

Peripheral Cementifying Fibroma: A Case Report

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Abstract: The peripheral cementifying fibroma (PCF) is a reactive gingival overgrowth occurring frequently in the maxillary anterior region in teenagers and young adults. We report a case of peripheral cementifying fibroma occurring on the buccal gingiva in relation to the mandibular left canine & first premolar region in a 27 year old female patient.

Keywords: Peripheral Cementifying Fibroma, Cementum-like calcifications, Peripheral cemento-ossifying fibroma

I. Introduction

There are numerous histologically different types of focal overgrowths which may occur on the gingiva, such as the peripheral giant cell granuloma, the giant cell fibroma, the pyogenic granuloma, the simple fibroma and peripheral cementifying/ossifying fibroma.¹ Peripheral cementifying fibroma is a solitary, non-neoplastic gingival growth which usually arises as a reactive response to local irritation such as trauma, microorganisms, plaque, calculus, restorations and dental appliances.²

In addition to the peripheral giant cell granuloma, mesenchymal cells of the periodontal ligament are capable of producing another unique inflammatory hyperplasia, the peripheral ossifying fibroma, also referred to as the peripheral cementifying fibroma, depending on whether or not bone or cementum is seen microscopically. The pluripotential cells of the ligament have the apparent ability to transform or metaplastically alter into osteoblasts, cementoblasts or fibroblasts. This is a reactive lesion, not the peripheral counterpart of the intraosseous neoplasm called central cemento-ossifying fibroma.³

Clinically, it appears as a nodular mass, either pedunculated or sessile, that usually emanates from the interdental papilla. The color ranges from red to pink, and the surface is frequently, but not always, ulcerated. Most lesions are less than 2 cm in size, although larger ones occasionally occur. It is more commonly seen in children & young adults (1st & 2nd decades of life) and has a female predilection. There is a slight preponderance for the maxillary arch & in the incisor-cuspid region. Usually, the teeth are unaffected; rarely, there can be migration and loosening of adjacent teeth.⁴ In vast majority of the cases, there is no apparent underlying bone involvement visible on a roentgenogram. However on rare occasions, there may be superficial erosion of bone.⁵ Here, we present a case of peripheral cementifying fibroma.

II. Case Report

A 27 year old female patient reported to outpatient department with a slow growing painless growth in relation to lower left canine-premolar region. The lesion started as a small papule approximately 1 year earlier. Intraoral examination revealed an approximately 2 x 1 cm pedunculated, non-tender, firm, pinkish red growth present on the buccal gingiva in relation to the mandibular left canine & first premolar region (Fig.1). No ulceration was observed. The mass was not fixed to underlying bone.

Radiographic examination revealed no signs of involvement of alveolar ridge. The oral hygiene of the patient was considerably good with no habits. The patient's past dental & medical histories were non-contributory. Excisional biopsy was performed (Fig.2). Clinically, the differential diagnosis included pyogenic granuloma, peripheral cementifying/ossifying fibroma, and peripheral giant cell granuloma.

Histopathological examination revealed a dense, cellular, fibrous connective tissue stroma comprising of plump proliferating fibroblasts and areas of basophilic cementum-like calcifications. The overlying epithelium is of parakeratinized stratified squamous epithelium (Fig.3&4). All these findings were suggestive of peripheral cementifying fibroma.

III. Discussion

PCF is a relatively uncommon, solitary, non-neoplastic gingival growth. Considerable confusion has prevailed in the nomenclature of peripheral cementifying fibroma with various synonyms being used, such as peripheral ossifying fibroma, ossifying fibro-epithelial polyp, peripheral fibroma with osteogenesis, peripheral fibroma with cementogenesis, peripheral fibroma with calcification, calcifying or ossifying fibrous epulis and calcifying fibroblastic granuloma.⁶

Ossifying fibromas elaborate calcified tissues such as bone, cementum and spheroidal calcifications, which has given rise to different nomenclature for these benign fibro-osseous neoplasms. When bone predominates, 'ossifying' is the appellation; if curvilinear trabeculae or spheroidal calcifications are encountered, the term 'cementifying' is used.⁷ When bone and cementum like tissues are observed, the lesions have been referred to as cemento-ossifying fibroma.⁷ Endo et al. tried to distinguish cementifying fibroma from ossifying fibroma and fibrous dysplasia by using immunohistochemical analysis for keratan sulphate and chondroitin-4-sulfate in which the cementifying fibroma showed significant immunoreactivity for keratan sulphate and ossifying fibroma & fibrous dysplasia showed intensive immunoreactivity for chondroitin-4-sulfate.⁸

