A RARE CASE OF PERIPHERAL OSSIFYING FIBROMA IN MANDIBLE -A CASE REPORT

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Abstract:

Peripheral ossifying fibroma is a localized gingival overgrowth which is reactive in nature. It is a non-neoplastic growth of the Gingiva. It shares unique clinical features and diverse Histopathological features. Usually peripheral ossifying fibroma occurs in maxilla. This case report comprises the gingival overgrowth that occuerd in the mandibular anterior region which makes it unique. This paper describes the case of 24 year old female patient reported with swelling in mandibular anterior region since 7 months.

Keywords: peripheral cemento-ossifying fibroma, peripheral ossifying fibroma, pyogenic Granuloma, basophilic dystrophic calcification

Introduction:

Peripheral ossifying fibroma was first reported by the Shepherd in 1844 as alveolar exostosis.[1] Eversol and Robin in 1972, later coined the term peripheral ossifying fibroma.[1]Daley and Wysocki have reported POF to be the third most common non-odontogenic tumors and the most common peripheral odontogenic tumor.[2] POF is an occasional growth of the anterior region of mandible and accounts for 3.1% of all oral tumors. About 60% of these tumors occur in maxilla and more than 50% of all cases of maxillary POF are found in the incisors and canine areas. It is typically seen as overgrowth of Gingiva on interdental papilla and it comprises 9% of all gingival growth.[3]

Clinically its shape is pedunculated or broad based, its surface is smooth, its color varies from pale pink to cherry red, its size is usually less than 1.5 cm in diameter and females are more commonly affected and anterior maxilla is the most prevalent location.[3] It is diagnosed by clinical inspection and biopsy.[4] It represents a maturation of existing peripheral giant cell Granuloma or a pyogenic granuloma.[3] There is 16-20% of recurrence rate.[5]

The reasons for recurrence include incomplete removal of lesion,failure to eliminate local irritant and difficulty in access during surgical manipulation due to intricate location of POF in interdental areas. Deep excisions have been preferred to prevent recurrences.[5]

Case Report:

A healthy 24 year old female patient reported to the Department of Periodontics, SD, Dental college and hospital, Parbhani, Maharashtra, with the chief complain of swelling in lower front region of the jaw since 7 months [Figure 1]. Her past medical history was insignificant. Swelling was present as a small nodule 7 months ago which was painless and it gradually increased to the reported size. The lesion was seen to interfere in occlusion and bleeding was noticed while brushing and on mastication. Patient did not give any history of trauma, injury or food impaction.

On examination, the patient's lips were competent and oral hygiene was fair. There was a reddish swelling in the left mandibular region which was extended from distal aspect of central incisior to mesial aspect of canine involving marginal, attached and interdental gingiva. The growth measured 10 mm × 7 mm superoinferiorly -anterioposteriorly. There was no lingual extension of the lesion. The surface of this lesion was nodular, with irregular margins and no ulceration. The growth was considerably hard in consistency, sessile and not easily movable. It was non fluctuant, nonreducible and

noncompressible with moderate bleeding on probing.

The clinical differential diagnosis for the present case were Traumatic fibroma, Irritational fibroma, Pyogenic granuloma, Peripheral Giant Cell Granuloma, Peripheral Ossifying Fibroma and provisional diagnosis of Pyogenic Granuloma for the gingival growth.

An intraoral periapical radiograph of the mandibular left central incisor, lateral incisor and canine showed no underlying bony involvement.

Prior to surgical excision, Phase I therapy was performed thoroughly and consent was taken from the patient. In investigations, a complete hemogram revealed values within normal limits. Surgical excision of the lesion was performed under local anesthesia and antibiotic coverage. To prevent recurrence, complete removal of the lesion was ensured and underlying surface was thoroughly curetted. After control of bleedings periodontal dressing (coe-pack) was placed. Prescription of pain killer and chlorhexidine mouthwash was given to the patient. The excised tissue was 10 mm by 7 mm in size [Figure 4 and Figure 5], reddish pink in color and firm in consistency. To confirm its diagnosis the excised tissue was sent for histopathological examination. The patient was recalled after one week for review and showed uneventful healing of the excised area. Then at 6 months recall visit there was no recurrence of the growth observed. Recall visits were necessary to rule out recurrence of the lesion.

Histological section showed fibro-cellular connective tissue interspersed with plump fibroblasts in between the collagen bundles, surfaced by parakeratinzed stratified squamous epithelium. Basophilic dystrophic calcification in the form of spherules were seen. Many round to oval calcified masses and few ossifications were noted. Dense cellularity surrounding the calcifications were seen. All these histopathological features were diagnostic of Peripheral ossifying fibroma.The follow-up of the case showed normal healing of the area [Figure 6].

Discussion:

Commonly used synonyms for Peripheral ossifying fibroma is calcifying fibroblastic granuloma, peripheral fibroma with calcification, peripheral cementifying fibroma, and calcifying or ossifying fibrous epulis. The nomenclature of these lesions is done in such a way so as to highlight the difference in nature of growth, location of growth, origin and the dominant proliferating histological component/cells in the lesion.

