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Case report

Peripheral Ossifying Fibroma in Mandible: A Rare Case Report

Bharath Bhushan¹, Anju Bhushan^{1,*}, Elizabeth Moirangthem^{1±}, Nitin Sharma^{1,¥}, Neha Bhargava^{1,£}, Tarun Sethi^{1,£}, Chiranjeev Saini^{1,≠}

Affiliation:

¹Professor and Head of Department of Pediatric and Preventive Dentistry, ^{1,*}Professor and Head of Department of Oral Pathology and Microbiology, ^{1,±}Post Graduate Student, Department of Pediatric and Preventive Dentistry, ^{1,¥}Reader, Department of Pediatric and Preventive Dentistry, ^{1,£}Senior Lecturer, Department of Pediatric and Preventive Dentistry, ^{1,£}Senior Lecturer, Department Of Pediatric and Preventive Dentistry, ^{1,≠}Post Graduate Student, Department of Orthodontics and Dentofacial Orthopedics, Rajasthan Dental College and Research Centre, Bagru Khurd, Jaipur, NH-8, Rajasthan, India

The name of the department(s) and institution(s) to which the work should be attributed:

Rajasthan Dental College and Research Centre, Bagru Khurd, Jaipur, Nh-8, Rajasthan, India

Address reprint requests to *Dr Elizabeth Moiranthem.

Rajasthan Dental College and Research Centre, Girls Hostel, Bagru Khurd, Jaipur, Nh-8, India or at drelizabeth89@gmail.com

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ABSTRACT:

Peripheral ossifying fibroma is one of many localized reactive lesions occurring on the gingiva which includes focal fibrous hyperplasia, pyogenic granuloma and peripheral giant cell granuloma. It is a solitary overgrowth of the gingiva known to arise from the cells of the periodontal ligament. As lesions with similar clinical presentation makes it difficult to diagnose, it makes histo-pathological investigation essential to positively identify the lesion. The present case report highlights the diagnosis and management of peripheral ossifying fibroma in the anterior mandible region of a female child patient.

KEYWORDS: Peripheral ossifying fibroma; calcification; central-ossifying fibroma.

INTRODUCTION

Gingival growths are one of the most frequently encountered lesions in the oral cavity. Peripheral ossifying fibroma (POF) is a focal, reactive, non-neoplastic tumor-like growth of the soft tissue that often arises from interdental papilla¹. The term POF, coined by Eversol and Robin is relatively a common gingival overgrowth usually arising from interdental papilla and is considered to be reactive rather than neoplastic in nature² mainly affecting females in the second decade of life (50% of patients being between 5-25 years of age).

The lesions are most often located anterior to the maxillary molars and occasionally seen in maxilla^{3,4}. The etiopathogenesis of POF is unclear with trauma or local irritants such as subgingival plaque and calculus, ill fitting dental appliances, poor-quality dental restorations, micro-

organisms, trauma from occlusion, & food lodgement being implicated in its etiology^{5,6}.

Elimination of local etiological factors followed by surgical excision of the lesion is the preferred treatment.

Excision of the PDL and the periosteum at the base of the lesion will reduce the rate of recurrence which stands reported as 8-20%⁷. Here we present a case report of a 12 year old female child patient with occurrence of peripheral ossifying fibroma in mandible anterior region following surgical excision of a lesion previously diagnosed as inflammatory fibrous hyperplasia.

CASE REPORT

A 12 year old girl reported to the Department of Pediatric and Preventive Dentistry, Rajasthan Dental College and Hospital with chief complaint of presence of soft tissue mass in the lower front

teeth region associated with difficulty while brushing. There was no relevant systemic history recorded. The patient gave history of soft tissue swelling in lower front teeth region six months back which was surgically excised and histopathologically diagnosed as inflammatory fibrous hyperplasia.

