

Case Report

Peripheral Ossifying Fibroma-A Case Report

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Abstract

Peripheral ossifying fibroma is benign reactive lesion present as gingival nodule in response to trauma, tissue irritants & overhanging restoration. Females are more commonly affected than males in their second or third decade of life. Maxilla with anterior site has more predilections as compared to mandible. Histologically P.O.F is a pyogenic granuloma which had undergone fibrosis and calcification therefore other term used to describe this is a fibrous epulis containing bone. It can be sessile or pedunculated, with or without ulceration, colour varies from pink to red and size is usually less than two cm. Radiographically no significant finding except in some extensive case in which superficial erosion of the underlying bone. Treatment was done by surgical excision along with removal of irritants. Recurrence rate of P.O.F is very high.

Key Words

Immediate complete denture, Immediate tooth replacement, Dental prosthesis.

Introduction

Among the group of localized gingival overgrowth, fibromas of the gingiva are most commonly present in the oral cavity because of various diverse range of pathologic process. These are reactive proliferative lesions rather than true neoplasms. These lesions are unifocal and originate from the gingival connective tissue or from the periodontal ligament⁽¹⁾. They are slow growing, spherical tumours that tend to be firm and nodular but may be soft and vascular. Clinically 'fibromas are inflammatory enlargement' and one of the variants of fibroma is peripheral ossifying fibroma in which mineralized tissue like (bone, cementum like material and dystrophic calcification) may be found⁽²⁾. Peripheral ossifying fibroma is one of the most commonly found reactive lesions of the gingiva in response to local irritation or trauma. The lesion may occur at any age range, but exhibits a peak incidence between the second or third decade of life with female predilection. About 60% of these tumours are found in the maxilla and more than 50% are found in the incisor and canine area⁽³⁾. There are two types of ossifying fibroma, i.e. central type and the peripheral type. The central type arises from the endosteum or the periodontal ligament adjacent to the root apex and causes expansion of the medullary cavity whereas the peripheral type occurs mostly on the soft tissue covering the tooth-bearing area of the jaws⁽⁴⁾. Other terms used to describe this lesion include peripheral cementifying fibroma, peripheral fibroma with cementogenesis, peripheral fibroma with calcification, calcified or ossified fibrous epulis and calcified fibroblastic granuloma⁽⁵⁾. This gingival growth clinically

presents as a sessile or pedunculated growth usually with ulcerated and erythematous surface or exhibits a colour similar to the surrounding colour of gingiva⁽⁶⁾.

This gingival growth is composed of a cellular fibroblastic connective tissue stroma associated with the formation of randomly displaced foci of mineralized product consisting of bone, cementum like tissue or dystrophic calcification⁽⁷⁾. Recurrence rate of this lesion is very high after surgical excision and probably due to incomplete initial removal of the irritants, repeated trauma at the site.

Case Report

A 18-year-old female patient reported with a chief complaint of swelling in the gingiva of her upper front teeth in the department of Periodontics and Oral Implantology (OPD) of Santosh Dental College and Hospital, Ghaziabad. The patient reported that this swelling was present since 2-3 months and had been increasing in size slowly to its present size. She also gave a history of tooth brush trauma in her front tooth 3-4 months back and bleeding from the gums while brushing her teeth. No relevant medical and family history was found. There was no involvement of pain with the swelling. Extra-oral examination revealed no significant findings with neither lymph node involvement nor any asymmetry of the face. History of any deleterious habit was also not found. Intra-oral examination revealed a well-circumscribed, non-tender, sessile, soft fibrotic growth in the region of the interdental papilla of the labial side of the upper incisors which is pinkish red in colour, the surface of the growth was slightly rough and erythematous in nature and measured approximately 5x5 cm in dimensions. (picture 1) Intra-oral periapical radiograph of 11,21 does not show any significant changes in the crestal bone.

