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PERIPHERAL OSSIFYING FIBROMA – A CASE REPORT

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ABSTRACT

Peripheral ossifying fibroma represents a reactive benign lesion of connective tissue and is not the soft tissue counterpart of ossifying fibroma. It has been described with various synonyms and is believed to arise from the periodontal ligament comprising about 9% of all gingival growths. The size of the lesion is usually small, located mainly in the anterior maxilla with a higher predilection for females, and it is more common in the second decade of life.It is a slow-growing benign tumor which may lead to pathologic migration and other periodontal problems, so it should be excised as soon as possible. The recurrence rate of peripheral ossifying fibroma is reported to be 8% to 20%, so a close postoperative follow-up is required. Here we report a case of peripheral ossifying fibroma in a 43 years old female patient arising in the mandibular anterior region.

INTRODUCTION

Ossifying fibroma occurs from craniofacial bones and is generally categorized into two types, central and peripheral ossifying fibromas. The central type arises from endosteum on the other hand the peripheral type shows a contiguous relationship with the periodontal ligament occurring solely on the soft tissue [1].

Peripheral ossifying fibroma (POF) have been described in the literature since the late 1940s [2]. In 1872 Menzel first described ossifying fibroma; but only in 1927, Montgomery assigned a terminology to it [3]. POF is thought to be either reactive or neoplastic in nature. Considerable confusion has prevailed in the nomenclature of POF with various synonyms being used such as Peripheral odontogenic fibroma Peripheral cemento-ossifying fibroma, Peripheral cementifying fibroma, Ossifying fibro-epithelial polyp, Peripheral fibroma with osteogenesis, Peripheral fibroma with cementogenesis, Peripheral fibroma with calcification, Fibrous epulis, Calcifying or ossifying fibrous epulis and Calcifying fibroblastic granuloma. The purpose of this article is to present a case of POF and briefly review the current literature on this condition and emphasize the importance of discussion of a reasonable differential diagnosis with other similar lesions [4, 5].

CASE REPORT

A 43-year-old woman reported to the Department of Oral Medicine and Radiology, with the chief complaint of swelling in lower right front teeth region. Her history of present illness revealed a small swelling 1 year back which gradually increased to the present size. Past medical history and family history were not significant.

Extraoral examination revealed no significant findings. Intraoral examination [Figure 1 and 2] revealed a solitary, reddish pink, roughly oval swelling measuring approximately 2.5 × 2 cm, on the labial aspect of 42 and 43 involving interdental, marginal and attached gingiva. The surface appears to be lobulated with normal surrounding muosa and no secondary changes and discharge were noticed. On palpation soft firm in consistency and nontender. Hard tissue examination revealed, missing teeth 43, 45 caries with 14, 24, 47 and root pieces with 16,17,26,36,37,38, 45, 46 were noted. Depending on history and clinical examination we arrived at provisional

diagnosis of pyogenic granuloma with differential diagnosis of Peripheral Ossifying Fibroma (POF), Peripheral giant cell granuloma (PGCG), irritational fibroma, and reactive hyperplasia. Radiographic examination, IOPA (intra oral periapical radiograph) revealed no bone loss [Figure 3]. Routine hemogram was found to be normal. The lesion was excised surgically [Figure 4] and the specimen was sent for histopathological examination. Histopathological examination [figure 5] confirmed the diagnosis of POF. A one year post surgical follow-up showed no evidence of recurrence.

