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FOCAL REACTIVE OVERGROWTHS OF GINGIVA: CASE SERIES

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ABSTRACT Gingival overgrowth is a common clinical finding and commonly manifests as plaque induced reactive hyperplasia. Localized gingival overgrowths like peripheral fibroma, peripheral ossifying fibroma and pyogenic granuloma belong to a common group of lesions designated as focal reactive overgrowths (FROG). They have similar clinical and biological behaviour but vary in their histogenesis and histopathological features. The definitive diagnosis though is established by histological examination, which sometimes reveals focal calcifications in the connective tissue. The present case series analyses 4 cases of localised reactive overgrowths of the gingiva (FROGs) which presented a similar clinical picture but had a different histopathological picture.

KEYWORDS : Gingival overgrowth, focal reactive overgrowths, FROGs.

INTRODUCTION

Reactive hyperplastic lesions comprise of a group of fibrous connective tissue lesions that commonly occur in the oral mucosa. These lesions represent a reaction to some kind of chronic irritation or low grade injury like chewing, trapped food, calculus, fractured teeth and iatrogenic factors including overextended flanges of dentures and overhanging dental restorations[1]Localized enlargement of gingiva, historically termed as epulis, refers to any solitary/discrete, pedunculated or sessile swellings of the gingiva with no histologic characterization of a particular lesion[2]

Daley et al. have considered these localized overgrowths namely as focal fibrous hyperplasia (FFH), peripheral fibroma (PF), peripheral ossifying fibroma (POF), pyogenic granuloma (PG) and peripheral giant cell granuloma (PGCG, giant cell epulis) belonging to a common pathosis designated as focal reactive overgrowths.[3]Puranik et al suggested the acronym FROG's for these focal reactive overgrowths.[4]

These lesions have similar clinical presentation but differ in their histogenesis and histopathological features. Few peripheral odontogenic tumours, benign and malignant epithelial and connective tissue tumours may imitate FROGs clinically. Hence, it is necessary that clinicians have adequate knowledge about FROGs so as to differentiate them from other lesion.[5]The present case series analyses four cases of focal reactive overgrowths of the gingiva (FROGS) which presented a similar clinical picture but exhibited a different histopathological picture.

CASE 1

PERIPHERAL GIANT CELL GRANULOMA

A sixty year old male reported with the chief complaint of localised, nodular, swelling of the gums in the lower right back region of the jaw since six months. Clinical examination revealed a sessile, round, purplish red gingival overgrowth in the region of the canine and premolars. The lesion showed bleeding on slightest provocation. Treatment included surgical excision of the lesion and extraction of the associated teeth. (i.e 44,45).

Fig.1 PERIPHERAL GIANT CELL GRANULOMA
a) Preoperative photograph.
b) Immediate postoperative photograph
c) Histologic presentation

Excisional specimen was sent for histopathological examination, H&E stained sections revealed very dense fibrocellular connective tissue stroma with numerous multinucleated giant cells with overlying parakeratinized stratified squamous epithelium. Dense haphazardly arranged collagen fibres with plump round. to ovoid fibroblasts were seen. Inflammatory cell infiltrate, primarily lymphocytes along with dilated blood vessels, RBC's and hemosiderin pigments were also seen. Based on the histopathological analysis a diagnosis of peripheral giant cell granuloma was made. No recurrence was noted after a follow up of one year.

CASE 2

PERIPHERAL GIANT CELL FIBROMA

A 38 year old female reported with the chief complaint of swollen gums in the upper front region of the jaw since three months. Patient also gave a history of excision of a similar growth one year back. Clinical examination revealed the presence of a firm, sessile, pink overgrowth. The overgrowth was excised surgically and the involved tooth (i.e.11) was extracted.

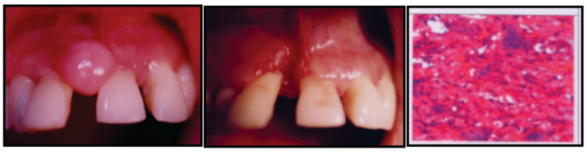

Fig.2. PERIPHERAL GIANT CELL FIBROMA a) Preoperative photograph. b) Immediate postoperative photograph c) Histologic presentation

After excision, the specimen was sent for a histopathological analysis. H&E stained slides showed para keratinised stratified squamous surface epithelium supported by a dense reticular fibrillar connective tissue Numerous peripheral giant cells were seen. Thus, a final diagnosis of peripheral giant cell fibroma was made based on the histopathological analysis. There were no signs of recurrence during a follow up period of one year.

CASE 3
PERIPHERAL OSSIFYING FIBROMA

A 22 year old female reported with a chief complaint of a swelling in the upper left region of the gums which gradually increased in size over a period of three months. There was no pain associated with the same. Clinical examination revealed a pink, solitary, ovoid overgrowth which was firm in consistency.

