Peripheral Ossifying Fibroma: A Case Report

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Abstract

Background: Peripheral ossifying fibroma is a reactive hyperplastic mass that is believed to be derived from connective tissue of the submucosa or periodontal ligament. It has a predilection for young adults, though it may occur at any age. Females are more predisposed towards developing these lesions than males and the gingiva anterior to the molars is the most common site. Here is a case report discussing the etiopathogenesis and classical histological features of the lesion.

Keywords: Ossifying Fibroma, Hyperplastic, Periodontal Ligament.

INTRODUCTION

Gingiva is often the site of localized overgrowths that are considered to be reactive rather than neoplastic. Many of these lesions can be specified as specific entities on the basis of typical and consistent histomorphology. These include the Peripheral giant cell granuloma, pyogenic granuloma (including pregnancy tumour), and fibrous hyperplasia (fibrous epulis). There is, however, another gingival overgrowth that is usually composed of cellular fibroblastic tissue and that contains one or more mineralised tissues bone (woven and lamellar), cementum like material or dystrophic calcification. Lee included some of these lesions in the fibrous epulis group, whereas for the others he proposed the term calcifying fibroblastic granuloma. Other authors have proposed various names for this lesion, such as soft fibroma, peripheral fibroma with calcification, peripheral ordontogenic fibroma, and peripheral ossifying fibroma. Finally, WHO suggested that, of the various names mentioned in literature, only the term peripheral ossifying fibroma should be retained.

CASE REPORT

A 45 year old female patient reported to pacific dental college & hospital, with a chief complaint of swollen gums in the left upper front region since last 4-5 years. History of present illness revealed a firm to hard swelling, and no pain associated with it. Extraorally, the lesion is present on the middle 3rd of the face with an extension superiorly to lateral border of ala of nose, inferiorly to vermillion border of lip, anteriorly to philtrum of nose and posterior a line is drawn from lateral canthus of left eye upto the commissure of lip. It was ovoid in shape with a size of 4.8 x 3.5 cm. It was hard, non tender and non fluctuant. Intraoral examination revealed a soft tissue overgrowth present on the gingiva, extending from 21 to 23 (distally) with shiny texture, reddish pink in color. It was sessile, loculated (bilobed) growth. The right lobe was soft, non tender and non fluctuant extending from middle third of 22 to 23 distally. It had a size of 3.5 x 3 cms. Its extension superiorly was upto gingival sulcus, inferiorly to proximal region between 22 and 23, anteriorly to distal side of 21 and posteriorly to distal of 23. There was grade one mobility in relation to 21, 22, 23 and stains (++) and calculus (+ +) was also evident.

The differential diagnosis of peripheral ossifying fibroma and giant cell granuloma was made. An excisional biopsy was carried out. The histopathological sections revealed a hyperplastic parakeratinizaed stratified squamous epithelium and the loose fibrous connective tissue stroma with plump proliferating fibroblasts, scanty vasculature and dense interconnecting hematoxyphilic calcifications resembling bone comprising lacunar spaces and osteocytes. The overall features were suggestive of Peripheral ossifying fibroma.

A follow up of 1 year was done and no recurrence was seen.

DISCUSSION

The peripheral ossifying fibroma is a relatively common gingival overgrowth that is considered to be reactive rather than neoplastic in nature. It accounts for 9.6 % of all the biopsied gingival lesions (Layfield, Shopper and Weir, 1995). While it's etiology is unclear, they are frequently associated with irritants like calculus, dental plaque, dental appliances, ill fitting crowns and rough restorations (Gardner, 1982). Since it occurs exclusively on gingiva (Kenny, 1989), it's occurrence is correlated with the periodontal ligament (Layfield, 1995). They are also thought to originate from the gingival corium or periodontium (Buckmen, 1958). While In the case reported by us, the oral hygiene status was poor and the overgrowth was arising from gingiva.

