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PERIPHERAL OSSIFYING FIBROMA –A CASE REPORT

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Abstract

Peripheral ossifying fibroma, a reactive gingival disorder known under the generic term of epulis, is widely considered to originate from the cells of the periodontal ligament. Gingival growths are commonly encountered and most of these lesions are reactive in nature. The etiological factors may vary as a result of irritants such as trauma, microorganisms, plaque, calculus, restorations and dental appliances. We present a case of peripheral ossifying fibroma in the mandibular posterior region. The lesion is asymptomatic, non pedunculated and appears to be innocuous in appearance but radiographically shows appreciable extension. Histologically fibrous connective tissue stroma and osseous components dominate in the form of trabeculate of woven bone or lamellar bone. Treatment includes surgical removal of the lesion including the periosteum which reduces the high recurrence rate. There have been no further recurrences following wide resection. This article presents a clinical case of POF. In addition to presenting this new case of peripheral ossifying fibroma, the present study comments on the predisposing factors and treatment options, and suggests the importance of this disorder in the differential diagnosis of gingival lesions.

Key words: Peripheral ossifying fibroma, mandible, gingival, non-neoplastic enlargement, connective tissue stroma, woven osteoid

Introduction

Peripheral ossifying fibroma is a non-neoplastic enlargement of the gingiva and occurs with frequency and recurrences are not uncommon. Most of the gingival growths

namely pyogenic granuloma, fibrous hyperplasia, giant cell granuloma and peripheral ossifying fibroma are definite entities. Earlier many names have been proposed for this lesion including peripheral

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cemento-ossifying fibroma, peripheral odontogenic fibroma with cementogenesis, peripheral fibroma with osteogenesis, fibrous epulis, calcifying fibroblastic granuloma and peripheral fibroma with calcification. Gardner in 1982 suggested that the peripheral ossifying fibroma and peripheral odontogenic fibroma are two diverse lesions, the former being a common reactive lesion and the latter an unusual lesion. The extraction of adjacent teeth is seldom necessary or reasonable. Peripheral ossifying fibroma is a non-neoplastic enlargement of the gingiva and is usually the result of local irritation such by sub gingival plaque and calculus, dental appliances, poor quality of dental restorations or minor trauma. Clinically the POF are sessile or it may be pedunculated and are usually less than 2 cm but occasionally can reach the size of 6 cm.¹

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A 36 year female patient reported to the outpatient department with complaint of a slow growing painless lump present in the lower left premolar region since 19 months. The lesion

was seen to encroach towards the adjacent 1st molar occupying the buccal vestibule posteriorly. The lesion measured approximately 3.5 cm to 4 cm with smooth surface extending from buccal surface of premolar towards the vestibule.(fig1)



Fig 1: Intra oral view of the lesion

Lesion appeared to be reddish pink in color with broad basal attachment and was non-pedunculated which was non-fluctuant and did not show blanching on pressure and it was firm in consistency. No bleeding was associated with the lesion except mild discomfort which was painless was occasionally experienced on mastication.

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Radiographically panoramic and mandibular occlusal radiograph was obtained. The orthopantomogram revealed unilocular radiolucency associated with the premolars and involving the periapical regions of the 1st molar and extending towards the mesial root of the second molar with ill defined margins.(fig2)



Fig 2: Orthopantomogram view

Occlusal radiographs revealed expansion of buccal cortical plate with no obvious evidence of radioopacity. Anteroposteriorly the lesion is seen to involve the canine, premolars and the 1st molar region; it measures approximately 5.5.to 6 cms. Mesiodistally it is seen to extend as a semicircular radiolucency extending from

the canine towards the mid root portion of 1st molar. Crest of the alveolar bone is resorbed. No abnormality is seen on the lingual aspect.(fig3)