Evaluation of patient's facial profile revealed it to be dolichocephalic with prognathic maxilla and incompetent lips. On intra oral examination, presence of anterior deep bite and an exophytic

growth measuring approximately 1cm x 1cm extending from mesial surface of 41 to the middle of 42 was observed.

Lesion was found to be pedunculated and non-tender with overlying mucosa being intact and reddish in color. (Fig.1) Periodontal examination revealed presence of supragingival calculus i.r.t mandibular anteriors whereas radiographic examination displayed no angular bone loss. (Fig.2)



Figure 1. Intra oral view of the lesion in the first appointment.



Figure 2. Bone loss was not apparent.

Following detailed history, clinical and radiographic examination, provisional diagnosis of peripheral ossifying fibroma was made.

The treatment plan included patient education, scaling, correction of existing deep bite and surgical excision of the lesion

under local anaesthesia followed by periodic re-evaluation for any recurrence. Scaling and root planing was performed to eliminate local etiological factors and was followed by surgical excision down to periosteum using BP blade after ensuring that the haematogram was within the normal limits.



Figure 3. Excised tissue.

Patient was discharged with post-operative instructions and was prescribed analgesic, and antimicrobial rinse of 0.2% chlorhexidine gluconate twice-a-day for 1 week. The excised tissue was sent for histopathological examination (Fig.3).

Histopathological examination of the specimen revealed parakeratinised stratified squamous epithelium (Fig.5) which was ulcerated at some sites. The underlying connective tissue stroma comprised of delicate fibrillar stroma with proliferating fibroblasts & prominent vascularity at few areas. Dystrophic calcifications were seen scattered throughout stroma. Osteoid trabeculae (Fig.6) & mild chronic inflammatory infiltrates were also observed. The diagnosis was confirmed as peripheral ossifying fibroma based on both clinical and histopathological examination.

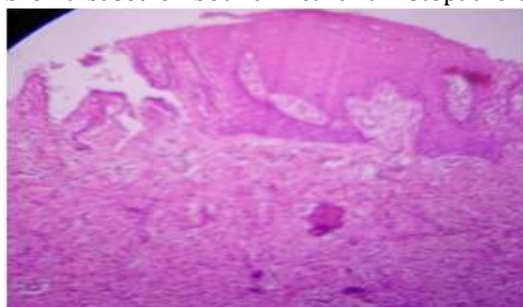


Figure 5. Parakeratinized stratified squamous epithelium underlying connective tissue stroma showing proliferative fibroblast cells.

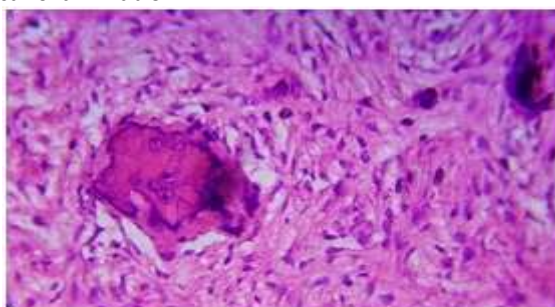


Figure 6. Calcification.



Figure 4. After 1 week follow up.



Figure 7. Follow up after 6 months.

The patient presented for a follow-up examination after 7 days post operatively and the surgical site showed uneventful healing (Fig. 4).

Patient maintained regular follow-up visits at 1 month & 6 months interval and re-evaluation showed no recurrence of the lesion (Fig. 7).

DISCUSSION

Intra oral ossifying fibromas occurring in both central and peripheral locations of the jaw bones have been described in the literature since the late 1940s. It has been suggested that POF represents separate clinical entity rather than a transitional form of pyogenic granuloma, peripheral giant cell granuloma or irritational fibroma⁶. Peripheral ossifying fibroma (POF) is a lesion of the gingival tissues representing up to 2% of all oral lesions that are biopsied⁸ and accounts for 3.1% of oral tumors and for 9.6% of gingival lesions¹.