The fibrous lesions of gingiva with or without calcifications are documented under a variety of terms such as, fibrous epulis (cooke, 1952 ; Lee, 1968), fibroepithelial polyp, calcifying fibroblasic granuloma, soft fibroma (stones, 1941), peripheral odontogenic fibroma (shafer, 1983), peripheral fibroma with osteogenesis (Bruce, 1953), peripheral fibroma with or without calcifications (Bhasker, 1965, 1966), peripheral odontogenic fibroma with or without calcifications (Mulcahy and Dahle, 1995), peripheral odontogeinc fibroma with cementogenesis (Buckman, 1958), peripheral ossifying fibroma (Eversole, 1972) and ossifying fibrous epulis (Orkin and Amaidas, 1984). It has been suggested that these lesions are stages in the spectrum of a single disease process and should be collectively termed as "fibroblastic gingival lesions". (Zain R.B. and Fei Y.J. 'fibrous lesions of gingiva'. "A histopathologic analysis of 204 cases." Oral medicine Oral pathol,(1990) 70: 466 – 470).

Gardner (1982) has suggested that peripheral ossifying fibroma and peripheral odontogenic fibroma are two distinct lesions, the former being a common reactive lesion and the latter a rare extra-osseous counterpart to the central odontogenic fibroma (WHO type). He also suggested that, of the various names mentioned in the literature, only the term, "peripheral ossifying fibroma" should be retained. Buchner (1987) and Kenney (1989) also concluded that, there were sufficient histologic differences to distinguish between these two lesions. Also inspite of similarity in the names, the peripheral ossifying fibroma does not represent the soft tissue counterpart of central ossifying fibroma (Neville, 1995).

Clinically, peripheral ossifying fibroma occur more frequently in the second and third decade, with distinct decrease in incidence after 29 years of age.

This predilection for young people coincides with the findings of the previous studies of Lee (1968). Anderson (1973) noted that these lesions occurred in patients who are younger than those in which the fibrous hyperplasia appears. Most of the authors, noted that they occur approximately 2- 4 times more frequently in females than in males, conversly to the findings of Anderson (1973), who reported male predilection with a ration of 9:15. However the present case, was of a female patient with 45 years of age.

Buchner and Hansen (1987) showed that the peripheral ossifying fibroma has got a slight predilection for anterior maxilla with more than 50% of all the lesions occuring in incisor – cuspid region. Whereas some authors showed nearly equal distribution of lesions in maxilla and mandible. Several investigators reported a similar findings that, Peripheral ossifying fibroma is a well demarcated mass of tissue, located on the gingiva, having a sessile or pedunculated base, which may be lobulated or cauliflower like. The color ranged from pink to slightly red or red. The surface may be either intact or ulcerated. The present case showed a sessile overgrowth in the anterior maxillary cuspid region, reddish pink in color, and was lobulated and shiny.

Anderson (1973) noted that the lesions ranged in size from 0.2 to 0.3 cms at their greatest dimension. However, in the case which has been reported by us was 4.8 x 3.5 cms Extraorally and 3.5 x 3cms intraorally in dimension.

Histologically it consisted of bundles of collagen fibres running in all directions in a dense, fibrocellular stroma, in cases where there are focal deposits of calcified material, or in a highly cellular to predominantly fibrous stroma where there is calcified osseous lamellae or trabeculae (Kfir, 1980).

Orkin and Amaidas (1984) suggested that, in a long standing case of fibrous epulis, calcification or bone formation may occur, as a result of metaplasia of connective tissue in the centre of the lesion or as a result of chronic irritation to the periosteum or to the periodontal ligament. They may exhibit diffuse radiopaque calcifications, but not all lesions exhibit these radiographic features. The vast majority of these lesions are not associated with the radiographic destruction of bone (Abitol and Santi, 1997). In the case reported by us contains we clearly see diffused radiopaque calcifications.

Bhaskar and Jacoway (1966) noted 1.6% of these lesions contained giant cells, whereas Buchner and Hansen (1987) found 14 % with giant cells and Kenney (1989) encountered 3.8 % of cases with giant cells. Bhasker and Jacoway (1966) and Lee (1968) described fibroblastic tissue in epulides, being often associated with ulceration and preceeding calcification and ossification. Buchner and Hansen (1987) stated that ulcerated lesions were composed of highly cellular fibroblastic connective tissue and dystrophic calcifications, whereas in the non ulcerated lesions, the tissue was more collagenized. They also proposed that ulcerated and non- ulcerated lesions represent a spectrum of one lesion with different stages of maturation.

