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A Massive and Rare Case of Peripheral Ossifying Fibroma: A Case Report

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KEYWORDS
Peripheral ossifying fibroma, Cementum-like calcification, Radiopaque foci, reactive lesions.

ABSTRACT:
Localized gingival growths are most frequently encountered lesions in the oral cavity, which are considered to be reactive rather than neoplastic. Different lesions with similar clinical presentation make it difficult to arrive at a correct diagnosis. These lesions include pyogenic granuloma, irritation fibroma, peripheral giant cell granuloma, peripheral ossifying fibroma (POF). Among these lesions, an infrequently occurring gingival lesion is the POF. Considerable confusion has prevailed in the nomenclature of POF due to its variable histopathologic features. This is a case presentation of a 40-year-old female with gingival overgrowth in the maxillary right premolar – molar region. Clinically, the lesion was symptomatic, firm, pale pinkish and sessile. Excisional biopsy of the lesion was done followed by histopathologic confirmation with emphasis on the clinical aspect. The rate of recurrence for POF being 8-20%, close post-operative follow-up done.

Introduction

Peripheral ossifying fibroma (POF) is a non-neoplastic enlargement of the gingiva with randomly distributed calcifications, immature bone and osteoid. A POF is precipitated by local irritation and minor trauma and clinically resembles a peripheral fibroma but histopathological analysis always reveals immature bone and osteoid within the lesion. The mineralized product of POF probably originates from cells of the periosteum or periodontal ligament (PDL) with an incidence in the older age group of 0.5%. There are many synonyms for POF, such as epulis, calcifying fibroblastic granuloma, peripheral cementifying fibroma, peripheral fibroma with cementogenesis, peripheral cemento-ossifying fibroma, ossifying fibroepithelial polyp and peripheral fibroma with osteogenesis. Because it is possible to misdiagnose POF, histopathological examination is essential for an accurate diagnosis along with differential diagnosis because of the tendency for recurrence. Amongst these lesions peripheral ossifying fibroma [POF] is an infrequently occurring focal, reactive, non-neoplastic tumor-like growth of the soft tissue that primarily arises from the interdental papilla [1]. It may be sessile or pedunculated, the color varying from pale pink to cherry with smooth surface accounting for 9% of all gingival growths.

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Case Report

The present article highlights a case report related to peripheral ossifying fibroma in a 40-year female patient, its diagnosis, satisfactory clinical management along with reviewing its current literature. A non-smoker female patient aged 40 years with no systemic illness revealed and reported to the department of Oral Medicine & Radiology with the chief complaint of a pain and slowly expanding growth in the gingival region which had been growing to its present size over a period of 6 months. There was no history of associated symptoms such as paraesthesia or numbness; however, the patient had a history of occasional bleeding on provocating the growth. There was no history of similar growths in the past. Extra-oral examination (Fig. 1) revealed a diffuse swelling above the right upper and middle third of the face. The overlying skin was stretched and shiny. The swelling was firm, tender on palpation and extended from the right side of the philtrum up to the nasolabial fold, leading to obliteration. Clinical examination of the oral cavity revealed a nodular growth (Fig. 2) on the gingiva in relation to teeth 14 to 18. The growth was bilobed, oval-shaped and the overlying mucosa was pinkish red in appearance. The growth extended up to the vestibule. On palpation, the growth was smooth, firm, mobile, tender, pedunculated and non-fluctuant in nature with an absence of bruit or pulse. The first lobe appeared to be horizontal and extended from tooth 14 to the centre of 18 and measured approximately 4×3 cm and the second lobe appeared to be vertical and extended from the centre of tooth 14 up to 18 and measured approximately 3.5×5 cm. The gingiva was swollen and edematous and there was spontaneous bleeding on probing with flecks of calculus evident. The patient also had mild degree of fluorosis.

