

CASE REPORT

Peripheral Cemento-Ossifying Fibroma Of Anterior Mandible – A Case Report

Santhadevy. A¹, Vidyalakshmi.S², Sivaramakrishnan.M³, Suganya.R⁴

ABSTRACT: Peripheral ossifying fibroma is a sessile, pedunculated lesion arising from gingiva. It is classified under non neoplastic lesions of gingiva. This article elaborates a case of peripheral ossifying fibroma occurring in the anterior mandible, which on histopathological examination revealed cementum like calcifications. .

Keywords: *reactive lesion, cementoid, peripheral ossifying fibroma*

Peripheral ossifying fibroma (POF) is described in literature as an innocuous, elevated lesion of the gingiva whose origin and prognosis is still inconclusive. POF is considered to be an inflammatory reactive lesion arising from the periodontal ligament cells, as a result of local irritants such as subgingival calculus, fixed crowns with irregular margins, overhanging restorations etc^[1]. POF is more commonly noticed in the maxillary gingiva involving the interdental papilla. The size of the lesion usually does not exceed 1.5cm. Lesions measuring 6cm have been reported in the literature whose MRI findings suggest the

benign nature of the lesion similar to hemangioma and pyogenic granuloma^[2]. On microscopic examination, POF presents itself as a non encapsulated mass enclosing fibrous connective tissue. Vascularity ranges from sparse to profuse. The connective tissue shows numerous foci of mineralized component. Treatment of choice would be local surgical excision with the adjacent involved periodontal ligament and the periosteum in the lesional area. The removal of local factors is advised^[3]. The intricate location of the lesion in the interdental papilla region, improper removal of the tissue with the PDL and periosteum, persistence of local irritants may account for the reported incidence of

recurrence 16-20^[4].

CASE REPORT

A 37 year old male reported with a slow growing asymptomatic growth on the anterior region of mandible measuring 1x2cm. The growth started as a peanut size six months back. He had visited the local dentist with the same complaint around six months back, which was then surgically excised. Following which the lesion has progressed to the current size. Intra oral examination revealed a sessile growth extending anteriorly from the distal aspect of 31 region and posteriorly

to the medial aspect of the 43 region and superiorly covering three fourth of the tooth surface in relation to 31,32, 41 and 42; inferiorly to the attached gingiva. The surface of the lesion was found to be intact and similar in colour of the oral mucosa (fig.1). The lesion was found to be firm in consistency. The lesion was provisionally diagnosed as pyogenic granuloma and surgically excised. Upon histopathological examination, it was diagnosed as peripheral cemento-ossifying fibroma.

The H & E sections revealed fibrous



Fig- 1: Sessile growth in relation to the attached gingiva of 31,41,42 .

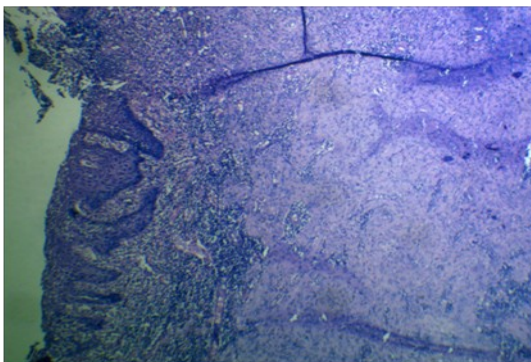


Fig- 2: Ulcerated surface epithelium with foci of calcification in the deeper stroma

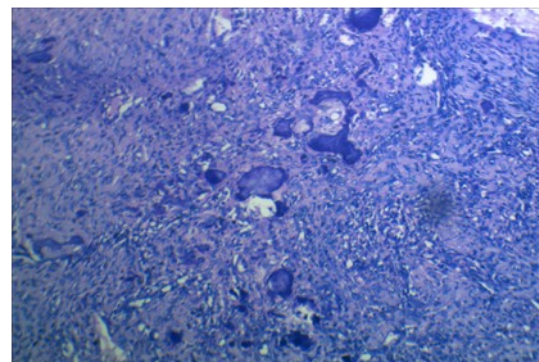


Fig- 3: Higher magnification exhibiting globular calcified areas mimicking cementum

connective tissue with foci of ossification and multiple small globules of cementoid like areas (fig.3). The mineralization products were surrounded by highly cellular and fibrous connective tissue areas. The overlying epithelium was of stratified squamous epithelium and was found to be mildly dysplastic. Areas of dense inflammatory infiltration were also evident sub-epithelially (fig.2).

