

Giant Peripheral Ossifying Fibroma of Maxillary Alveolus

S. Jayachandran*, V. Aarthi Nisha**, R. Vasudevi***

Abstract

The peripheral ossifying fibroma (POF) is a relatively common gingival growth that is considered to be reactive rather than neoplastic. The pathogenesis of this lesion is uncertain. The POF occurs exclusively on the gingiva, present as a nodular mass, either pedunculated or sessile. It is a predominately a lesion of teen agers and young adults almost 2/3 rd cases occurs in females and slight predilection for maxillary arch incisor - cuspid region. Here we present a case of Giant peripheral ossifying fibroma (GPOF) arising from posterior maxillary alveolus with clinical findings, imaging, histopathology, treatment and follow up with review of literature.

Keywords: Giant Peripheral Ossifying Fibroma; Maxillary Alveolus; Radiopaque Foci; Calcification.

Introduction

Gingiva is a common site for neoplastic and non-neoplastic lesions. Solitary gingival enlargements are relatively common findings and usually the result of reactive response to local irritation. One such reactive non-neoplastic enlargement of the gingiva is peripheral ossifying fibroma (POF) which was first described by Eversole and Rovin in 1972 [6]. POF is most often a gingival nodule that is believed to be a reactive rather than neoplastic pathologic process. It is a pedunculated or sessile nodule that occurs exclusively on the gingiva and is therefore believed to arise from the periodontal ligament. It has been recognized that some examples may grow quite large and may displace teeth [3]. GPOF have been referred to in the literature by several other names (large, atypical, huge, gigantiform). The distinguishing characteristics of GPOFs and the factors that contribute to their growth have primarily been explored [5]. It is also called calcifying fibroblastic

granuloma [7]. The reasons for recurrence include incomplete removal of lesion, failure to eliminate local irritants, and difficulty in access during surgical manipulation due to intricate location of POF being present usually at interdental areas. Deep excisions have been preferred for recurrences [4].

Case Report

A 45 year old female reported to the department of Oral Medicine and Radiology with the chief complaint of growth in left upper back tooth region since one year. The patient was apparently normal one year back when she noticed an insidious solitary growth in left upper edentulous area which increased in size slowly where teeth were extracted 2 years back. Her medical history was not contributed. Extra oral examination was insignificant. Intraoral examination a solitary pedunculated growth in the edentulous left maxillary alveolus 26,27 region (Figure 1). The lesion was measuring about 4 cm mesiodistally, 3.5 cm buccopalatally. The surface of the growth was pink in color with superficial erythema and ulceration due to impingement of the mandibular teeth. On palpation the growth was firm, non tender and blanched on pressure (Figure 2). Intra oral radiographs (Figure 3a,3b) with reduced exposure revealed an well defined radiopaque structure. Panoramic radiograph (Figure 4) revealed arc shaped bone loss in relation to 16,36,46 and well defined radiopaque mass at the

Author's Affiliation: *Professor and Head, **Assistant Professor, ***Third year Post Graduate, Department of Oral Medicine and Radiology, TamilNadu Government Dental college & Hospital, Chennai.

Reprints Requests: R. Vasudevi, Third year Post Graduate, Department of Oral Medicine and Radiology, TamilNadu Government Dental college & Hospital, Chennai, Tamil Nadu 600001.

E-mail: drvasusaravana@gmail.com

site of the lesion with resorption of alveolar ridge. Because of the Presence of radiopaque shadow in left maxillary antrum we suggested further imaging. Cone Beam Computed Tomography (CBCT) (Figure 5,6) was taken for further evaluation which revealed a hyperdense mass measuring 2.1×1 cm at the lesion site. Though the hyperdensity of the mass resembled the matured bone, the sections showed heterodense mass suggestive of maturing calcification. Soft tissue density were noted in both right and left maxillary antrum which was present suggestive of mucosal thickening may be due to chronic sinusitis.

Treatment plan included extraction of the mandibular molars opposing the lesion and surgical excision of the growth. After excision, it was noticed that the growth shrunk in size immediately and became very pale suggesting its extensive vascularity which was the reason for the giant appearance and intense colour (Figure 7). Histopathological analysis showed stratified squamous epithelium of variable thickness with the underlying connective tissue showing calcification in the form of trabeculae of mature bone, dense collagen fibers, blood vessels and chronic inflammatory cells suggestive of peripheral ossifying fibroma (Figure 8). The patient was recalled after one month showed satisfactory healing and no recurrence (Figure 9). Patient is under regular follow up.



Fig. 1: Intraoral photograph showing a localized growth in relation to 26,27 region on the alveolar ridge



Fig. 2: Intraoral photograph showing a localized growth in relation to 26,27 region, blanching on pressure

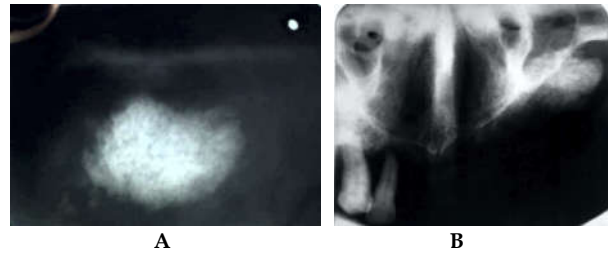


Fig. 3: (a) Intraoral periapical radiograph and Occlusal radiograph. (b) of maxilla showing well defined radiopaque mass.



