Case Report

Peripheral cemento-ossifying fibroma: a case report

[1]Dr.Saptak Shah, [2]Dr.Manthan Patel, [2]Dr.Khyati Shah, [3]Dr. Sidhharth Vyas , [4]Dr. Sonal Anchalia

[1]2nd Year Resident, Pedodontia and Preventive Dentistry , Government Dental College and Hospital , Ahmedabad

[2]2nd Year Resident, Pedodontia and Preventive Dentistry , Government Dental College and Hospital , Ahmedabad

[2]2nd Year Resident, Pedodontia and Preventive Dentistry , Government Dental College and Hospital , Ahmedabad

[3]2nd Year Resident,Oral and Maxillofacial Surgery, Government Dental College and Hospital , Ahmedabad

[4]Assistant Professor & Head Of Unit, Oral and Maxillofacial Surgery ,Government Dental College and Hospital , Ahmedabad

Corresponding author :Dr.Saptak Shah

Abstract

Peripheral cemento-ossifying fibroma is a relatively rare tumour classified as fibro-osseous lesions. It predominantly affects adolescents and young adults, with peak prevalence between 10 and 19 yrs. There is a definite female predilection and almost 60% of the lesions occur in the maxilla. Trauma or local irritation such as dental calculus, ill-fitting denture appliances and faulty restorations are known to precipitate the development of this lesion. Such a lesion can either interfere with normal tooth eruption or become a factor in plaque development, which usually results in caries formation in newly erupted teeth. The present report describes acase of Peripheral cemento-ossifying fibroma (PCOF) in a 12 year old female with a mass on the lower left posterior buccal gingival region..

Keywords: PCOF, fibroosseous, cementum

INTRODUCTION

There are four types of cementum containing lesions according to WHO 1971 classification: 1. Fibrous dysplasia, 2.Ossifying fibroma 3.Cementifying fibroma 4. Cemento-ossifying fibroma[1]. The cemento ossifying fibroma originates from ectopic multipotent blast cells of periodontal membrane. They are usually asymptomatic and slow growing lesions but occasionally may present with pain and bleeding due to irritation of gingival tissue caused by local factors or mechanical trauma.Peripheral cemento-ossifying fibroma (PCOF)accounts for 3.1% of all oral tumours and for 9.6%of gingival lesions.[2]PCOF is frequently associated with irritant agents such as calculus, bacterial plaque, orthodontic appliances, ill-adapted crowns, and irregular restorations. The mineralized product probably originates from periosteal cells or from the periodontal ligament.

Radiographs may show irregular, scattered radiopacities in th elesion. Histologically, the peripheral cemento-ossifying fibromas appear as a combination of mineralized products such as bone and cementum and fibrous proliferation.

CASE REPORT

An otherwise healthy 12 year old female patient reported to the Department of Pedodontia, Government Dental College and Hospital, Ahmedabad with a chief complaint of a painless growth in the gums in the lower back region of the jaw since 2-3 months. Patient reported that the growth was initially smaller in size and non-tender and gradually increased in size within 2 months. Patient also had difficulty while chewing food. Medical and family histories were non-contributory. No history of trauma to the face or mouth was reported Clinical examination revealed an erythematous lesion on lower left mandibular region. The lesion appeared exophytic and nodular

with an irregular surface. It measured approximately 10 mm laterally, 20 mm in the anterior–posterior direction and 15mm thick. (Fig 1)The lesion appeared reddish-pink with areas of white. It was pedunculated. The lesion was not fluctuant, did not blanch with pressure, but had a rubbery consistency.It was tender to firm pressure, but not to light palpation. Teeth associated were vital and no mobility was present. Intraoral periapical and occlusal radiographs showed no abnormality (fig 2).Based on the clinical and radiographic findings a provisional diagnosis of pyogenic granuloma was given while the differential diagnosis included peripheral giant cell granuloma, pregnancy tumourand peripheral cemento-ossifying fibroma. Patientwas advised for a complete hemogram and anexcisional biopsy was advised thereafter. Under local anaesthesia, the lump was excised completely using ascalpel (fig 3). The removed tissue measured 30 mm ×15 mm × 20 mm. (fig 4) adjacent teeth were scaled to remove any local irritants.Microscopically, mineralizedmaterial which may represent mature, lamellar orwoven osteoid, cementum-like material, ordystrophic calcifications embedded in fibrous connective tissue and chronicinflammatory cells can also be identified inlesion. Hence diagnosis of peripheral cemento-ossifying fibroma is confirmed. (Fig5, 6)

