

PERIPHERAL OSSIFYING FIBROMA IN THE ANTERIOR MAXILLA OF A PEDIATRIC PATIENT – A CASE REPORT

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ABSTRACT: Localized gingival growths are one of the most frequently encountered lesions in the oral cavity. Most of these enlargements are non-neoplastic and reactive by nature. These reactive gingival lesions arise as a result of constant and chronic irritation of gingiva from plaque, calculus, food impactions, irregular restorations, low grade trauma and dental appliances. On clinical examination, it is not always possible to differentiate one specific gingival enlargement from other. To identify these lesions, histopathological examination is required. One of such seen entities is peripheral ossifying fibroma (POF) that is diagnosed by histopathological examination. Peripheral ossifying fibroma is a reactive benign lesion. This is a clinical report of 10 year old female child patient with peripheral ossifying fibroma in the maxillary anterior region with treatment and 6 months follow-up.

KEYWORDS: Peripheral ossifying fibroma, Reactive lesion, Gingiva.

INTRODUCTION

Solitary gingival enlargements are the reactive gingival lesions that evolve as a result of constant and chronic irritation of the gingiva from plaque, calculus, food impactions, irregular restorations, low grade trauma and dental appliances. These focal overgrowths are identified as specific entities histologically and uniquely by their characteristic morphology. The reactive lesions that occur specifically on the gingiva include peripheral ossifying fibroma, peripheral giant cell granuloma, pyogenic granuloma and focal fibrous hyperplasia¹.

Peripheral ossifying fibroma is a nodular mass either pedunculated or sessile and it usually emanates from the interdental papilla. Peripheral ossifying fibroma is a rare clinical entity that comprises about 1-3% of oral lesions biopsied². It can occur at any age, but particularly identified among young adults. A study by Cundiff et al among 365 cases reported that 50% of the lesions occurred between 5 and 25 years of age with the peak incidence at 13 years. Female to male predilection for occurrence a ratio ranging from 2 : 1 to 3 : 2³ was reported. This article presents a case report of a 10 year old female patient with peripheral ossifying fibroma in the anterior maxillary region.

Case report

A healthy 10 year old female patient was referred to the Department of Pedodontics and Preventive Dentistry

by a private practitioner with a chief complaint of a 'painless lump' behind her upper front teeth. On elaborating the chief complaint the reddish purple lump was present for 1 month. Swelling was initially small in size and was left unnoticed. Later the swelling gradually increased in size over a period of time and came into the attention of the parents when it was seen behind the front teeth when the child was talking. The swelling was asymptomatic during all its stages and occasionally, bleeding occurred when she brushed her teeth.

Clinical examination

Intraoral examination revealed a well-circumscribed, erythematous, firm swelling located on the palatal mucosa of the right maxillary central and lateral incisor (**Fig 1**). The lesion was non tender, non ulcerated, and overlying mucosa appeared normal with surface irregularities caused by the lower incisor indentations (**Fig 2**). Clinical examination also revealed an erythematous maxillary central papilla from the facial aspect and palatally, the lesion appeared exophytic and nodular. It measured approximately 20 mm laterally, 10 mm in the anterior-posterior direction and 6 mm thick. It extended from 5 mm to the left of the palatal midline to 15 mm to the right of the midline. The lesion appeared reddish-pink and was slightly pedunculated with what appeared to be a broad based attachment. The lesion was not fluctuant, and it did not

blanch with pressure, but had a rubbery consistency. It was tender to firm pressure, but not to light palpation.



Fig 1. Lesion on the palatal aspect of upper incisors



Fig 2. Lower incisor indentations on the lesion



Fig 3. Anterior maxillary occlusal view

Radiographic examination

To evaluate the extend of bony involvement and erosion caused by the swelling an anterior maxillary occlusal and panoramic radiographs were taken. No radiological signs of involvement of alveolar ridge or root resorption was evident.(Fig 3).

