Diagnostic Dilemma : A Periodontal Perspective

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Abstract

The peripheral ossifying fibroma (POF) is a reactive gingival overgrowth occurring frequently in the anterior maxilla in teenagers and young adults. It requires proper treatment protocol with close postoperative follow-up. The present report describes a case of POF in a 28 year adult man, which was surgically excised from the gingival mucosa in the lower left front region. Some features of the etiopathogenesis, differential diagnosis and therapy are also discussed.

Keywords: peripheral cementifying fibroma, peripheral fibroma with calcification, peripheral odontogenic fibroma, peripheral ossifying fibroma

Introduction

Peripheral ossifying fibroma is an oral pathologic condition that appears in the mouth as an overgrowth of gingival tissue . Because of its overwhelming incidence on the gingiva, the condition is associated with two other diseases as the three appear frequently on gingiva: pyogenic granuloma and peripheral giant cell granuloma.[1]

Peripheral ossifying fibroma (POF) represents up to 2% of all oral lesions that are biopsied .[2] Other terms used in reference to POF are peripheral cementifying fibroma, peripheral fibroma with cementogenesis, peripheral fibroma with osteogenesis, peripheral fibroma with calcification, calcified or ossified fibrous epulis, and calcified fibroblastic granuloma.[3]

POF mainly affects women in the second decade of life (50% of all patients being between 5-25 years of age). The lesions are most often found in the gingiva, located anterior to the molars and in the maxilla.[4] Clinically, POF usually manifests as a well-defined and slow-growing gingival mass measuring under 2 cm in size and located in the interdental papilla region . The base may be sessile or pedunculated, the color is identical to that of the gingiva or slightly reddish, and the surface may appear ulcerated .[5]

The definitive diagnosis is based on histological examination, with the identification of cellular connective tissue and the focal presence of bone or other calcifications. However, it has not been established whether POF is a tumor or represents proliferation of a reactive nature.[6]

Case Report

A healthy 22-year old male patient presented to the department of Periodontics of St. Joseph dental college with the chief complaint of swelling over the lower left front region since 4 months, swelling was insidious in onset and gradually progressed. There was history of associated pain while eating and brushing. No history of associated bleeding .The patient gave a history of similar type of complaints two years back for which surgical excision was done.

Clinical Examination

On examination of the oral cavity, a solitary growth of 1cm x 2 cm was observed over the lower left canine and premolar region, anteriorly extending up to middle one third of the 33, posteriorly up to middle one third of premolar, inferiorly extending up to 0.7mm of the gingival margin. The growth was reddish in hue and hemorrhagic in appearance. On palpation the growth was firm in consistency and was tender to firm pressure but not to light percussion and fixed to the underlying structure. Associated tooth was vital with no mobility. Based on clinical findings a provisional diagnosis of pyogenic granuloma was made (Fig 1). The patient's main concern was that lesion interferes with the masticatory function, and it is not esthetic. The patient was then subjected to other laboratory investigations. A complete blood cell count, biochemical profile was carried out and the reports were within the normal ranges for the same.

Radiographic examination

An intraoral periapical radiograph was taken which revealed normal limits, with no

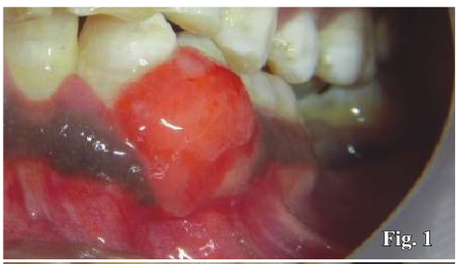


Fig. 1


Fig. 2

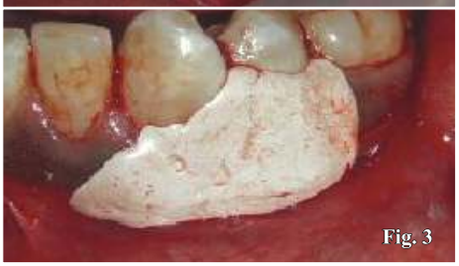


Fig. 3

findings pertaining to the exophytic lesion clinically; the differential diagnosis included pyogenic granuloma, fibrous hyperplasia, POF, and peripheral giant cell granuloma.