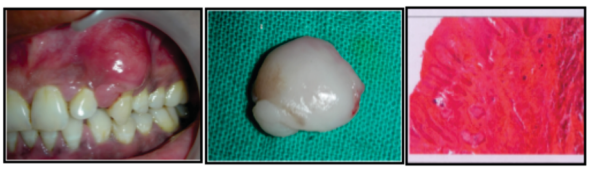

Fig.3. PERIPHERAL OSSIFYING FIBROMA a) Preoperative photograph. b) Excised tissue. c) Histologic presentation

After complete excision, the specimen was subjected to histopathological analysis. The H&E sections revealed parakeratinised stratified squamous epithelium with areas of discontinuity in the epithelial lining. Connective tissue showed the presence of large plump fibroblasts interspersed in a fibrillar stroma. Isolated areas of hemotoxyphillic calcifications resembling cementum were seen. Based on the clinical and histopathological picture, a final diagnosis of peripheral ossifying fibroma was made. Patient reported for follow up upto six months post operatively, and there were no signs of recurrence of the lesion during this period.

CASE 4
PYOGENIC GRANULOMA ON RECURRENCE MANIFESTED AS PERIPHERAL OSSIFYING FIBROMA

A 25 year old female reported with a chief complaint of swollen gums in the upper front region of the jaw since two years. Similar enlargement was seen in the same region during her first trimester of pregnancy. Patient underwent conservative excision four months postpartum and the histopathologic analysis revealed pyogenic granuloma. Patient noticed recurrence of the swelling eight months postpartum which gradually increased in size. Clinical examination revealed a 2×2 cm,pink, solitary, pedunculated, localised predominantly to the interdental papilla and palatal gingiva between the maxillary central incisors.

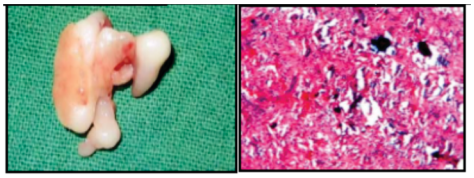

Fig.4. PYOGENIC GRANULOMA ON RECURRENCE MANIFESTED AS PERIPHERAL OSSIFYING FIBROMA a) Preoperative photograph- Labial view b) Preoperative view-Palatal c) Excised tissue. d) Histologic presentation

After complete surgical excision, the specimen was subjected to histopathologic analysis. The H&E sections revealed parakeratinised stratified squamous epithelium with a high cellular and fibroblastic component along with focal areas of calcification, suggestive of a peripheral ossifying fibroma. There was no recurrence reported during a follow up period of one year.

Based on the history, clinical presentation and histopathologic analysis a final diagnosis of pyogenic granuloma on recurrence manifested as peripheral ossifying fibroma was made.

DISCUSSION

Gingival overgrowths, historically referred to as "Epulides", are most commonly occurring mucosal lesions. **Kfir Y et al.**, classified reactive hyperplasic lesions as PG, PGCG, POF and FH. [6] This case series analyses four different cases of focal reactive overgrowths (FROGs) on the based on their clinical and histopathologic presentation.

Focal Reactive Overgrowths are a response to chronic, low-grade stimulus caused by plaque, calculus, or any other irritant[7]. FROGs are usually associated with poor oral hygiene, indicating towards their reactive nature[8]. All FROGs have similar etiology and clinical features, but their histological appearance varies according to the intensity of irritation, duration of the lesion and other factors [4]. In the present case series, poor oral hygiene was a common finding

Focal Reactive Overgrowths are more common in females; thus, implicating the role of female hormones in the pathogenesis of FROG [5]. In the present case series, three out of the four cases were females.

Clinically, the lesions under FROGs have many overlapping characteristics and usually are either sessile or pedunculated. The most commonly affected site is gingiva. It is important to note that POF and PG may occur at extra-gingival sites but POF and PGCG are strictly restricted to gingiva. Histopathological investigations are mandatory to validate the clinical diagnosis of FROGs.[9]

The PGCG presented in this case series was typically seen in a male in his sixth decade and in the mandibular posterior region. However, the peripheral giant cell fibroma (CASE 2) was seen in the maxillary anterior region and lacked the characteristic cyanotic or purplish hue observed in such giant cell lesions.

The POF (CASE 3) presented here had a typical clinical presentation. However, no calcifications were seen in the radiograph. The histopathologic analysis revealed calcification. The close connection between POF and PG has been extensively reported and it has been suggested that both these lesions are different manifestations of the same pathologic process.[10]The present case series reports a similar case of recurrence of a PG as a POF.

The differential diagnoses of FROGs include infective periapical diseases/periodontal abscess, tumours like peripheral odontogenic tumours, various benign and malignant connective tissue tumours and metastatic tumours of the jaws[5].

The treatment of FROGs involves removal of the etiologic agent and complete excision of the lesion. Various modalities like conventional surgical excision, laser excision and excision with electrocautery can be done. Complete excision is important as the rate of recurrence of these lesions is considerably high. In the present case series, the excision was carried out using the conventional scalpel method and no recurrence was reported in any of the cases.

CONCLUSION

Majority of the FROGs are slowly progressing and asymptomatic. Hence, the patient only reports if it has progressed to the point wherein function and esthetics are compromised. A clinician must have sound knowledge of the differential diagnoses of these lesions, as many neoplastic lesions have similar presentation. Thus, the management of FROGs involves proper diagnosis, removal of the local irritating factors and meticulous surgical excision followed by close follow up and maintenance.

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