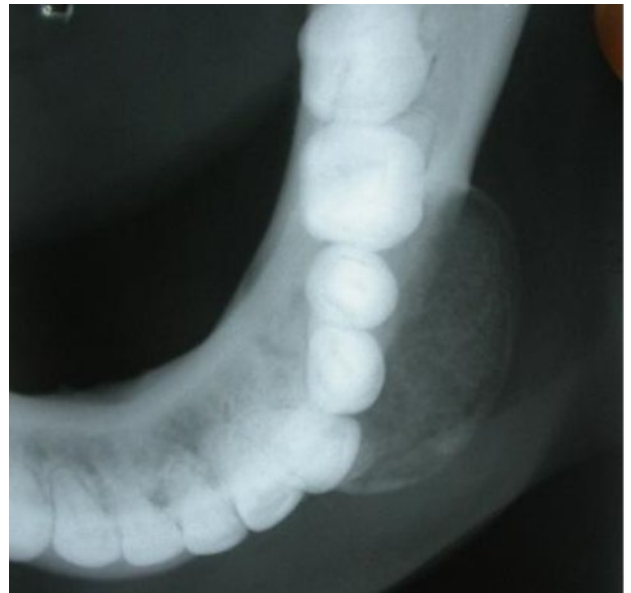


Fig 3: Occlusal view

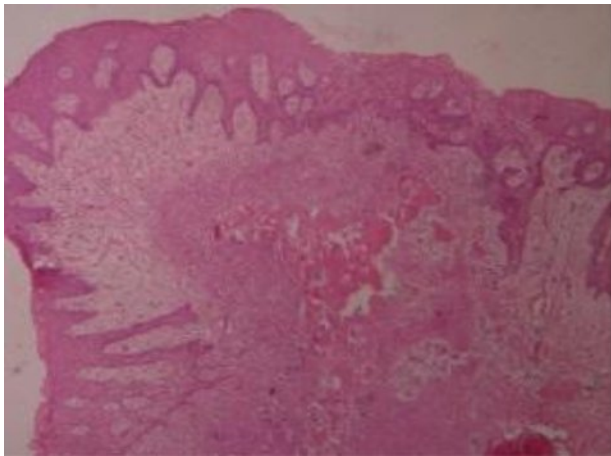
Differential diagnosis includes multilocular cysts, giant cell lesion of hyperparathyroidism, multiple odontogenic fibromas and diffuse fibromatous lesions.

Incisional biopsy was performed and histopathologic diagnosis of peripheral ossifying fibroma was confirmed. After which excisional biopsy was done under local anaesthesia and the entire tissue was sent for detailed histological examination.

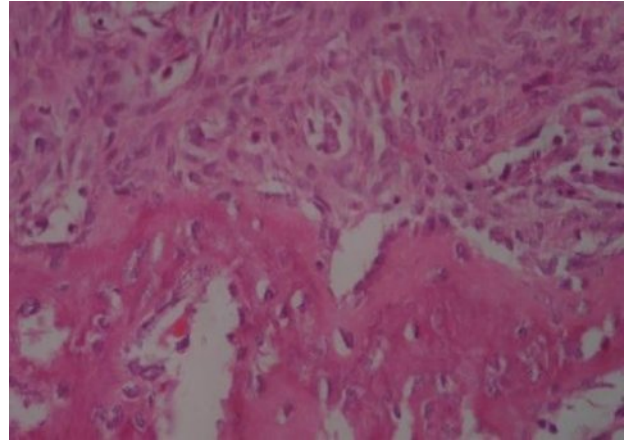
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Histopathological finding

The Hematoxylin and Eosin stained section shows parakeratinised stratified squamous epithelium which is irregular in thickness. The lesional tissue comprises of fibrous connective tissue stroma which is seen to contain large to small areas of osseous regions. The cellular stroma is filled with plump stellate and spindle shaped fibroblasts. The osseous areas show entrapped osteocytes and peripheral lining of osteoblastic cells are also evident. Woven osteoid which is irregularly eosinophilic is also seen. Mild chronic inflammatory infiltration along with thin compressed blood vessels is also present.



The low power (4X) view shows epithelium with underlying fibrous and osseous components.