Treatment

Under local anaesthesia, the lump was excised completely using a scalpel . The tissue was submitted to the oral pathology division for histopathologic diagnosis. Adjacent teeth were scaled to remove any local irritants. Histopathological examination of biopsy specimens following surgical excision early in the course of disease revealed patterns consistent with diagnosis of peripheral ossifying fibromas. Biopsy specimen demostrated delicate, highly cellular connective tissue stroma with plump shaped proliferating fibroblast, numerous vascular channels, mild to moderate chronic inflammatory cell infiltration. Calcifications are in the form of basophilic globules resembling acellular cementum and osteoid near the surgical base of the section, and no necrosis or evidence of malignancy.

Hisotpathologic findings were consistent with a uniform diagnosis of peripheral ossifying fibroma which

correlated with the clinical findings. Histological findings shows trabecular bone with adjacent fibrous connective tissue, distrophic calcifications , ulcerated epithelium deeper cellular fibroblastic connection tissue especially in the area of mineralization , numerous blood vessels have also seen. (Fig 4, Fig 5)

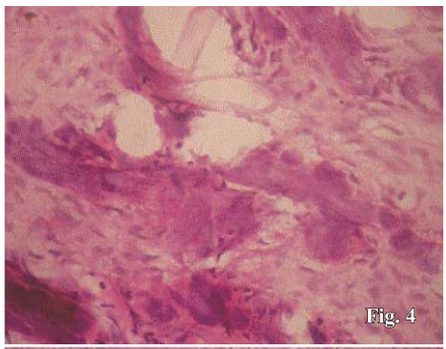


Fig. 4

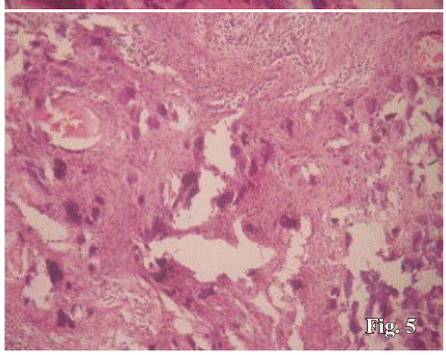
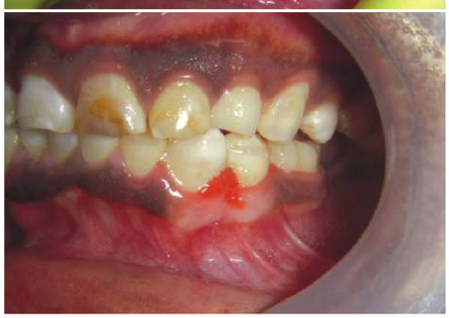
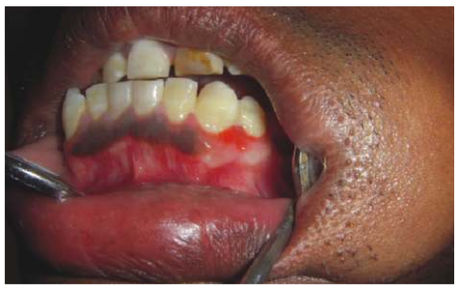


Fig. 5

Follow up

The patient presented for a follow-up examination 20 days, two months and 1 years postoperatively. The surgical site appeared to be healing well. There was no evidence of recurrence of the lesion, and the pt was asymptomatic. (Fig 6, Fig 7, Fig 8)





Discussion

Intraoral ossifying fibromas have been described in the literature since the late 1940s. Many names have been given to similar lesions, such as epulis, peripheral fibroma with calcification,peripheral ossifying fibroma, calcifying fibroblastic granuloma, peripheral cementifying fibroma, peripheral fibroma with cementogenesis and peripheral cemento-ossifying fibroma.