Diagnosis

Intraorally local deposits and supragingival calculus were seen in the palatal surface adjacent to the maxillary anteriors which led to the provisional diagnosis of pyogenic granuloma. Differential diagnosis included irritational fibroma, peripheral giant cell granuloma, peripheral ossifying fibroma and peripheral odontogenic fibroma. Hence, excisional biopsy of the swelling was planned, to subject the specimen for histopathological confirmation.

Treatment

Under local anaesthesia, the lesion was surgically excised and the specimen was submitted to oral pathology division for histopathological analysis. Adjacent teeth were scaled to remove the local irritants.

Histopathological Examination

Histopathological examination showed ulcerated stratified squamous surface epithelium in association with a cellular connective tissue. The underlying connective tissue exhibits proliferation of spindle shaped and stellate shaped cells. The connective tissue also showed hematoxyphilic globules of calcification. In some areas calcified masses have differentiated into osseous tissue. The foci showing ulceration exhibits mixed inflammatory cell infiltrate. The connective tissue also showed collagen fibres and vascular spaces. The histopathological features were suggestive of peripheral ossifying fibroma. (Fig.4)

Follow up

The patient was recalled after 2wks for a follow-up examination. The surgical site appeared to be healing well. The case was reviewed again after 6 months and showed no signs of recurrence of the lesion.(Fig 5).

Discussion

There are two types of ossifying fibromas: the central type and the peripheral type. The central type arises from the endosteum or the periodontal ligament adjacent to the root apex and causes the expansion of the medullary cavity. The peripheral type occurs solely on the soft tissues covering the tooth-bearing areas of the jaws. Central counterpart was found to exhibit increased proliferative activity when compared to peripheral counterpart⁵.

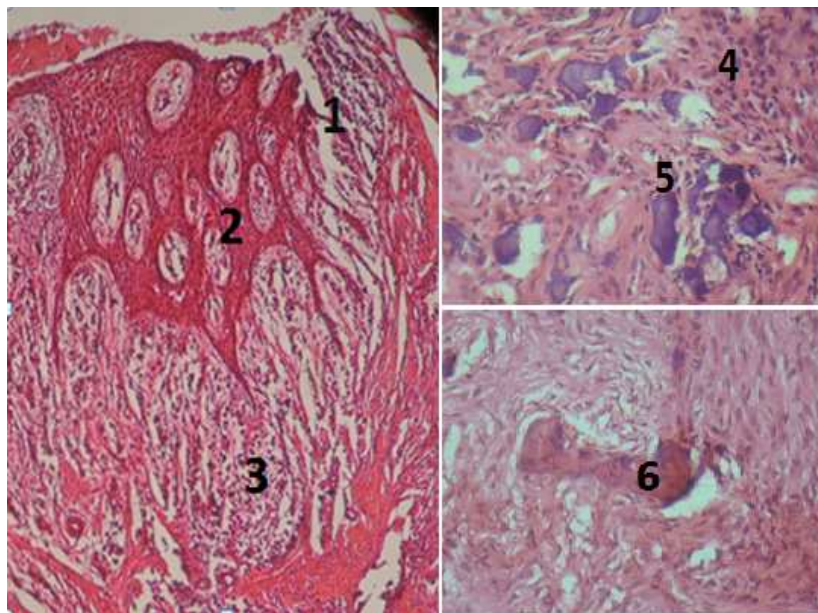


Fig.4. Histological section of the lesion showing 1.Ulcerated epithelium 2. Proliferating epithelium in arcading pattern. 3. Intense inflammatory infiltrate. 4. Cellular connective tissue with spindle and plum shaped stromal cells. 5. Foci of calcification 6. Foci of ossification.

