento-ossifying fibroma, ossifying fibroepithelial polyp, peripheral fibroma with osteogenesis, peripheral fibroma with cementogenesis, and others have been used to describe this lesion [5, 9]. The sheer number of names used for fibroblastic gingival lesions indicates that there is much controversy surrounding the classification of these lesions [10].

The etiopathogenesis of POF is not known, trauma or local irritants such as sub gingival plaque and calculus, ill fitting dental appliances, poor quality dental restoration, masticatory forces, food lodgment and iatrogenic factors may influence the development of the lesion [11].

Many have believed that pyogenic granuloma is an immature form of POF due to their similar clinical and histopathological features [5, 12].



Fig 1: Extraoral swelling on the right side of the upper lip



Fig 2: Intraoral view of lesion showing 3.0 X 4.0 cm growth of the gingiva irt teeth 14,15



Fig 3: IOPAR showing foci of calcification between teeth 14 and 15



Fig 4: Maxillary cross-sectional Occlusal radiograph, showing foci of calcification on buccal aspect of teeth 14 and 15 measuring about 1.0 x 1.0 cm



Fig 5: Orthopantomogram showing similar foci of calcification between teeth 14 and 15

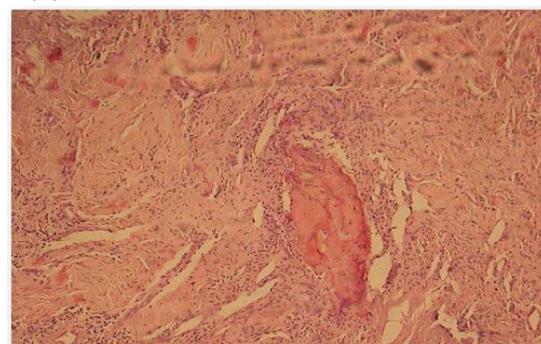


Fig 6: H and E stained section showing foci of calcification suggestive of ossification in dense connective tissue stroma.

The influence of hormone is considered to be the etiological factor in females [10, 13]. In the present case the occurrence of the lesion was due to the local irritant factors like sub gingival calculus and subsequent trauma caused by masticatory forces and brushing.

POF may be presented as pedunculated or sessile mass. These lesions can be red to pink with areas of ulceration and their surface may be smooth or irregular [10, 11, 14]. In the present case the growth was sessile, smooth surfaced with ulceration (figure 2). Although they are generally less than 2.0cm in diameter, size can vary ranging from 0.2 to 3.0cm; 4.0mm to 8.0cm and some lesions may be as large as 9.0cm in diameter. Cases of tooth migration and bone destruction have been reported but not common [10, 11, 14].

The female to male ratio reported in the literature varies from 1.22:1 and 1.7:1 to 4.3:1 [10]; majority of the lesions occur in the second decade with a declining incidence in later years. POF appears to be more common among whites than black and slightly less common among those of Hispanic origin [10, 11, 14].

The lesions may be present for a number of months to years before the excision [10]. Approximately 60% of POF's occur in maxilla and often in anterior region with 55% to 60% present in incisor-cuspid region [10, 14]. In our present case we noted the lesion in an elderly female patient in maxillary posterior region

(figure 2). Radiographically POF varies from completely no changes to areas of calcification depending upon the degree of mineralization, superficial bone loss, cupping defect and focal area of calcification have been reported [9]. In the present case, the focus of calcification was located between teeth 14, 15 with drifting of involved teeth and interdental bone loss (figures 3, 4, 5).

Histologically, a typical ulcerated POF can exhibit three zones: [14]

Zone 1: The superficial ulcerated zone covered with fibrinous exudates and enmeshed with polymorphonuclear neutrophils and debris.

Zone 2: The zone below the surface epithelium composed almost exclusively of proliferative fibroblasts with diffuse infiltration of chronic inflammatory cells mostly lymphocytes and plasma cells.

Zone 3: More collagenised connective tissue with less vascularity and high cellularity osteogenesis consisting of osteoid and bone formation is a prominent feature, which can even reach the ulcerated surface in some cases. The mineralized material may represent mature, lamellar or woven osteoid cementum like material or dystrophic calcification [5, 10, 11].

The non ulcerated POF lesions are similar to an ulcerated type except for the presence of surface epithelium [7, 10, 13, 14]. In our present case the histologic picture showed

numerous calcified osseous structures in dense connective tissue stroma (Figure 6).

Treatment requires proper surgical intervention that ensures thorough excision of the lesion including the involved periosteum and periodontal ligament. Thorough root scaling and planning should be accomplished to remove the irritation [5, 6, 10, 13, 14]. Prognosis is good, but regular follow up of the patients are required as some authors have reported recurrence rates varying from 8.9 to 20% [8, 15]. Cundiff has reported 16% of recurrence rate [8, 16] and Eversole and Rovin have given 20% of the recurrence rate [8].

#### CONCLUSION:

It is difficult clinically to differentiate between most of the reactive gingival lesions, the lesion must be examined thoroughly both radiographically and histologically. Discussion of the differential diagnosis should be done tactfully to prevent unnecessary distress to the patient and family. Complete surgical excision of the lesion along with elimination of the etiological factors must be achieved to prevent recurrence.

COMPETING INTEREST: NIL

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