Case Report

Peripheral Cemento-Ossifying Fibroma: A Clinical Report

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ABSTRACT

Aim: To report a case of a Peripheral Cemento-ossifying Fibroma (PCOF) in a pediatric patient along with its management

Summary: Peripheral cemento-ossifying fibroma(PCOF) is a focal, reactive, non-neoplastic tumor-like growth of soft tissue commonly arising from the region of the interdental papilla. 'Ossifying' is the commonly used term when bony tissue predominates, whereas the term 'cementifying' has been assigned when calcifications/cementicle like masses are encountered. Bone and cementum-like tissues co-existing in a lesion with its characteristic features has been referred in literature as cemento-ossifying fibroma. Exuberant connective tissue response to chronic irritation due to plaque, calculus, restorative, or orthodontic appliances are thought to be responsible for the initiation of the lesion. Moreover, persistent irritation can cause metaplasia of the mesenchymal cells resulting in calcifications. The diagnosis is often challenging as the lesion masquerade as other reactive lesions of gingiva. Complete excision with curettage of the adjacent tissues are essential for prevention of its recurrence.

Keywords: Gingiva, Gingival growth; Peripheral Cemento-ossifying fibroma (PCOF), reactive gingival lesions, cemento-fibroma, gingival nodule.

INTRODUCTION

Growths of the gingival tissues are common and often result from underlying systemic disease, drug-induced stimulus, local iatrogenic factors, and dental plaque.[1] Such, solitary gingival enlargements in children are a relatively common finding and are usually the result of a reactive response to local irritation.[2] One such reactive lesion is Peripheral cemento-ossifying fibroma which is a relatively rare lesion with variable forms. It has been known by various synonyms in literature. Shepherd first reported this entity in 1844 as "alveolar exostosis". Epulis, peripheral fibroma with calcification, calcifying fibroblastic granuloma, peripheral cementifying fibroma, peripheral fibroma with cementogenesis, and peripheral cemento-ossifying fibroma are the names that have been used in the literature.[3] Neville has defined it as, a gingival nodule composed of a cellular fibroblastic connective-tissue stroma associated with the formation of randomly dispersed foci of a mineralized product consisting of either bone, cementum like tissue, or dystrophic calcifications.[4] PCOF holds pediatric significance that requires early recognition and treatment by a pedodontist. Therefore, the purpose of this paper is to highlight a case of a pediatric patient having PCOF along with its management.

CLINICAL PRESENTATION

A 13-year-old girl reported to the Department of Pediatric and Preventive Dentistry with a chief complaint of an abnormal soft mass present on the inner side of lower front teeth since 2 months. There were no associated symptoms and the lesion had gradually increased in size over the

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time. On clinical evaluation patient was found to have poor oral hygiene with moderate calculus. On inspection, a pink, fibrous nodular mass was present extending laterally from distal aspect of 41 to mesial aspect of 43 and covering incisal two-third of the crown lingually of approximately 1.2cm x 1 cm. The labial gingiva was not involved. The local irritants, plaque and calculus were abundant in the lingual region of mandibular anteriors (Fig.1). On palpation, it had a sessile base, was firm in consistency and non-tender. The lesion was neither fluctuant nor did it blanch with digital pressure.

Radiographic examination (IOPAR) in relation to 41,42 and 43 revealed ill-defined radio-opacity seen in relation to coronal portion of 41 but no apparent underlying bone involvement was seen (Fig. 2). Provisional diagnosis of PCOF was made. Clinically, the differential diagnosis included pyogenic granuloma, fibrous hyperplasia, peripheral ossifying fibroma and peripheral giant cell granuloma.

It was decided to treat the lesion by excisional biopsy or surgical excision. (Fig. 3) Following a thorough oral prophylaxis the lesion was completely excised under local anaesthesia (1:100000). This was followed by root scaling and planning of the adjacent teeth. The tissue removed was submitted for histopathological examination (Fig. 4 & 5)

Regular follow-up was done at 1 week which demonstrated remarkable healing (Fig. 6). At 1-month follow-up complete healing of the lesion was seen. The patient was reviewed at 3,6 and 12 months for any signs of recurrence and maintenance of meticulous oral hygiene and elimination of local irritants was ensured.

Figure 1: Pre-operative clinical picture of the lesion.