The term peripheral ossifying fibroma was coined by Gardner in 1982 for a lesion that is reactive in nature and is not the extrasosseous counterpart of a central ossifying fibroma (COF) of the maxilla and mandible⁴. Peripheral ossifying fibroma elaborate bone, cementum and spheroidal calcifications, which has given rise to various terms for this reactive lesion including peripheral cemento-ossifying fibroma. When bone predominates, 'ossifying' is the appellation; while the term 'cementifying' has been assigned when curvilinear trabeculae or spheroidal calcifications are encountered. When bone and cementum-like tissues are observed, the lesions have been referred to as peripheral cemento-ossifying fibroma (Yadav and Gulati, 2009).

The peripheral ossifying fibroma is considered to be reactive rather than neoplastic in nature. Eventhough the pathogenesis of this lesion is uncertain, some peripheral ossifying fibromas are thought to develop initially as pyogenic granuloma as they undergo fibrous maturation and subsequent calcification and are clinically and histopathologically similar⁶.

The peripheral type of ossifying fibroma is thought to originate from the periodontal ligament due to their exclusive occurrence in the gingiva (interdental papilla), and the proximity of the gingiva to the periodontal ligament, and the presence of oxytalan fibers within the mineralized matrix of some lesions⁷. The mature fibrous

connective tissue proliferates excessively in response to gingival injury, gingival irritation, subgingival calculus or a foreign body in the gingival sulcus. Chronic irritation of the periodontal membranes due to local irritants causes metaplasia of the connective tissue and initiates the formation of bone or dystrophic calcification⁸.

Hormonal influences may play a role, given the higher incidence of POF among females, increasing occurrence in the second decade and declining incidence after the third decade of life⁹. The rare manifestation of multicentric occurrence points to a role of genetics in the pathogenesis of this disease¹⁰.

These fibromas is seen in a range of colours from red to pink, and the surface is frequently but not always ulcerated. Red, ulcerated lesions mimic pyogenic granulomas; the pink non ulcerated ones are clinically similar to irritation fibromas. Although they are generally < 2 cm in diameter, size can vary; reports range from 0.2–3.0 cm to 4 mm–8 cm and some lesions may be as large as 9 cm in diameter^{3,4}.

The peripheral ossifying fibroma is predominantly a lesion of teenagers and young adults. Almost two thirds of all cases occur in females. There is a slight predilection for the maxillary arch, and more than 50% of all cases occur in the incisor-cuspid region. Usually the teeth are unaffected; rarely, there can be migration and loosening of adjacent teeth⁴.



Fig 5 . Follow up after 6 months

Radiographically, in most cases there is no apparent underlying bone involvement visible on the radiograph. But at times these fibromas can cause superficial erosion of the bone³.

The treatment of choice for the peripheral ossifying fibroma is local surgical excision with submission of the specimen for histopathologic examination. The excision is done down to periosteum because recurrence is more likely if the base of the lesion is allowed to remain. The adjacent teeth should be thoroughly scaled to eliminate any possible irritants. The lesions tend to recur with some frequency and, repeated recurrences are not uncommon. In the series of Cundiff, 16% of the cases recurred, while in a series of 50 cases reported by Eversole and Rovin, the recurrence rate was 20%^{3,4}. Moreover, the recurrence rate of the POF has been considered high for reactive lesions and it probably occurs due to incomplete initial removal, repeated injury, or persistence of the local irritant^{9,10,11}.

Cuisa and Brannon analysed a series of 134 pediatric peripheral ossifying fibroma and found that the average time interval for the first recurrence is 12 months¹¹. Early surgical treatment in children including removal of identifiable etiological factors is required to obtain satisfactory gingival repair and to minimize the possibility of recurrence^{12,13}.

CONCLUSION

POF is a relatively slow advancing lesion with generally limited growth. It represents a reactive non-neoplastic lesion of connective tissue. Its asymptomatic nature makes it progressive over a long period of time before patients seek any form of treatment. A slowly progressive pink soft tissue gingival over-growth in the anterior maxillary arch of an adolescent should raise suspicion of a POF.

Treatment modality consists of surgical excision of the lesion, scaling of adjacent teeth. Regular postoperative follow-up is required because of the growth potential of incompletely removed lesions and high recurrence rate.

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