Eversol and Rovin (1972) in their series encountered two distinct histological pattern of lesion. The first is characterized by randomly dispersed focal deposits of calcified material which vary from ovoid to irregular and from metaplastic or dystrophic- like calcifications to laminated or concentric concretions which resemble liesegang phenomenon. But the second tissue pattern characterized by deposits of calcified osseous lamellae and trabecular with circumferential osteoid.

Anderson (1973) and Buchner (1987) reported lesions with three characterstic zones. The zone 1: - characterized by the superficial ulceration covered with fibrinous exudate with inflammatory cells. The zone 2: - This intermediate zone was characterized exclusively by proliferating fibroblast, with numerous straight capillary sprouts seen at right angles to the mucosal surface. No collagen or elastic fibres were observed. The hyalinization was prominent around vascular channels were mineralization often initiated. The zone 3: Deeper zone was characterized by more collagenous tissue and less vascular connective tissue but still with high cellularity. Chronic inflammatory cells were few or absent. Osteogenesis was a prominent feature of this zone.

A few multinucleated giant cells were observed close to the calcified globules and osteoid materials.

Southam and Venkatraman (1973) upon investigation showed that calcification occurred initially in highly cellular fibroblastic tissue as granular foci in irregular condensation of collagen and argyrophilic fibres, which were P.A.S – positive and sudan black – positive. They also suggested that ossifications in such epulides are preceeded by, and occur around, such an initial granular type of calcification.

Kenney (1989) noted that 12% of peripheral ossifying fibroma has small islands of odontogenic epithelium that did not appear to be related to the calcifications, and suggested that they represent remnants of the dental lamina and not a component of the lesion. Bhasker and Jacoway (1966) also noted 5.3% of their lesions contained odontogenic epithelium but did not elaborated.

Daley et al. (1990) suggested that a typical cellular area in a lesion that otherwise resembles a focal fibrous hyperplasia is sufficient for the diagnosis. Walters et al. (2001) recognized that the deeper fibroblastic component in peripheral ossifying fibroma is highly cellular with central areas of calcifications. Such as bone, cementum-like material, dystrophic calcification or a combination of each. The case reported by us also consists of calcifications in the lesion. He also noted that, they are more cellular than focal fibrous hyperplasia and less vascular than pyogenic granuloma.

Unfortunately, peripheral ossifying fibroma has a relatively high rate of recurrance of approx. 16 – 20% (Bhasker, 1966; Eversol 1972; Layfield, 1995). To minimize this tendency, it is important to completely excise lesion, including the involved periosteum and periodontal ligament and to prevent the repeated injury. Long term follow up is extremely important following surgical excision.

In the reported case, an excisional biopsy was performed and there was no recurrence in a one year follow up series.

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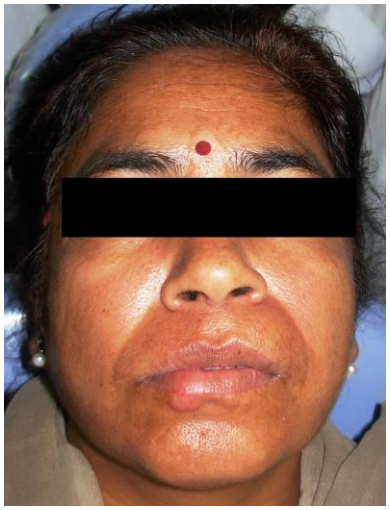
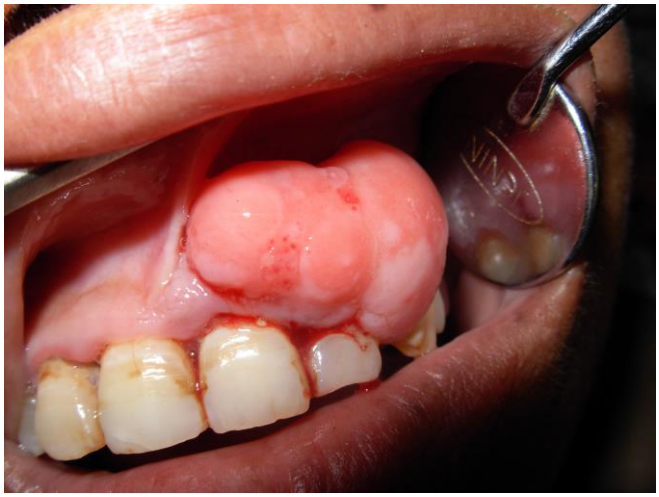