Fig 1. Intra oral view of the patient

Fig 2. Intral oral view of the lesion

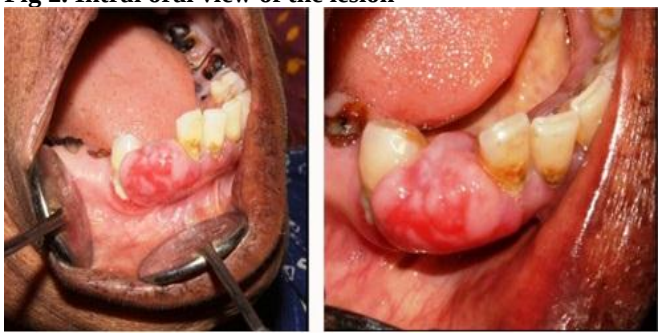


Fig 3. IOPA showing missing canine with normal bone architecture

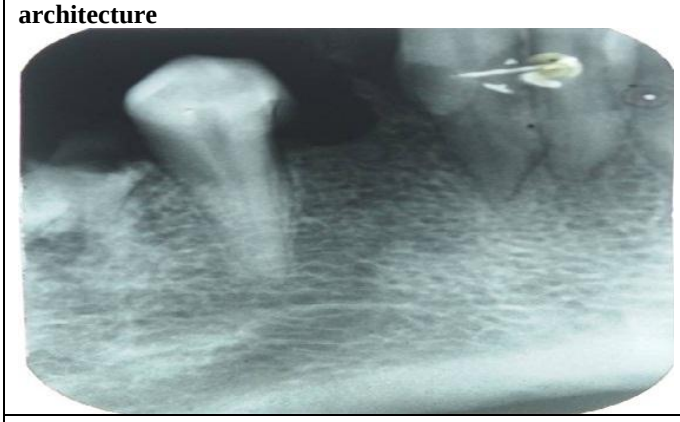


Fig 4. Photograph showing gross specimen of the lesion and post operative view

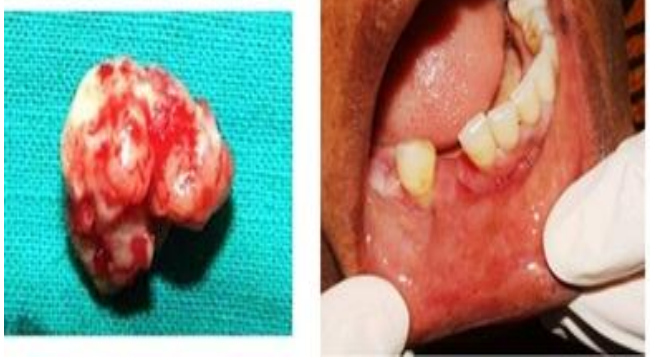
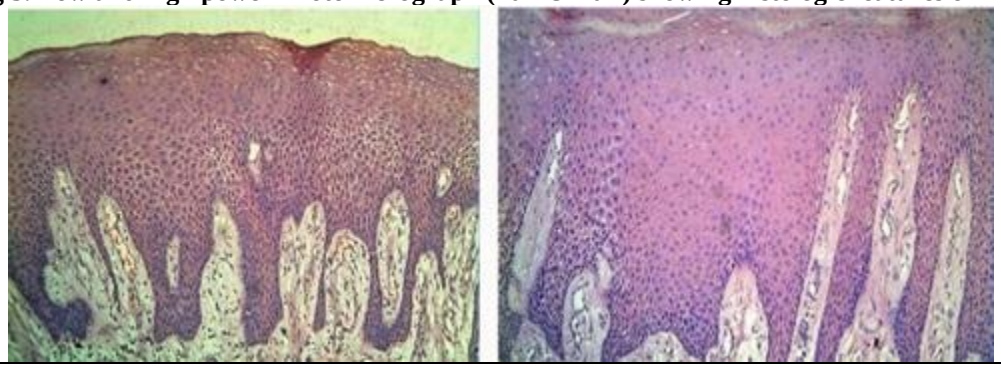


Fig 5. Low and high power Photomicrograph (10X & 40X) showing histologic features of POF



DISCUSSION

Though the etiopathogenesis of POF is uncertain, two schools of thought have been preferred to explain the histogenesis. The first group of researchers believed that POF develops from cells of periodontal ligament/periosteum [1, 3]. The widely accepted etiopathogenesis for POF is the inflammatory hyperplasia of the cells of the periosteum or periodontal ligament, as 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 [6]. Eversole and Rovin stated that the constant irritation present during exfoliation of the deciduous teeth and eruption of the permanent teeth may result in an increased incidence of reactive lesions which originate from the periodontal ligament [7].