It has been suggested that the POF represents a separate clinical entity rather than a transitional form of pyogenic granuloma, PGCG or irritation fibroma. Eversole and Rovin stated that, with the similar sex and site predilection of pyogenic granuloma, PGCG and POF, as well as similar clinical and histologic features, these lesions may simply be varied upon histologic responses to irritation. Gardner stated that POF cellular connective tissue is so characteristic that a histologic diagnosis can be made with confidence, regardless of the presence or absence of calcification. Buchner and Hansen hypothesized that early POF presents as ulcerated nodules with little calcification, allowing easy misdiagnosis as a pyogenic granuloma.[7,8,9,10]

POFs are believed to arise from gingival fibres of the periodontal ligament as hyperplastic growth of tissue that is unique to the gingival mucosa.[11] the exfoliation of primary teeth and eruption of their successors should result in an increased incidence of periodontal ligament-associated reactive lesions.[12]Hormonal influences may play a role, given the higher incidence of POF among females, increasing occurrence in the second decade and declining incidence after the thirddecade.[13] Other factors that have been implicated in the etiopathogenesis of POF are trauma and local irritants such as tartar, microorganisms, and chewing forces.[3]

It has been suggested that POF would be a consequence of periodontal ligament hyperplasia that may be accompanied by rests of Malassez, which could be incorporated into the lesions, thereby accounting for the POF variant that contains odontogenic epithelium (known as peripheral odontogenic fibroma) [4]. Another variant is cementoossifying peripheral fibroma, characterized by the presence of cementum within a POF-compatible lesion.[5]

The lesion may be present for a number of months to years before excision, depending on the degree of ulceration, discomfort and interference with function. Approximately 60% of POFs occur in the maxilla, and they occur more often in the anterior than the posterior area, with 55%60% presenting in the incisor-cuspid region.[14]

Histologically, the POF appears to be a nonencapsulated mass of cellular fibroblastic connective tissue [8] of mesenchymal origin, covered with stratified squamous epithelium, which is ulcerated in 23%66% of cases.[7,15] Most ulcerated lesions occur in patients in the second decade.[8,15] POFs contain areas of fibrous connective tissue, endothelial proliferation and mineralization. Endothelial proliferation can be profuse in the areas of ulceration, which can be misleading in clinical diagnosis, as the lesion may appear to be a pyogenic granuloma.[7] The mineralized component of POF varies, occurring in approximately 23%, 35% or 50%75% of cases according to published reports. Mineralization can vary between cementum-like material, bone (woven and lamellar) and dystrophic calcification.[7, 15] The POF lesion is generally small and does not require imaging beyond radiographs.[16]

The treatment is to ensure complete surgical excision of the lesion, which frequently results in a mucogingival defect. The combination of excisional biopsy and periodontal plastic surgery is a one-step procedure, which seems to be suitable in most areas of the mouth, regardless of esthetic significance In addition, elimination of local etiological factors such as bacterial plaque and tartar is required The teeth associated with POF are generally not mobile, though there have been reports of dental migration secondary to bone loss. Extraction of the neighbouring teeth is

usually not considered necessary . The exposed bone should be covered with adjacent gingival flap [4,17]

If surgical intervention in an early stage is not done, POF can become large, causing extensive destruction of adjacent bone and significant functional or esthetic alterationsn Moreover, the recurrence rate of the POF has been considered high for reactive lesions and it probably occurs due to incomplete initial removal, repeated injury, or persistence of the local irritants. [18]

According to the series of 134 pediatric POFs analyzed by Cuisia and Brannon, [t]the average time interval for the first recurrence is 12 months. As in the case reported, early surgical treatment of the POF in children including removal of identifiable etiological factors is required to obtain satisfactory gingival repair and to minimize the possibility of recurrence.[12]

Conclusion

These case reports illustrate that exophytic gingival lesions are commonly encountered by dental clinicians. An important rule to remember regarding exophytic, sessile, gingival lesions is the four Ps. The differential diagnosis should include peripheral fibroma, peripheral ossifying fibroma, peripheral giant cell granuloma, and pyogenic granuloma. Other gingival conditions, such as medication-influenced overgrowth, certain neoplasms, or a hemangioma, can clinically resemble the lesions described. However, the ability to formulate a differential diagnosis is contingent upon clinical appearance as well as location. Ultimately, though, the diagnosis is confirmed by biopsy and histologic evaluation

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