Fig. 4: Opg reveals a soft tissue shadow in edentulous left maxillary alveolus region with well defined radiopaque mass in the center of the soft tissue shadow

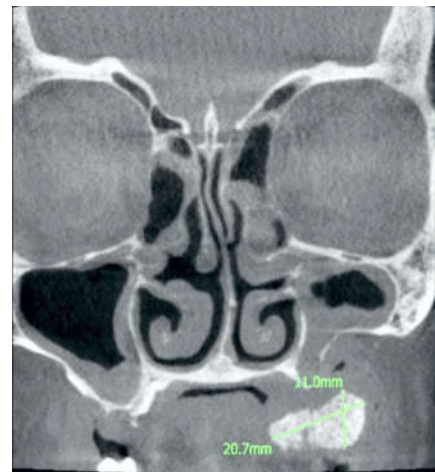


Fig. 5: Coronal section of CBCT picture showing hyperdense mass measuring 2.1×1 cm and hyperdense area in both maxillary antrum.

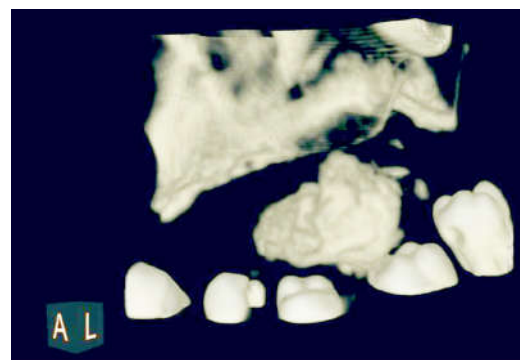


Fig. 6: 3D picture of CBCT showing hard, bone like calcified mass



Fig. 7: Excised specimen

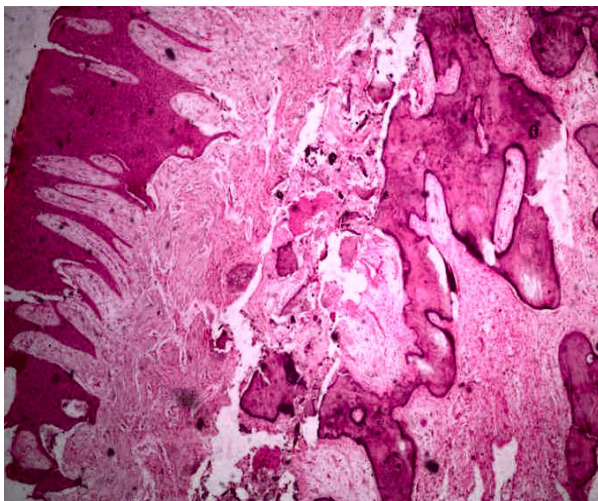


Fig. 8: Under low magnification stratified squamous epithelium with the underlying connective tissue showing calcification in the form of trabeculae of mature bone, dense collagen fibers, blood vessels and chronic inflammatory cells

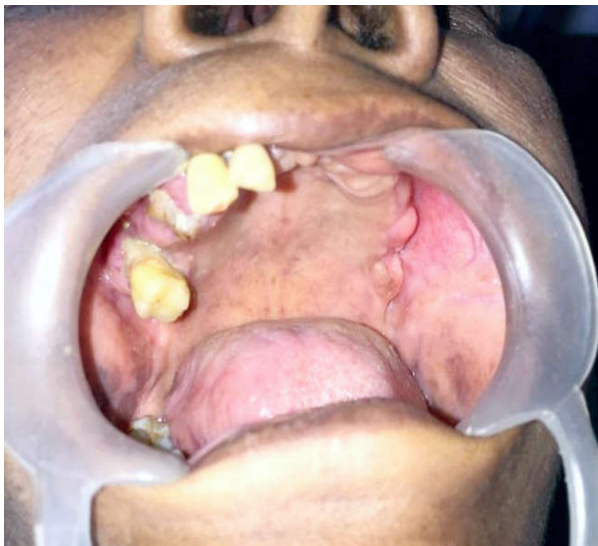


Fig. 9: Post operative picture of one month showing healing at the site

Discussion

Gingiva is often the site of localized growths that are considered to be reactive rather than neoplastic in nature [2]. Due to the high rate of recurrence (8% to 20%), close postoperative monitoring is required in all cases of POF. POF recurs due to 1) the incomplete removal of the lesion, 2) the failure to eliminate local irritants and 3) difficulty in accessing the lesion during surgical manipulation as a result of the intricate location of the lesion (usually an interdental area) [8]. Conventional POF is reported to remain ≥ 2 cm in greatest dimension [10].

According to many authors, the majority of the lesions occur in second decade [6,2]. In our case the patient was in her fourth decade. The lack of standard nomenclature hampers investigation into "giant" lesions [9].

X-ray diffraction analysis indicated that the mineral phase of both central and peripheral tissues consists of apatite crystals and that the crystallinity of these apatites is lower than that of bone apatite. Also, it was suggested that the crystallinity of the apatites might improve progressively with the development of the lesion, possibly to the same degree as that of bone apatite [8].

Histologically, the POF appears to be a non encapsulated mass of cellular fibroblastic connective tissue of mesenchymal origin, covered with stratified squamous epithelium [9]. Radiographic features of the POF may vary.

Radiopaque foci of calcifications have been reported to be scattered in the central area of the lesion, but not all lesions demonstrate radiographic calcifications. The calcified material can generally take one or more of the following four forms: (a) mature lamellated trabecular bone; (b) immature, highly cellular bone; (c) circumscribed amorphous, almost acellular, eosinophilic, or basophilic bodies, and (4) minute microscopic granular foci of calcification [1].

In our case histopathological analysis revealed the calcification present in the form of trabeculae of matured bone. Diagnosis is based on the conventional clinical and histologic features of POF in conjunction with size over 2.5 cm. Limited follow up suggests excellent prognosis when managed by complete surgical excision [5].

Although excision is curative, a recurrence rate of 8% to 16% has been reported in literature. In our case patient showed satisfactory healing with no recurrence even after 6 months.

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