ABSTRACT
In oral cavity, localized gingival growths are one of the most frequently encountered lesions. Most of these are usually reactive rather than neoplastic in nature and it is difficult to differentiate them clinically. Histopathological examination should be used for the confirmatory diagnosis. Peripheral ossifying fibroma is one of the localized gingival lesions. Here, we present a case report of peripheral ossifying fibroma (POF) in 53 year old male patient.

Keywords: Gingival Overgrowth, Peripheral Cemento-Ossifying Fibroma, Peripheral Ossifying Fibroma.

INTRODUCTION
Different types of the overgrowth may occur on the gingiva, which are usually resulting of the reactive response to local irritation. These include focal fibrous hyperplasia, peripheral giant cell granuloma, pyogenic granuloma and peripheral ossifying fibroma. One of the infrequently occurring gingival lesions is peripheral ossifying fibroma (POF). It is a focal, reactive, non-neoplastic tumor-like growth of the soft tissue that often arises from the interdental papilla. Shepherd in 1844 first reported peripheral ossifying fibroma as alveolar exostosis. Later, in 1972 Eversol and Robin coined the term peripheral ossifying fibroma. Various terminologies has been used in the past for the peripheral ossifying fibroma like peripheral cemento-ossifying fibroma, peripheral odontogenic fibroma with cementogenesis, peripheral fibroma with osteogenesis, fibrous epulis, calcifying fibroblastic granuloma and peripheral fibroma with calcification, peripheral cementifying fibroma. The varied number of names used for fibroblastic gingival lesions indicates that there is much controversy surrounding the classification of these lesions.

We hereby reported a case of peripheral ossifying fibroma of the mandibular anterior region in a 53 year old male patient.

CASE REPORT
The 53 year old male patient came with a chief complaint of growth in the mandibular anterior region of the jaw since 3-5 months. The overgrowth was present in mandibular anterior region extending from 43 to crossing midline and extends upto 33. It was covering the mandibular anterior teeth, pedunculated, firm in consistency, pinkish-red in color, 3.3 X 2.7 X 2 cm in size and with slightly nodular surface (Fig. 1). It was not associated with pain or tenderness on palpation. No bleeding tendency was present on probing and no changes were seen in radiological examination. After routine blood investigations and patients consent, the excision of the lesion was done under local anesthesia. The tissue was sent for the histopathological examination (Fig. 2).

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presence of numerous fibroblasts and fibrocytes cells. (Fig. 3) There was also presence of calcifications in the connective tissue stroma. The calcifications at places were showing irregular bony trabecular tissue with osteocytes and osteoblasts cells (Fig. 4), while at other places globular cementum-like calcifications were present (Fig. 5 and 6). Based on all the clinical and histopathological findings, final diagnosis of peripheral ossifying fibroma was made.

The histopathological examination shown presence of parakeratinized stratified squamous epithelium of varying thickness and with irregular rete ridges. The underlying connective tissue was dense fibrocellular with presence of bundles of the collagen fibers arranged haphazardly and presence of numerous fibroblasts and fibrocytes cells. (Fig. 3) There was also presence of calcifications in the connective tissue stroma. The calcifications at places were showing irregular bony trabecular tissue with osteocytes and osteoblasts cells (Fig. 4), while at other places globular cementum-like calcifications were present. (Fig. 5 and 6) Based on all the clinical and histopathological findings, final diagnosis of peripheral ossifying fibroma was made.
DISCUSSION