The second group of researchers believes that POF lesions were simply a more mature variant of pyogenic granuloma (PG). They state that POF might have developed initially as PG and subsequent maturation led to the ossification of the lesion. Thus, these two lesions represent the progressive stages of the same spectrum of pathosis [6-7].

POF may occur at any age, but are more common in young adults. A variant of ossifying fibroma, juvenile (aggressive) ossifying fibroma, has been described in children and young adults who are younger than 15 years of age. With respect to race, there is a predominance in Whites (71%) compared to Blacks (36%). Females are more commonly affected than males with ratio may vary from 2:1 to 3:2. About 60% of cases occur in maxilla and more than 50% of all cases affects the region of incisors and canine [8]. Introrally POF accounts for 3.1% of all oral tumors and for 9.6% of gingival lesions. Lesions involving the gingival soft tissues are rare compared to the lesions appearing within bone. 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 third decade [9].

Clinically peripheral ossifying fibroma presents as exophytic, smooth surfaced pink or red nodular mass that is sessile or is less frequently seen on a pedicle. The interdental papilla is frequently involved. The lesion in our case had developed from soft tissue may be arising from the interdental papilla was a focal reactive tumor-like growth with a broad attachment base [3,1]. Most tumors measure less than 2 cm in diameter, although lesions larger than 10 cm are occasionally observed. Dental calculus, plaque, microorganisms, dental appliances, and restorations are considered to be the irritants triggering the lesion [10]. A potential of tooth migration due to the presence of POF has been reported [9]. POF can show diffuse radiopaque calcifications, but not all lesions exhibit these radiographic characteristics. Most lesions are not associated with bone destruction. A case of severe destruction of adjacent bone structures has been reported in the literature [8]. Radiographically radiopaque foci within the soft tissue tumor mass are observed if the calcified element is significant, radiological findings were non-contributory in the present case.

POF should be differentiated from other lesions like pyogenic granuloma which, also presents as a soft, friable nodule that bleeds with minimal manipulation, but tooth displacement and resorption of alveolar bone are not observed [8]. Although peripheral giant cell granuloma has clinical features similar to those of POF, the latter lacks the purple or blue discoloration commonly associated with peripheral giant cell granuloma and radiographically shows small flecks of calcification [9]. Thus, the diagnosis of the POF based only on clinical aspects can be difficult and histopathological examination of the surgical specimen obtained by excisional biopsy is mandatory for an accurate diagnosis. In the case reported, the histopathological feature of the POF is characterized by the presence of connective tissue with high cellularity and calcifications [11].

Histologically, POF can exhibit either ulcerated or intact stratified squamous epithelium. In a typical ulcerated lesion, three zones could be identified:

Zone I: The superficial ulcerated zone covered with the fibrinous exudate and enmeshed with polymorphonuclear neutrophils and debris.

Zone II: The zone beneath the surface epithelium composed almost exclusively of proliferating fibroblasts with diffuse infiltration of chronic inflammatory cells mostly lymphocytes and plasma cells.

Zone III: More collagenized connective tissue with less vascularity and high cellularity; osteogenesis consisting of osteoid and bone formation is a prominent feature, which can even reach the ulcerated surface [10].

Treatment consists of conservative surgical excision and scaling of adjacent teeth. Prognosis is good, but some instances of recurrence have been reported regularly in various studies. Incidences of recurrence have been put at 16–20% by various studies. The reasons for recurrence include (a) incomplete removal of lesion, (b) failure to eliminate local irritants, and (c) difficulty in access during surgical manipulation due to intricate location of POF being present usually at interdental areas [3, 8, 9, 12].

CONCLUSION

A slowly growing pink soft-tissue nodule in the anterior maxilla of an adolescent should raise suspicion of a POF. Many patients do not approach a dentist as it is mainly asymptomatic during initial stages till the size increases considerably. In rural India due to lack of proper guidance, early diagnosis and prompt treatment of such lesions is not possible. Discussion of the differential diagnosis should be done tactfully to prevent unnecessary distress to the patient and family.

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