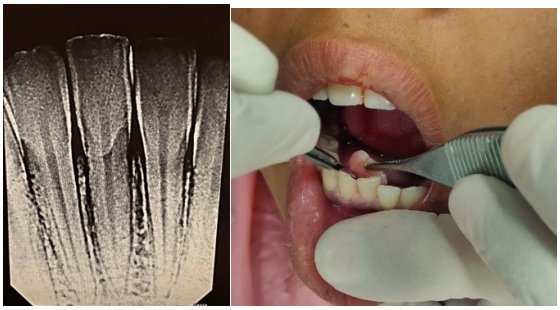

Figure 2: IOPAR i.r.t 41 and 42 showing ill-defined radio-opacity i.r.t. to C.E.J of 41. Figure 3: Excisional Biopsy

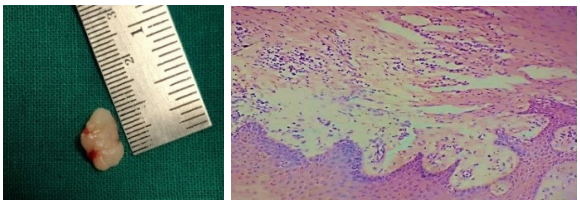

Figure 4: Excised mass. Figure 5: Histopathological view

DISCUSSION

PCOFs have been described in the literature since the 1940s. PCOF, reported in this case, is a relatively common clinical finding in children. The pathogenesis of this lesion is uncertain and it is thought to arise from the periosteal and periodontal membrane [5]. Peripheral cemento-ossifying fibroma (PCOF) accounts for 3.1% of all oral tumors and for 9.6% of gingival lesions. It has a higher predilection for females. It may occur at any age range, but predominantly affects adolescents and young adults, with a peak prevalence between 10 and 19 years.[6]

The main etiological factors of PCOF are trauma and chronic irritation, particularly from subgingival plaque and calculus.[7] Similar intra-oral picture with severe amount of calculus was seen in our case.

Although the etiopathogenesis of PCOF is uncertain, an origin from cells of the periodontal ligament has been suggested.[8] The reasons for considering a periodontal origin for PCOF include the exclusive occurrence of PCOF in the gingiva, the proximity of gingiva to the periodontal ligament and the presence of oxytalan fibers within the mineralized matrix of same lesions.[9] Excessive proliferation of mature fibrous connective tissue is a response to gingival injury, gingival irritation, subgingival calculus or

Figure 6: Follow-up clinical picture

a foreign body in the gingival sulcus. Chronic irritation of the periosteal and periodontal membrane causes metaplasia of the connective tissue and resultant irritation of bone formation or dystrophic calcification. It has been suggested that the lesion may be caused by fibrosis of the granulation tissue.[5]

Radiographically, PCOF may follow different patterns depending on the amount of mineralized tissue. Radio-opaque foci of calcification have been reported to be scattered through the central area of the lesion but not all lesions demonstrate radiographic calcifications. Underlying bone involvement is usually not visible on radiographs. In rare instances superficial erosion of bone is noted.[10] in the present case ill-defined radio-opacity was seen in relation to cervical margin of tooth 42 indicative of its fibro-osseous nature and attachment of the base of the lesion.

The preferred treatment is surgical, consisting of resection of the lesion as well as curettage of its osseous floor (Periodontal ligament and Periosteum) and scaling of adjacent teeth, as was performed in this case. Healing was uneventful and the patient has remained asymptomatic since 1 year. If correctly managed, Prognosis is excellent and recurrence is rare.[11,12] The recurrence rate of 8% to 20% is probably due to incomplete removal of the lesion, repeated injury or persistence of local irritants.[5]Due to the recurrence rate of the POF it is essential to obtain a histologic diagnosis for this lesion, as is recommended for all reactive gingival lesions. Histologically, the POF in our case revealed para-keratinized stratified squamous epithelium overlying a moderately dense, hyper cellular connective tissue stroma, elongated rete ridges and proliferating fibroblasts along with spicules of bony trabeculae, calcified material resembling cementicles and osteoclast like giant cells (Fig. 6). All classical histopathological features of the lesion were present in our case.

CONCLUSION

Peripheral cemento-ossifying fibroma is a non-neoplastic enlargement of the gingiva that is classified as a reactive hyperplastic inflammatory lesion. It is possible to misdiagnose PCOF from the other reactive lesions arising from the gingiva having a similar clinical picture. Therefore, histopathological examination is must for an accurate diagnosis and for proper management. We describe a case of PCOF in a 13-year-old female, with PCOF in mandibular anterior region on the lingual surface. Complete excision with curettage of the adjacent tissues are essential for prevention of its recurrence. Also, Close postoperative follow-up is required because of the growth potential for incompletely removed lesions.

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