Differential Diagnosis

The differential diagnosis consisted of irritational fibroma, pyogenic granuloma and peripheral giant cell granuloma, peripheral ossifying fibroma and peripheral cementifying

Quick Response Code



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fibroma.



Picture 1(Before scaling)



Picture 2(After scaling)

Treatment

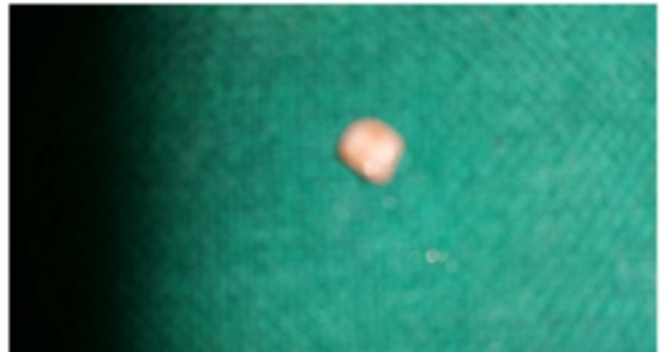
Full mouth scaling and root planning was started and completed in subsequent visits. And then patient was recalled after a week, but not much regression in the size of lesion was observed. So we decided for an excisional biopsy of this lesion. Under local anesthesia the lesion was excised completely using a scalpel and blade. Then deep scaling and rootplanning of 11,21 and adjacent teeth was done to remove the local irritants to prevent for any recurrence. The excised tissue in the formalin bottle was submitted for histological analysis. Site was covered with periodontal dressing. Post operative instructions and three days course of analgesic, antibiotics were given to the patient. Patient was motivated to maintain a good oral hygiene and recall after 10 days post operative examination.

Histopathology

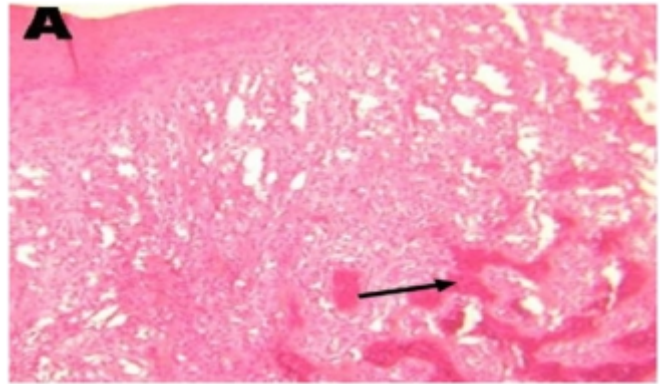
Shows highly cellular collagen fibre and proliferating plump fibroblast, with focal areas of trabecular bone lined by osteoclast. The covering stratified squamous epithelium was parakeratinised with focal areas of acanthosis, osteoid and cementicles were also found. The histological features supported the diagnosis of peripheral ossifying fibroma.



Picture 3 (Excised tissue)



Picture 4 Excised tissue of approximately 1x1cm



Picture (5) Histologic picture showing connective tissue stroma with calcification

Post operative

Patient presented for a follow up examination 15 days post operatively, surgical site appear to be healed well.

Discussion

The prevalence of total no of cases of peripheral ossifying fibroma is 3.1% of all oral tumors and for 9.6% of all gingival lesions. In 1872, Menzel described first time about P.O.F but in 1927 Montgomery assign its terminology.⁽⁸⁾ Intra oral ossifying fibroma have described in the literature since the late 1940s, it has been suggested that the peripheral ossifying fibroma represents separate clinical entity rather than a transitional form of pyogenic granuloma, peripheral giant cell granuloma and irritational fibroma.