Ossifying fibroma occurs mostly in craniofacial bones and is generally categorized into two types, peripheral and central. The central type arises from the periodontal ligament adjacent to root apex or the endosteme and expands from the medullary cavity of the bone. On the other hand, the peripheral type shows a contiguous relationship with the PDL, occurring solely on the soft tissues overlying the alveolar process. In spite of confusing terminology, POF is not the peripheral counterpart of the central ossifying fibroma of the mandible and maxilla, but instead is a reactive gingival lesion. Peripheral ossifying fibroma may present as exophytic growth with sessile or pedunculated base and the color ranges from pink to red, with areas of ulceration. The surface of the lesion may be smooth or irregular. Interdental papilla is most frequently affected site and the average size is 1-2 cm. The male to female ratio ranges from 1:1.22 to 1:4.3 and the most frequently affected site and the average size is 1-2 cm. The male to female ratio ranges from 1:1.22 to 1:4.3 and the majority of the lesions occur in the second decade. The definitive diagnosis of POF is made histologically when there is stratified squamous epithelium covering an exceedingly cellular mass of connective tissue with presence of large numbers of plump, proliferating fibroblasts; fibrocytes intermingled throughout with delicate fibrillar stroma with areas of calcification. Histologically, a typical ulcerated POF can exhibit three zones: Zone I: The superficial ulcerated zone covered with fibrinous exudates and mixed with polymorphonuclear neutrophils and debris. Zone II: The zone below the surface epithelium composed almost exclusively of proliferating fibroblasts with diffuse infiltration of chronic inflammatory cells mostly lymphocytes and plasma cells. Zone III: More collagenized 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.

There is much controversy still exist about the origin or histogenesis of the ossifying fibromas. Some of the researchers consider it as neoplastic origin, while others as reactive lesion. In either case it originates from the cells of the periodontal ligament due to local irritation or trauma. Histogenesis of the peripheral ossifying fibroma remains controversial and there are two schools of thought proposed to understand the histogenesis:

1. Peripheral ossifying fibromas may initially develop as pyogenic granuloma that undergoes subsequent fibrous maturation and calcification. It represents the progressive stage of the same spectrum of pathosis.

2. Peripheral ossifying fibroma is due to inflammatory hyperplasia of cells of periodontal ligament/periosteum. The presence of mature connective tissue is because of response to local irritation, while chronic irritation of the periodontal and peristeal membrane causes metaplastic changes in the connective tissue leading to formation of bone or dystrophic calcification. Triggering factors such as subgingival plaque and calculus, dental appliances, poor quality of dental restorations, microorganisms and food lodgement initiate the inflammatory response.

The reasons for such hypothesis include occurrence of the peripheral ossifying fibroma in the gingiva (interdental papilla), the proximity of the gingiva to the periodontal ligament and the presence of oxytalan fibers within the mineralized matrix of some lesions. In addition, factors such as a high female predilection and a peak occurrence in the second decade of life suggest hormonal influences.

Buchner et al reported that the mineralized tissues observed in POF can be of three basic types:

I. Lamellar or woven bone surrounded by osteoid;
II. Cementum-like material appearing as spherical bodies; and
III. Dystrophic calcifications.

The dystrophic calcifications are usually seen in early, ulcerated lesions, whereas the older, mature, non-ulcerated lesions show well-formed bone and cementum-like material. Ossifying fibromas may be clinically and radiologically impossible to separate from cementifying fibromas. An attempt has been made by Endo et al to distinguish ossifying fibroma from cementifying fibromas and fibrous dysplasias by using immunohistochemical analysis for keratin sulfate and chondroitin-4 sulfate. In these the cementifying fibromas showed significant immunoreactivity for keratan sulfate and ossifying fibromas, and fibrous dysplasias showed intensive immunostaining for chondroitin-4-sulfate.

Some researchers stated that there is no histologic or biochemical difference between cementum or bone and the cementsicles term given due to presence of dysmorphic round basophilic bone particles. Thus they represent a dysmorphic product of this lesion analogous to the keratin pearls, which are a dysmorphic product of squamous cell carcinoma. The preferred choice of treatment for POF is surgical excision and submission for histopathological examination. Neville et al suggested that the lesion should be removed down to the periosteum and the adjacent teeth be scaled to remove any remaining irritants as recurrence rate for POF is high. The recurrence rate of the POF is said to be 7-20%. Recurrence probably occurs due to incomplete removal of lesion, repeated injury or persistence of local irritants.

CONCLUSION

Peripheral ossifying fibroma is a slowly growing reactive lesion of the gingiva. It is difficult to diagnose the various gingival lesions on clinical basis only. For diagnosis lesion must be examined thoroughly clinically, radiologically as well as histopathologically. Differential diagnosis should be ruled out carefully. After diagnosis, the complete surgical excision of the lesion along with removal of the etiological factors is important to prevent recurrence.

REFERENCES


