

 <p>ISSN NO. 2320-5407</p>	<p>Journal Homepage: - www.journalijar.com</p> <p>INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)</p> <p>Article DOI: 10.21474/IJAR01/4504 DOI URL: http://dx.doi.org/10.21474/IJAR01/4504</p>	 <p>INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR) ISSN 2320-5407</p> <p>Journal homepage: http://www.journalijar.com Journal DOI: 10.21474/IJAR01</p>
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RESEARCH ARTICLE

PERIPHERAL OSSIFYING FIBROMA- A CASE REPORT.

Dr. V. Nandhini M.D.S¹, Dr. S. Gayathri M.D.S², Dr. Sumathi. H. Rao M.D.S² and Dr. Anand Padala Balanarayanan M.D.S².

1. Senior Lecturer- Periodontics, Sathyabama University Dental College& Hospital, Chennai.
2. Reader Periodontics, Sathyabama University Dental College& Hospital, Chennai.

Manuscript Info

Manuscript History

Received: 17 April 2017
Final Accepted: 19 May 2017
Published: June 2017

Key words:-

Isolated lesion, Peripheral ossifying fibroma, management

Abstract

Oral mucosa is constantly subjected to external and internal stimuli and therefore manifests a spectrum of diseases that range from developmental, reactive and inflammatory to neoplastic. The gingiva is often the site of localized growths that arise in succession to the hyper inflammatory reaction to the local irritants. Peripheral ossifying fibroma is one such reactive lesion which arises from the periodontal ligament with the high predilection in females. This article entails the case report of peripheral ossifying fibroma, its molecular pathogenesis, and its management.

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Introduction:-

Peripheral ossifying fibromas (POF) are locally reactive gingival lesions originating from the superficial periodontal ligament that are found most often in the anterior maxilla with a relatively high recurrence rate.¹ On the clinical level they share the similar features of the other reactive lesion as slow growing solitary nodular mass occurring commonly in the anterior interdental region that pose esthetic and oral hygiene challenges to the patient, henceforth the differential diagnosis are pyogenic granuloma, peripheral odontogenic fibroma and peripheral cemento ossifying fibroma.² Despite clinical similarities they exhibit distinct biologic and histological variation representing different stages of maturation. Owing to the high recurrence rate of the lesion it necessitates complete surgical removal of the lesion with the removal of the chronic irritants.

Case Report:-

A 21- year old female patient reported to the department with a slow- growing painless growth that had been present labially in the left incisor- canine region. The lesion started as a small nodule approximately three years earlier. Examination revealed 1cm × 1cm pedunculated, non-tender, firm, pinkish red growth present on the labial gingival in relation to maxillary left central incisors and canine(fig1). Radiographic examination revealed widening of periodontal ligament in relation to 22. The patient's past dental and medical history was non-contributory. The differential diagnosis was traumatic fibroma and pyogenic granuloma. After obtaining the informed consent, excisional biopsy of the lesion(fig2) was performed and degranulation was done by raising the flap during which dehiscence extending till the middle third of the root was noticed in the interdental area of 21 and 22(fig3). Histopathological stained sections show parakeratinized stratified squamous epithelium and dense fibrous connective tissue stroma. The connective tissue showed dense bundles of collagen fibres. Deep in the connective tissue were seen numerous ossifications in the form of bony trabeculae (fig4). As the recurrence rate of the

peripheral ossifying fibroma is high varying from 8% to 20% which can happen in the average time period of 12 months, patient was asked to come for review every month for one year (fig 5).



Figure 1:- Pre Operative View.



Figure 2:- Excision Of The Lesion Done.



Figure 3:- Dehiscence Till The Middle Third Of The Root.

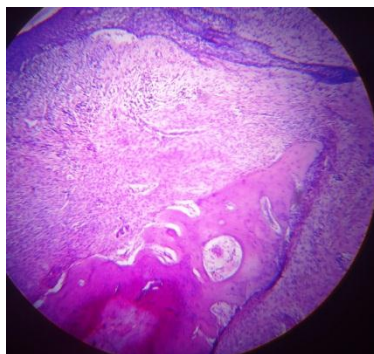


Figure 4:- H& E Section Showing Bony Trabaculae Deep In To The Connective Tissue.



Figure 5:0- Postoperative View.

Discussion:-

In 1982, Gardner coined the term peripheral ossifying fibroma for a lesion that is reactive in nature and is not the extraosseous counterpart of a central ossifying fibroma (COF) of the maxilla and mandible.³ 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 that is either pedunculated or sessile. The surface mucosal color ranges from red to pink, and the surface is frequently ulcerated. The mass usually arises from the interdental papilla which could be due to the proximity of the gingival to the adjacent periodontal ligament.⁴ The lesion though usually smaller than 1.5 cm in diameter can reach a much larger size and can cause separation of the adjacent teeth, resorption of the alveolar crest, destruction of the bony structure and cosmetic deformity. Radiographically focal area of calcification in the central area of the lesion with the superficial erosion of bone is seen but only in some cases.⁵ In the presented case report we could make out only the widening of the periodontal ligament in the periapical radiograph in relation to 22 suggesting its origin from the periodontal ligament, but while opening the flap bony dehiscence was seen in the labial aspect of 22. There is increased rate of occurrence in second decade females with declining incidence after the third decade suggesting role of hormones in the progression of the lesion.⁶ Though all the clinical features mimic the other reactive lesions they have distinct histologic feature. Peripheral ossifying fibroma is definitively diagnosed through the histopathological examination showing the following features 1) benign fibrous connective tissue with varying fibroblast, myofibroblast and collagen content, 2) sparse to profuse endothelial proliferation, and 3) mineralized material that may represent mature, lamellar (18%) or woven bone (50%), cementum-like material (13.6%), or dystrophic calcifications. Acute and chronic inflammatory cells are also seen.⁷ This confirms the origin of the peripheral ossifying fibroma from the undifferentiated mesenchymal cells of the periodontal ligament/ periosteum which has the inherent proliferative potential for bone or cementum.⁸ In the presented case report the histological section showed fibrocellular connective tissue with bony trabaculae lined by osteoblasts and entrapped osteocytes confirming the diagnosis of peripheral ossifying fibroma. The treatment of peripheral ossifying fibroma includes excision of the lesion along with the complete removal of chronic irritants as it causes metaplasia of the connective tissue in the periosteal and periodontal membranes and initiates the formation of bone or dystrophic calcification.⁹ Peripheral ossifying fibroma has got higher recurrence rate among the reactive lesions 8% to 20% due to the incomplete removal of the lesion or irritating factors during the surgical manipulation as the lesion is usually located in intricate location in the interdental area.¹⁰

Conclusion:-

The reactive lesions of the gingiva are difficult to be differentiated clinically in the initial stages due to the similar clinical appearance. Hence histopathological examination is mandatory for definitive diagnosis. Though its most accepted origin is from periodontal ligament but still further research is needed regarding its origin by using various advanced techniques like immunohistochemistry.

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