DISCUSSION

Lesions arising from the gingiva can be categorized broadly into neoplastic and non- neoplastic entities. Peripheral ossifying fibroma (POF) is one among the non-neoplastic lesion of gingiva. 9.6% of gingival lesions are peripheral ossifying fibromas. POF account for 3.1 % of oral tumors^[5,6]. Peripheral ossifying fibroma predominantly affects younger age group and adolescence. The tumor shows an increased site specificity to maxillary gingiva. In our case the site was anterior mandibular gingiva.

The factors that lie behind could be extrinsic and intrinsic. The occurrence of the lesion in young adolescent age group might be due to intrinsic hormonal influence from the host. The extrinsic

factors could be the local irritants in the form of foreign body or calculus in the subgingival region, or any mechanical injury to that area. It has been hypothesized that the periodontal ligament cells could be responsible for the development of the firm fibrotic lesion, the proximity of the periodontal ligament to the lesional site might explain this^[7,8,9].

MOLECULAR INSIGHTS OF THE ETIOPATHOGENESIS OF POF

Gingival fibroblasts may function as accessory cells in promoting inflammation and the immune response. Evidence of functional heterogeneity is found to exist among the phenotypically stable fibroblast population. In cell culture of gingival fibroblasts, responses of a different set of fibroblast population to stimuli were outstanding in the group. Gingival fibroblasts promoting inflammation and the immune response, might explain the chronicity of the lesion. A sub-population of osteoblast like fibroblasts is identified in periodontal ligament. In active periodontal lesions, the tissues adjacent to bone showed a

positive expression for IL-6. The IL-6 is expressed by the osteoblasts as an indirect effect of the IL-1 & 1 β expressed by the gingival fibroblasts. This might explain the calcifications in the lesional area.

Clinically, POF presents itself as a pedunculated or sessile nodular mass of tissue having its origin commonly in the interdental papilla. Uninfected lesions remain similar with the colour of the normal mucosa^[10].

Over the years, peripheral ossifying fibroma is variably designated as peripheral cementifying fibroma, ossifying fibroepithelial polyp, peripheral fibroma with osteogenesis, peripheral fibroma with cementogenesis, peripheral fibroma with calcification, calcifying or ossifying fibroma epulis, and calcifying fibroblastic granuloma^[7].

Histopathologically, POF presents features that are very similar to fibrous lesions, and odontogenic fibroma. Under the microscope, the classical features of POF would be; presence of a stratified squamous surface epithelium with an intact or ulcerated surface, a fibrous connective tissue with

fibroblasts varying in number, proliferation of endothelial cells that may range from little to abundance, presence of characteristic mineralized areas which may include mature, lamellar or woven osteoid, cementum like material or dystrophic calcifications. Acute or chronic type of inflammatory cells will also be evident^[3]. In our case, the mineralization product was predominantly of cementoid type. Few focal areas of ossification were also found.

Treatment should be strictly followed with routine intervals of checkup since the recurrence rates are high.

CONCLUSION

Peripheral ossifying fibroma is one of the reactive gingival lesions that often clinically misinterpreted as peripheral giant cell granuloma, pyogenic granuloma, peripheral odontogenic fibroma. Proper histopathological examination has to be made to rule out the possibilities of other lesions and discriminate POF with the confirmatory microscopic findings.

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Address for correspondence:

Santhadevy. A.
Professor,
Department of Oral Pathology & Microbiology,
Indira Gandhi Institute of Dental Sciences,
Sri Balaji Vidyapeeth University,
Pondicherry.
drsantha73@gmail.com

Authors:

¹ Reader, ^{2,3,4}Senior lecturer
Department of Oral Pathology and Microbiology
Indira Gandhi Institute of Dental Sciences,
Sri Bajai Vidapeeth University
Puducherry

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