Menzel first described the lesion ossifying fibroma in 1872, but its terminology was given by Montgomery in 1927.[6] Peripheral ossifying fibroma occurs mostly in craniofacial bones and categorized into two types central and peripheral. The central type of ossifying fibroma arises from the endosteum or the periodontal ligament (PDL) adjacent to the root apex and expands from the medullary cavity of the bone, and the peripheral type occurs on the so tissues overlying the alveolar process. [7]

Also, a lesion may arise due to inflammation because of a stimulus and is called as a “reactive lesion” or it can be truly “neoplastic” where it is classified as a benign or a malignant neoplasm. POF is characterized by a high degree of cellularity usually exhibiting bone formation, although occasionally, cementum-like material or dystrophic calcification may also be found.[8]

Clinically, the lesion appears as a nodular mass which may be pedunculated or sessile, pink to red in color and surface is usually but not always ulcerated. In the present case also, the lesion occurred in 24 year aged female in mandibular anterior region and appeared as a nodular reddish pink growth without ulceration.

POF is a solitary, slow growing nodular to POF however POF lacks the purple or blue discoloration commonly associated with peripheral giant cell granuloma and radiographically shows flecks of calcification.[9]

It is possible to histologically differentiate PGCG and peripheral odontogenic fibroma from POF as PGCG contains giant cells, whereas peripheral odontogenic fibroma contains odontogenic epithelium and dysplastic dentin ; all the features are not seen in POF.[10]

Histopathologically, the lesion showed stratified squamous epithelium covering an exceedingly cellular mass of connective tissue made up of plump fibroblasts, fibrocytes, fibrillar stroma

and areas of mineralization with multinucleated giant cells near them in some cases. The mineralization may consist of bone, cementum-like material or dystrophic calcifications[9]. 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[11] as was evident in the present case also.

The clinical differential diagnosis of POF includes all the nodular lesions which occur on gingiva (as mentioned before). Histopathologically, it is very important to understand the difference between the similar sounding lesions, i.e. POF, Peripheral odontogenic fibroma (POdF), central ossifying fibroma (COF) and central odontogenic fibroma (COdF).

Treatment includes local surgical excision and oral prophylaxis.[12] Follow up is essential because of the recurrence rates. Recurrence is due to incomplete excision and/or due to persistence of local factors.[13]

Conclusion:

POF shares a varied clinico-pathological presentation. Substantial overlap exists between various focal reactive overgrowths of gingiva. Clinico-pathological characteristics may vary and on the contrary to the usual presentation, our case presented a different site of POF. The accepted treatment protocol includes surgical excision followed by histopathologic evaluation and follow-up and may present a high recurrence rate compared with other reactive lesions. Identification of any reactive lesions requires the formulation of differential diagnosis to enable accurate patient evaluation and management.

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Figures:

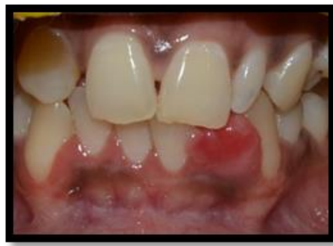

Figure 1: Pre clinical

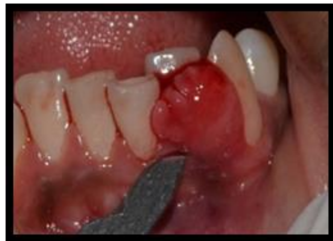

Figure 2: Incision given

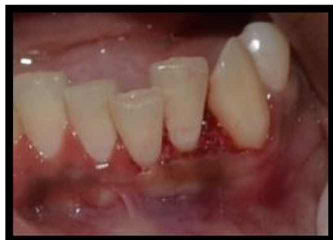

Figure 3: Immediate post-operative

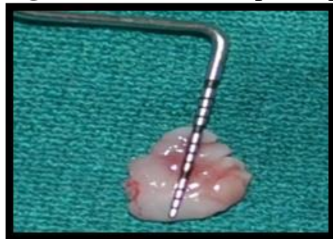

Figure 4: Excised lesion measuring 10 mm in height

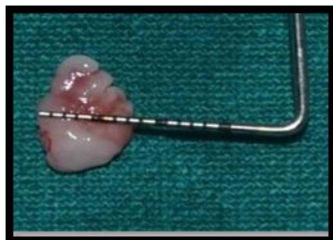

Figure 5: Excised lesion measuring 7 mm in width

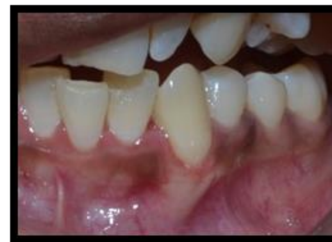

Figure 6: Post operative at 6 months follow up

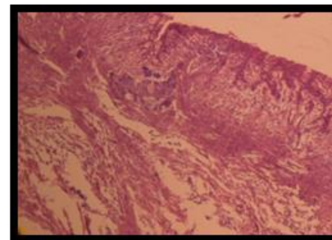

Figure 7: Photomicrograph showing stratified squamous parakeratinized epithelium with numerous calcified structures within connective tissue stroma (H and E, × 4X)

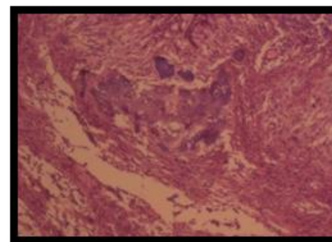

Figure 8: Photomicrograph showing Scattered basophilic calcified structures and increased cellularity around ossification (H and E, × 10X)

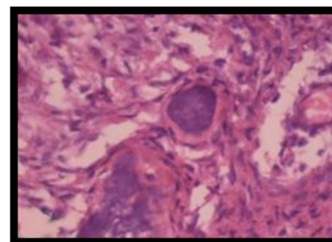

Figure 9: Photomicrograph showing fibro-cellular stroma with basophilic dystrophic calcification in the form of spherule (H and E, × 40X)

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