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Peripheral ossifying fibroma: A case report and review

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Abstract

Peripheral ossifying fibroma is a relatively uncommon, solitary, non-neoplastic lesion, predominantly seen in gingiva. Chronic irritation due to plaque, calculus, restorative or orthodontic appliances are thought to be responsible for the initiation of the lesion. Commonly used synonyms for POF include peripheral fibroma with calcification, calcifying fibroblastic granuloma, peripheral cementifying fibroma, and calcifying or ossifying fibrous epulis. This article presents a case of peripheral ossifying fibroma in a 25-year-old female along with the clinical, histopathologic, and treatment details.

Conclusion: Ossifying fibroma occurs mostly in craniofacial bones, the peripheral types how sa contiguous relationship with the PDL, occurring solely on the soft tissues overlying the alveolar process. The reasons for considering a PDL origin for POF include: exclusive occurrence of POF in the gingiva (interdental papilla).

Keywords: Peripheral ossifying Fibroma, Gingiva

Introduction

Most frequently encountered lesions in the oral cavity are gingival overgrowth. These lesions include irritational fibroma, pyogenic granuloma, peripheral ossifying fibroma and peripheral giant cell granuloma [1], one of the infrequently occurring gingival lesions is peripheral ossifying fibroma (POF). POF is a non-neoplastic enlargement of gingiva that is a reactive hyperplastic inflammatory lesion [2]. In most of the cases, these lesions are the result of trauma or chronic irritation such as plaque, calculus, masticatory forces, ill-fitting dentures, and poor-quality restorations [3]. POF is commonly seen in the second decade of life, with increased predilection in females around incisor-cuspid region of the maxillary arch. POF appears as a slow growing solitary mass which is usually sessile with a smooth or ulcerated surface [4]. Surgical excision is the preferred treatment after the removal of local irritant.

Case report

A 25-year-old Indian female patient reported to the Department of Periodontics, Dr. Syamala Reddy Dental College, Hospital and Research Centre Bangalore with complaint of a painless gingival growth in relation to her lower right front teeth. The swelling started as a small nodule that progressed gradually to the present size within a span of one month. The patient gave history of trauma due to food impaction, there was no significant medical history. An intra oral examination revealed generalized pink gingiva with a well-demarcated, non-tender, firm, focal, pedunculated growth arising from the interdental papilla of the mandibular right central and lateral incisors labially. The surface appeared slightly rough and erythematous. On palpation, the growth was not tender and was firm in consistency. An intraoral radiograph did not show any abnormalities. Provisional diagnosis of pyogenic granuloma was made for the gingival growth owing to the patients sex, age, location, colour and consistency of the lesion. Oral hygiene instructions were given to the patient and oral prophylaxis was done. An excision biopsy was performed after two weeks, the growth was excised conservatively followed by root planing and curettage. Histopathology showed the para keratinized stratified squamous epithelium and underlying connective tissue, which was composed of densely packed collagen fibers and fibroblast. Osteoid like material in the form of woven and lamellar bone is seen with whirling of fibroblast around them. Budding blood vessels are seen profusely. The histopathological features supported a diagnosis of POF.

Discussion

Ossifying fibroma occurs mostly in craniofacial bones and is generally categorized into two types: central and peripheral [5]. 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. On the other hand, the peripheral type shows a contiguous relationship with the PDL, occurring solely on the soft tissues overlying the alveolar process.

Eversol and Rovin were the first to describe the lesion POF as a relatively uncommon, solitary, nonneoplastic gingival growth. It was first reported as ‘alveolar exostosis’ in 1844 by Shepherd. Terminologies like ossifying fibroepithelial polyp, peripheral odontogenic fibroma, peripheral cemento-ossifying fibroma and calcifying fibroblastic granuloma have been used to describe this lesion [6, 7]. Eventhough etiopathogenesis of peripheral ossifying fibroma is uncertain, an origin from cells of the periodontal ligament has been suggested, reason being exclusive occurrence of POF in the gingiva (interdentalspapilla); The proximity of the gingival lesion to the periodontal ligament; The presence of oxytalan fibers within the mineralized matrix of some lesions [8].