Figure 1



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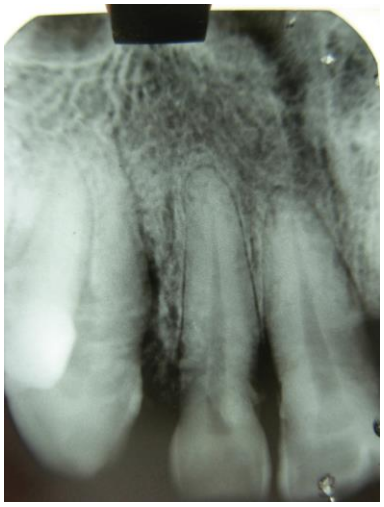
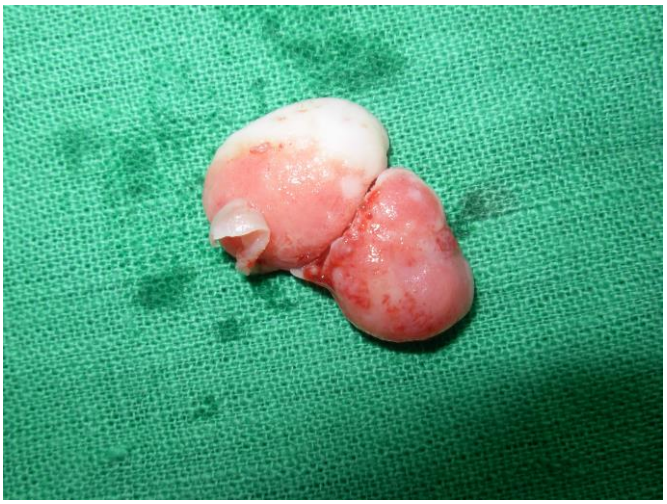


Figure 3



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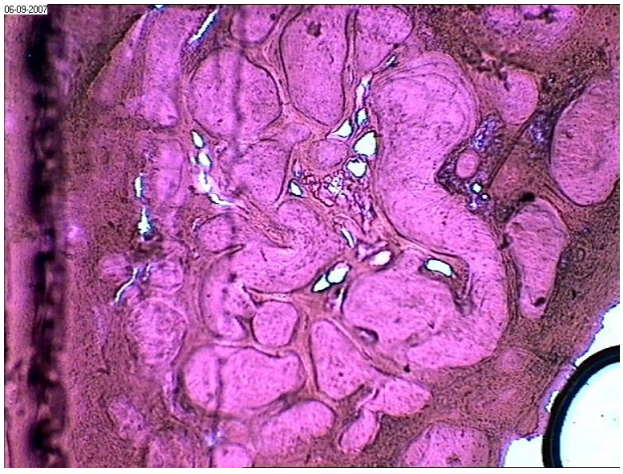

Figure 5

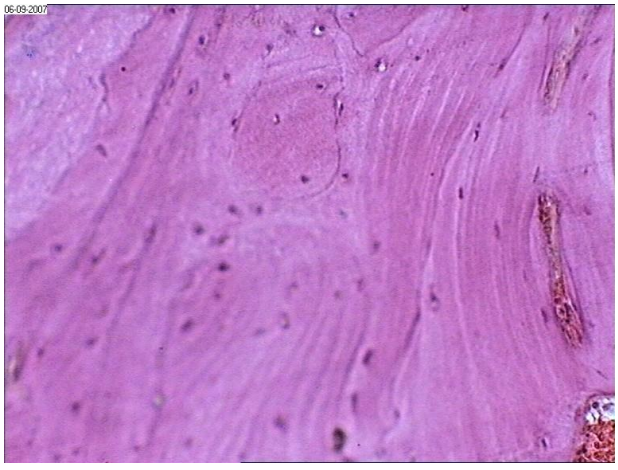

Figure 6