Ossifying fibroma elaborates bone, cementum and spheroidal calcification which has name given rise to various terms for these benign fibro osseous neoplasm. when bone predominant "ossifying" is the application while the term 'cementifying' has been assigned when curvilinear trabeculae or spheroidal calcification are encountered. When bone and cementum like tissue are observed the lesion have been referred to as cement ossifying fibroma or Cementifying fibroma. Cementifying fibroma may be clinically and radiographically impossible to separate from ossifying fibroma⁽⁹⁾

In 1982 Gardener also described POF as reactive lesion and has a separate entity rather a extraosseous counterpart of a central ossifying fibroma of the maxilla and mandible.⁽¹⁰⁾

Bhasker.et. al termed these lesions as periphera fibroma with calcification, Arnott later described two lesions microscopically and gave the diagnosis of ossifying fibroma. The term peripheral ossifying fibroma was coined by Eversol and Robin. Though etiopathogenesis of Peripheral ossifying

fibroma is uncertain, an origin from cells of periodontal ligament has been suggested. The reasons for considering periodontal ligament for P.O.F include exclusive occurrence of P.O.F in the gingiva (interdental papilla) the proximity of gingiva to the periodontal ligament and the presence of oxalate fibres within the mineralized matrix of some lesions. Excessive proliferation of mature fibrous connective tissue is a response to gingival injury, gingival irritation, subgingival calculus or a foreign body in the gingival sulcus, chronic irritation of the periosteal and periodontal membrane causes metaplasia of the connective tissue with resultant irritation of bone for maturation and dystrophic calcification. It has been suggested that the lesion may be caused by fibrosis of granulation tissue. High female predilection, rare occurrence in the first decade and decline in the incidence after 30 years suggested that hormonal influence may be a lesional growth factor.

In this case patient had trauma few months back which may be the probable factor in etiopathogenesis of this lesion. According to the Mulcahy and Dahl and Cundriff there is high prevalence of ulceration i.e. 62% to 65% among these patients. The male: female ratio was equal in the second decade but female predominance seen in all other decades (5). The size of the lesion ranges less than 2cm in size normally but some large lesions are also reported in case series of ten cases in which size of the lesion reported to be in range from 2.5 to 9cm. In this kind of lesion is named as Giant peripheral ossifying fibroma (11). In the present case the dimensions are within the range but it can become large causing extensive destruction of adjacent bone, significant function and esthetic alteration.

Histological

It exhibits ulcerated or non ulcerated picture i.e. with intact stratified squamous epithelium. In ulcerated type three zones are identified

Zone; 1- The superficial ulcerated zone covered with an exudate consists of polymorph nuclear neutrophils and debris.

Zone; 2 - Zone beneath the epithelium composed of proliferating fibroblasts with diffuse infiltration of chronic inflammatory cells mostly lymphocytes and plasma cells.

Zone 3- In this zone more collagenized connective tissue with vascularity and high cellularity, osteogenesis consists of osteoid and bone formation, which can reach up to ulcerated surface in some cases. (8)

Radiographically features of p.o.f may vary: Radiopaque foci of calcification have been reported to be scattered in the central area of some lesion, underlying bone involvement is usually not seen in the radiograph. In rare instances superficial erosion of the bone is noted. (11) In the present case there is no such finding which indicated that this could be an early lesion.

Treatment

This kind of lesion should be completely excised either surgically or with a Laser, electrosurgery can also be done. And aggressive curettage of the adjacent tissue is required for prevention of recurrence. Recurrence rate of P.O.F is considered to be high because of incomplete removal of the lesion, repeated injury or presence of local irritants. According to a series of 134 cases of P.O.F analyzed by Cuisia and Brannon, the average time interval of first recurrence is 12

months (5).

Conclusion

P.O.F is slowly growing progressive tissue reactive lesion or a benign fibro-osseous lesion with significant growth potential. This lesion is mainly characterized by slow growing soft tissue nodule mainly involving the anterior maxilla in second decade of life. Many patients do not approach to a dentist as it is mainly asymptomatic during initial stages till the size increases considerably. These lesions should be early diagnosed, surgically excised and should be kept under observation to check for any recurrence. So close patient post operative follow-up is required along with good patient motivation to maintain the oral hygiene.

No Conflicts of Interest

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