The POF, reported in this case, is a focal, erythematous, non-neoplastic tumour-like growth of soft tissue often arising from the interdental papilla [1, 3]. It is a fairly common lesion, comprising nearly 3% of oral lesions biopsied in one study [2]. Approximately 60% of POF occur in females and more than 50% of all cases occur in the incisor cuspid region. Chronic irritation of the periosteal and periodontal membrane causes

metaplasia of the connective tissue, which initiates formation of bone or dystrophic calcification [9]. Plaque and calculus along with hormonal influences due to the patient’s age and sex might have been the cause for the gingival growth in the present case.

Differential diagnosis for gingival growth includes fibroma, pyogenic granuloma peripheral giant cell granuloma, peripheral ossifying fibroma and peripheral odontogenic fibroma. The definitive diagnosis of POF is made by histologic evaluation. Histologically, POF appears as a noncapsulated fibrous connective tissue with stratified squamous epithelium which is ulcerated in most of the cases. Fibroblastic proliferation with mineralized component, can be of three basic types: 1) bone that may be woven, lamellar or trabecular, sometimes surrounded by osteoid, 2) cementum like material that appears as spherical bodies resembling cementum or large acellular round to- oval eosinophilic bodies, which seemed to have coalesced to form islands in various sizes and shapes, 3) dystrophic calcification, which can range from small clusters of minute basophilic granules or tiny globules to large, solid irregular masses [10].

Treatment requires proper surgical intervention that ensures thorough excision of the lesion including the involved periosteum and the periodontal ligament. Thorough root scaling and planing should be accomplished. Follow-up is essential because of the recurrence rates varying from 8 to 20%. Recurrence is due to incomplete excision, inadequate periodontal management (root planing and curettage) and or persistence of local factors [11].



Fig 1: Pre-operative clinical photograph

Fig 2, 3: Dimensions measured by Williams probe (5*10) mm



Fig 4: Surgical excision done followed by scaling and root planning **Fig 5:** Excised tissue sent for biopsy

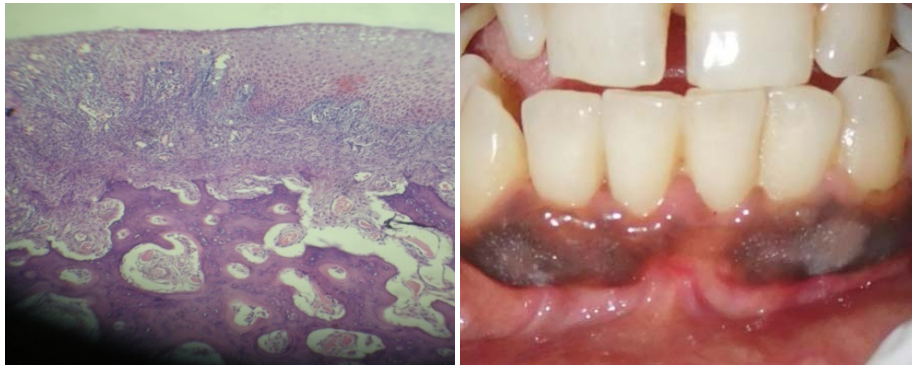


Fig 6: Histopathological view. (H &E) **Fig 7:** 1 year post-operative view

Conclusion

In conclusion, the etiology of POF is unclear, inflammatory hyperplasia originating in the superficial PDL is considered to be a factor. The POF presents as an exophytic, smooth surfaced, pink or red nodular mass can present as pedunculated nodule, or sessile. Accurate diagnosis is done by histopathologic examination. Once diagnosed, POF should be treated by total excision to prevent recurrence.

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