The term cemento-ossifying fibroma has been referred to as scientifically inappropriate, because the clinical presentation and histopathology of cemento-ossifying fibroma are the same in areas where there is no cementum, such as skull, femur and tibia, which are all ossifying fibromas. There is no histomorphologic or biochemical difference between bone and cement. Presence of dysmorphic round basophilic bone particles within ossifying fibromas are called as cementicles. These so called cementicles are not from cementum but instead represent a dysmorphic product of this tumor analogous to the keratin pearls, which are a dysmorphic product of squamous cell carcinoma.⁹

Though the etiopathogenesis of PCF is uncertain, an origin from the cells of periodontal ligament has been suggested.⁶ The reasons for periodontal ligament origin of PCF include exclusive occurrence of peripheral cementifying fibroma in the gingiva, the proximity of gingiva to the periodontal ligament and the presence of oxytalan fibers within the mineralized matrix of some lesions.⁶ There is excessive proliferation of mature fibrous connective tissue in response to gingival injury, gingival irritation, subgingival calculus or a foreign body in the gingival sulcus. Chronic irritation of the periosteal and periodontal membrane causes metaplasia of the connective tissue and resultant initiation of formation of bone or dystrophic calcification. It has been suggested that the lesion may be caused by fibrosis of the granulation tissue.¹⁰

References

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Figures:



Fig 1: Photograph showing single, round, pedunculated, pinkish red growth present on the buccal gingiva in relation to the mandibular left canine & first premolar region.



Fig 2: Photograph showing gross appearance of surgical specimen.

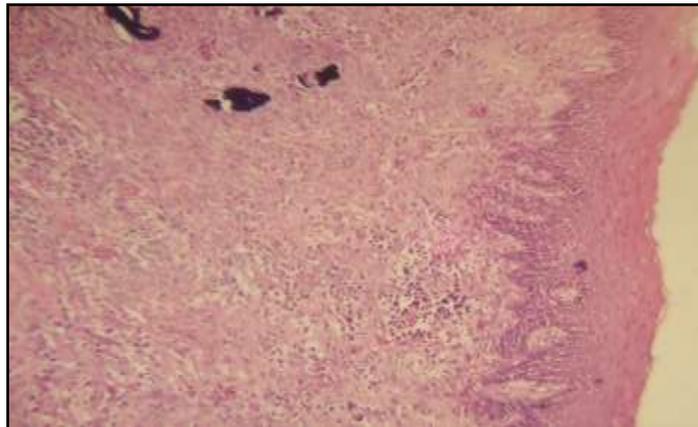


Fig 3: Photomicrograph showing a dense, cellular, fibrous connective tissue stroma comprising areas of basophilic cementum-like calcifications with overlying epithelium of parakeratinized stratified squamous epithelium (H&E stain, 10X).

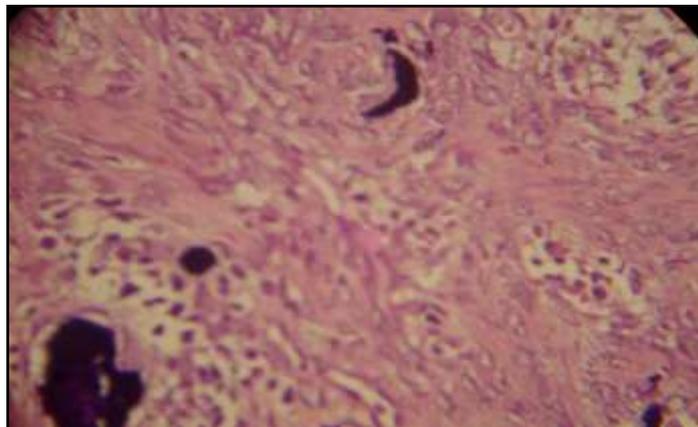


Fig 4: Photomicrograph showing a dense, cellular, fibrous connective tissue stroma comprising of plump proliferating fibroblasts and areas of basophilic cementum-like calcifications. (H&E stain, 40X).