High power (40 X) view showing immature woven bone with peripherally lined osteoblasts and plump to spindle shaped active fibroblasts.

Discussion

POF is a relatively uncommon, solitary, non-neoplastic gingival growth, coined by Eversole and Rovin ². Confusion has prevailed in the nomenclature of POF with various synonyms being used, such as peripheral cementifying fibroma, ossifying fibro epithelial polyp, peripheral fibroma with calcification, peripheral fibroma with osteogenesis, peripheral fibroma with cementogenesis,

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calcifying or ossifying fibrous epulis and calcifying fibroblastic granuloma³.

The etiopathogenesis of the POF is not known, trauma or local irritants such as sub gingival plaque and calculus, dental appliances, poor quality dental restorations, masticatory forces, food lodgments and iatrogenic factors may influence the development of the lesion. An origin from the cells of periodontal ligament has been suggested because of exclusive occurrence of POF from interdental papilla, the proximity of gingival to periodontal ligament, the presence of oxytalan fibres within in the mineralized matrix of some lesions, the age distribution which is inversely related to the number of lost permanent teeth, and fibrocellular response similar to other reactive gingival lesions of periodontal ligament origin⁴.

POF occurs 2-4 times more frequently in females than in males between the age of 25-35 years⁵. Only 0.5% cases are reported in the older age group.⁶ Interestingly, in the present case POF was diagnosed in a 36year old female

patient in the mandibular posterior region. The age criteria were also reported by Rajendra Baad and Kiran Jagtap.⁷

Approximately 60% of POFs occur in the maxilla and are found more often in the anterior region, with 55-60% presenting in the incisor-cuspid region⁸. In our case POF occurred in canine, premolars and 1st molar region. It usually measures less than 1.5 cm and rarely reaches more than 3 cm in diameter, but lesions of 6 cm and 9 cm have also been reported^{6, 9}. The surface may be either intact (34%)¹⁰.

The clinical differential diagnosis includes central giant cell granuloma (CGCG), pyogenic granuloma, central odontogenic fibroma, central hemangioma, and chondrosarcoma or osteosarcoma.⁶ It is possible to histologically differentiate CGCG and Central odontogenic fibroma from POF as CGCG contains giant cells whereas Central odontogenic fibroma contains odontogenic epithelium and dysplastic dentine as these features not seen in POF.⁸ Chondrosarcoma and osteosarcoma are less

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frequent gingival lesions. Although slight bony resorption may occur beneath POF, more destructive and non-innocuous bony changes typically are seen with malignant lesions. A band-like asymmetric widening of the PDL of involved teeth is another important finding suggestive of osteosarcoma or chondrosarcoma.

¹⁰ POF may be confused with fibrous dysplasia. ³ The most vital distinguishing feature being the presence of demarcation in POF as opposed to the merging shown by fibrous dysplasia with its surrounding bone. ¹¹

In addition, the variation in cellularity as well as in appearances of mineralized components serves to distinguish POF from fibrous dysplasia. Distinction between POF and osseous dysplasia on histologic grounds only may be challenging as both entities share the variation in stromal cellularity and appearances of mineralized material. Clinical presentation and radiographic appearances are usually influential.⁸

A confirmatory diagnosis of POF is made by histopathologic evaluation of biopsy

specimens. The following features are usually observed during microscopic examination: 1) intact stratified squamous surface epithelium; 2) benign fibrous connective tissue with varying numbers of fibroblasts; 3) mineralized material consisting of mature, lamellar or woven osteoid, and 5) chronic inflammatory cells in lesions ^{1, 11}. All of these features were present in this case.

Conclusion

A slow growing gingival mass should raise a suspicion of a reactive gingival lesion such as POF. Histopathological examination is essential for accurate diagnosis. Once diagnosed, it is important to eliminate the etiologic factors of the lesion and tissue has to be histologically examined and the treatment must be directed towards avoidance of recurrence which generally consists of conservative surgical excision and scaling of the teeth and removal of associated periodontal ligament of the tooth. Close postoperative follow-up is required for preventing recurrence.

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