DISCUSSION

Peripheral cemento-ossifying fibroma (PCOF)was first described by Menzel in 1827[3].It has beengiven many synonyms such as epulis, calcify-ingfibroblastic granuloma, peripheral cementifyingfibroma, peripheral fibroma with cementogenesis,ossifying fibro epithelial polyp and peripheralfibroma with osteogenesis.According to the 1992 World Health Organization (WHO)classification, a COF is a "demarcated or rarely encapsulated neoplasm consisting of fibrous tissue containing varying amounts of mineralized material resembling bone and/or cementum"[4] It predominantly affects adolescents and young adults, with a peak prevalence between 10 and 19 years.[5,6]it affects both genders but more tendency to occur in females.[7] Approximately 60%of PCOFs occur in the maxilla and they are foundmore often in the anterior region, with 55- 60%presenting in the incisor-cuspid region. But in ourcase it was a rare presentation as it was present inthe mandibular posterior region buccally.The etiology of peripheral cemento-ossifying fibroma is uncertain. The most widely acceptable histogenesis for peripheral cement-ossifying fibroma is the inflammatory hyperplasia of the cells of the periosteum or periodontal ligament.Chronic irritation of the periosteum and periodontal membrane causes pluripotential cells of the ligament to apparently transform or metaplastically change into osteoblasts, cementoblasts, or fibroblasts. It is frequently associated with constantly irritating agents such as calculus, bacterial plaque, orthodontic appliances, ill-adapting crowns, and irregular restorations.[8]Radiographs occasionally show irregular, scattered radiopacities in a peripheral ossifying fibroma, but this change is usually not present.[9]The definitive diagnosis of PCOF is made byhistopathological evaluation of biopsy specimens. In the present case,it has been suggested that an inflammatory hyperplasia of the periodontal ligament can result in such a lesion. It is known that high levels of periodontal ligament activity (e.g. formation and degradation) are more commonly seen in children. Constant irritation associated with both primary tooth exfoliation and permanent tooth eruption can contribute for the increased prevalence of reactive lesions.Similarly, the involvement of hormonal factors is also present.[10]Thefollowing features are usually observed duringmicroscopic evaluation: 1) benign

fibrousconnective tissue with varying contentto profuse endothelial proliferation, 3) mineralizedmaterial which may represent mature, lamellar orwoven osteoid, cementum-like material, ordystrophic calcifications. However, ossification or calcification may not be evident in all cases, particularly in earlier stages of growth. Foci of radiopaque material, bone formation or dystrophic calcification may be seen, particularly in large lesions or lesions with overt mineralization. Acute or chronicinflammatory cells can also be identified inlesions.

CONCLUSION

PCOF is a slowly progressing lesion, the growth of which is generally limited. Many cases will progress for long periods before patients seek treatment because ofthe lack of symptoms associated with the lesion. All kinds of diagnosed and excised growthsneed to be essentially supported by histopathologicexamination.

REFERENCES

[1] Senthilkumaran M, Rajasekar R, Mythili R"Peripheral Cemento Ossifying Fibroma – A Case Report" Indian Journal of Multidisciplinary Dentistry, Vol. 3, Issue 4,p. 813-816, 2013

[2] J. D. Walters, J. K. Will, R. D. Hatfield, D. A. Cacchillo, and D. A. Raabe, "Excision and repair of the peripheral ossifying fibroma: a report of 3 cases," Journal of Periodontology, vol. 72, no. 7, pp. 939–944, 2001.

[3] Dr Jaya Mukherjee , Dr Deepa Das , Dr Gopal Sharma , Dr Bhagyashri Purandare "Peripheral cemento-ossifying fibroma : Rare case presentation" Indian Journal of Basic & Applied Medical Research; Issue-8, Vol.-2, P. 1099-1102;2013

[4] Peter A. Heichart/Hans P. Philipsen. Odontogenic Tumors and Allied Lesions. Brit ish Library Cataloguing in Publication Data.page-277

[5] S. Das and A. K. Das, "A review of pediatric oral biopsies from a surgical pathology service in a dental school," Pediatric Dentistry, vol. 15, no. 3, pp. 208–211, 1993.