Peripheral ossifying fibroma is not the peripheral counterpart of central ossifying fibroma. The central type arises from endosteum or the periodontal ligament adjacent to the root apex and expands from the medullary cavity of the bone⁹. On the other hand the peripheral type shows a contiguous relationship with the periodontal ligament, occurring solely on the soft tissue⁶.

Inflammatory hyperplasia originating in the superficial periodontal ligament is considered to be a factor in the histogenesis of POF⁶. The present case also reported a history of inflammatory hyperplasia suggesting its role in the histogenesis of POF.

The case presented with significant amount of plaque and calculus which are also implicated in the etiopathogenesis of the POF.

Almost two-third of all cases are reported to occur in females and a total of 80% of the lesions occur anterior to the molar area and over 50% of the lesions occur in the incisor and canine region¹⁰. Even though anterior maxilla is reported to be the most common location of involvement where lesion predominates in second decade of life, in contrast to the same, the lesion was noted in the mandibular anterior region in the present case.

Hormonal influences are reported to play a role given the higher incidence of POF among females, increasing occurrence in the second decade and declining incidence after the third decade^{1,6} which advocated for the findings of our case, where it was noticed in a female child who was 12 year old.

Clinically POF presents as exophytic, smooth surfaced pink or red nodular mass that is sessile or is less frequently seen as a pedicle. The lesion in

our case was observed to be pedunculated with intact surface mucosa, & red in color. The lesion usually measures to a size of less than 2 cm in diameter as was also seen in our case, where it measured approximately 1cm x 1cm, even though lesions of 6cm or as large as 9cm have also been reported^{6,11}.

Based on the size of the lesion, rate of mineralization and presence of calcified masses, radiographic changes can be seen in the form of radio opaque masses and slight bony resorption. However in the present case, no significant radiographic changes to that extent were observed.

Confirmatory diagnosis of POF is based on the histopathologic evaluation of the biopsy specimens. Histologically, a typical ulcerated POF can exhibit three zones:

Zone I: The superficial ulcerated zone covered with fibrinous exudate and enmeshed with polymorpho-nuclear 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, which can even reach the ulcerated surface in some cases^{4,12}.

The non-ulcerated POF lesions are similar to an ulcerated type, except for the presence of surface epithelium.⁴

The present case demonstrated para keratinized stratified squamous epithelium which was ulcerated at some areas. The fibro vascular stroma comprised of large number of proliferating fibroblasts intermingled in a delicate fibrillar stroma with an inflammatory component.

Cementum-like material is found in less than one-fifth of the lesions and dystrophic calcifications are more prevalent in ulcerated lesions⁵ as also reported in the present case where dystrophic calcifications were observed along with trabeculae of woven bone.

Complete surgical excision down to the periosteum is the preferred treatment as the recurrence rate is as high as 7-20% (Walters et al.; Buchner & Hansen; Kenney et al.; Gardner)⁴ which may be due to incomplete resection of the lesion, failure in sectioning the periodontal ligament and repeated injury or persistence of local irritants.

The occurrence of POF in the present case following surgical excision of inflammatory fibrous hyperplasia may be, due to an inadequate removal of the lesion at the time of surgical excision or the persistence of continued plaque and calculus accumulation both of which are implicated in the etiopathogenesis of peripheral ossifying fibroma.

The lesion was surgically removed ensuring that the base of the lesion including the periosteum and the periodontal ligament was totally excised. After 1 week follow-up, the surgical site showed uneventful healing. Patient maintained regular follow-up visits at 1 month & 6 months interval and re-evaluation showed no recurrence of the lesion.

CONCLUSION

Peripheral ossifying fibroma is relatively a common gingival over growth usually arising from inter dental papilla and is considered to be reactive rather than neoplastic in nature. Confirmatory diagnosis is based on the histopathological

evaluation of the biopsy specimens. Considering the recurrence rate of 8-20%, a proper surgical excision and minimizing the offending etiological factor and a periodic re-evaluation seems necessary.

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