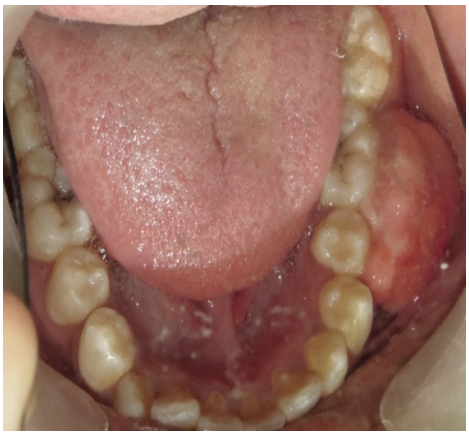
[6] B. W. Neville, D. D. Damm, C. M. Allen, et al., Oral and Maxillofacial Pathology, W.B. Saunders, Philadelpia, Pa, USA, 1995

[7] J. N. Kenney, G. E. Kaugars, and L. M. Abbey, "Comparison between the peripheral ossifying fibroma and peripheral odontogenic fibroma," Journal of Oral and Maxillofacial Surgery, vol.47, no. 4, pp. 378–382, 1989

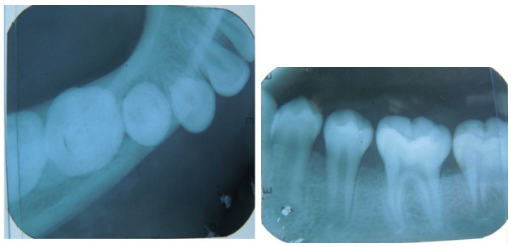
[8] Eversole LR, Rovin S." Reactive lesions of the gingiva." J Oral Pathol ;vol.1 issue1, p 30–38; 1972.

[9] Shafer WG, Hine MK, Levy BM. A textbook of oral pathology. 6th edition/illustrated. Chapter 2: Philadelphia PA: WB Saunders Co; p. 128: 2010.

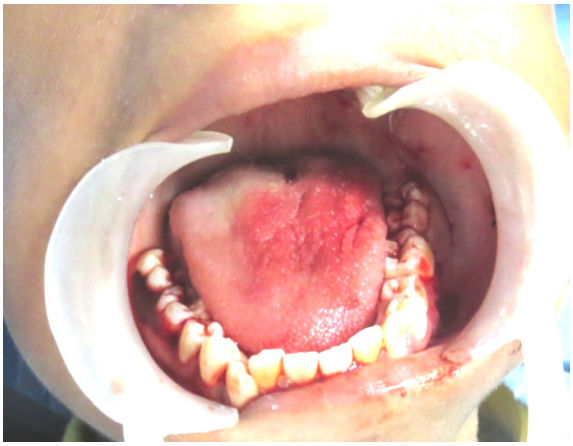
[10] Mariana Passos, Rebeca Azevedo, Maria Eliza Janini,Lucianne Cople Maia. "Peripheral Cemento-Ossifying Fibroma in a Child: A Case Report." The Journal of Clinical Pediatric Dentistry Vol 32, no 1 ,p 13-18 ; 2007.



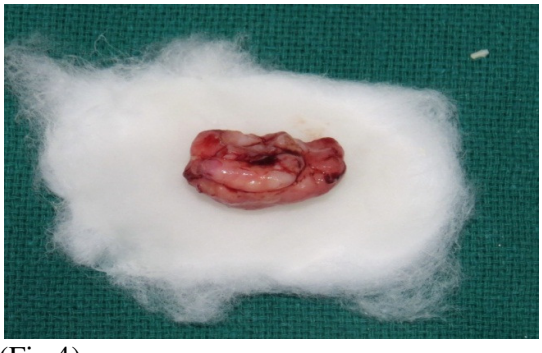
(Fig 1)



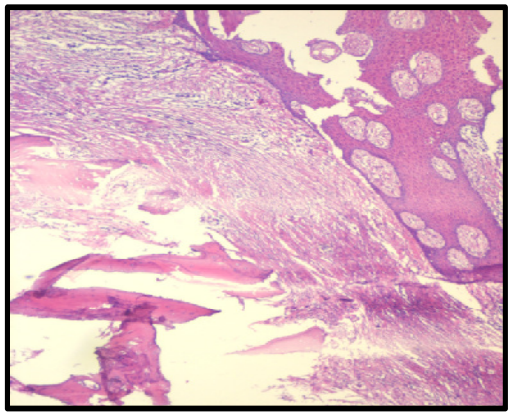
(Fig 2)



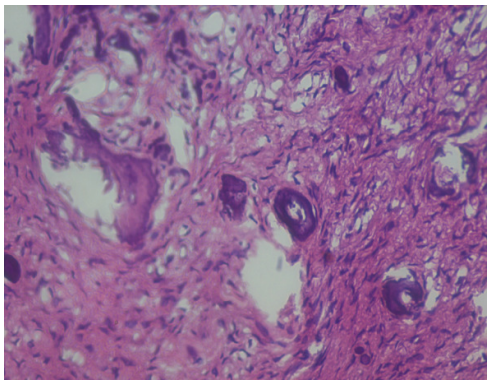
(Fig 3)



(Fig 4)



(Fig 5)



(Fig 6)