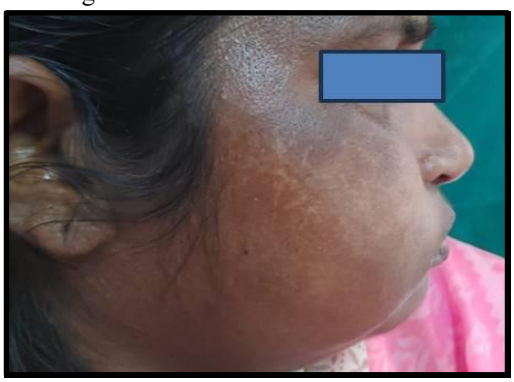

Fig.1 Extraoral profile of the patient

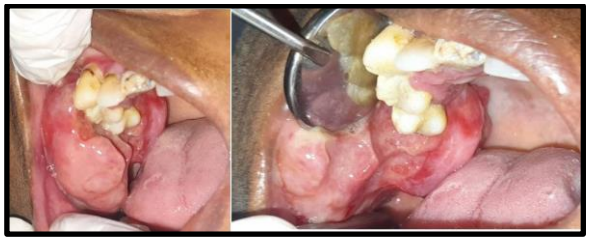

Fig. 2 Intra -oral clinical pictures of the patient

Based on the history and clinical findings, a provisional diagnosis of ossifying fibroma was made and the following differential diagnosis includes : fibrosed pyogenic granuloma, peripheral ossifying fibroma, chronic fibrous epulis, peripheral odontogenic fibroma, solitary fibroma and fibrosed peripheral giant cell granuloma. The patient was subjected to routine hematological and radiographic investigations. The complete hematogram was within normal limits. An intraoral periapical radiograph (IOPA, Fig. 3) revealed ill-defined radiopacity and radiolucency seen at theregion irt 16. Also, we have taken PNS VIEW and CBCT for final confirmation. PNS VIEW revealed Haziness (increases in density) seen in right maxillary sinuses suggestive of lesion involved (Fig. 4). CBCT report revealed In SAGITTAL SECTION: Well, defined homogenous radiolucency with radiopaque structure seen in middle of radiolucency, break in continuity of floor of maxillary sinus is seen, Homogenous thickening of integrity of right maxillary sinus floor, Destruction of pdl irt 14,15,17,18 (Fig.5). IN AXIAL VIEW: Break in continuity involving Lateral wall of maxillary sinus and medial wall of maxillary sinus (Fig.6). IMAGING FEATURES: Location: lesion involved in right maxillary region Internal structure: Haziness of right maxillary sinus and mixed radiopaque and radiolucent is seen. Effects on adjacent structures: Lesion distorted palatal bone and Irregular radiolucent areas in the surrounding bone and adjacent alveolar process reveal bone destruction around the teeth irt 17,18and break in continue of floor of maxillary sinus. Effects on adjacent teeth: adjacent alveolar process reveal irregular widening of pdl space and loss of lamina dura. After obtaining written consent from the patient an excisional biopsy (Fig. 7) of the growth was performed with the patient under General anaesthesia. The adjacent teeth were scaled to remove any local irritants. The histopathological report of the excised mass revealed Para keratinized stratified squamous

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epithelium with elongated rete ridges. Irregular multiple foci of homogenous calcified areas were evident within the connective tissue. Based on the clinical, radiographic and histopathological findings, a final diagnosis of POF was reached. The patient has been on regular follow-up for the past 2 years with no signs of recurrence (Fig. 8).

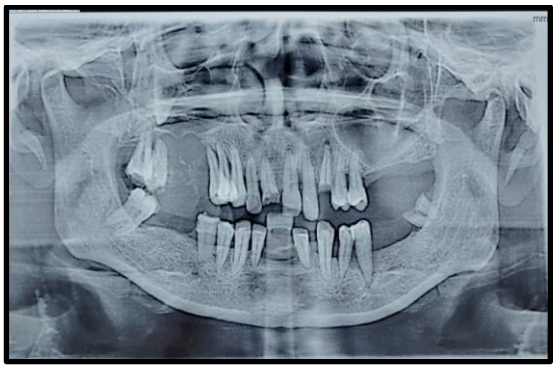

Fig. 3 Preoperative extraoral radiograph of the patient

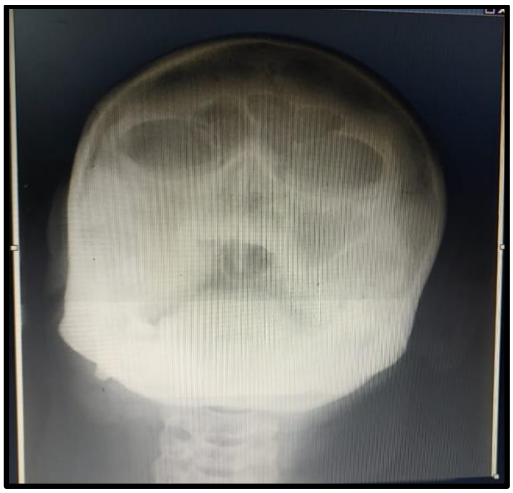

Fig. 4 Preoperative extraoral radiograph of the patient (PNS VIEW)

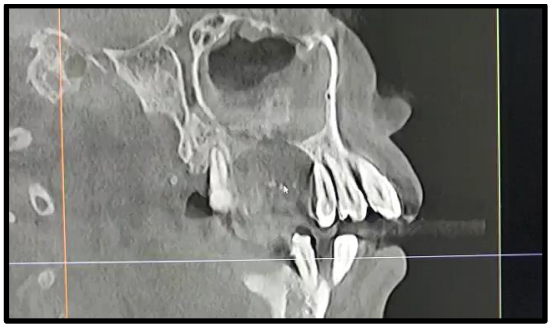

Fig. 5 Preoperative extraoral radiograph of the patient (CBCT) SAGGITAL VIEW

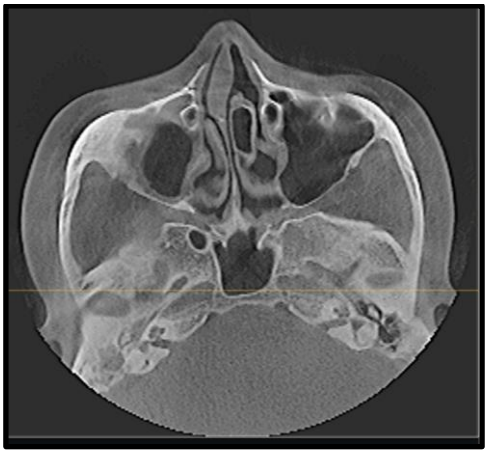

Fig. 6 Preoperative extraoral radiograph of the patient (CBCT) AXIAL VIEW

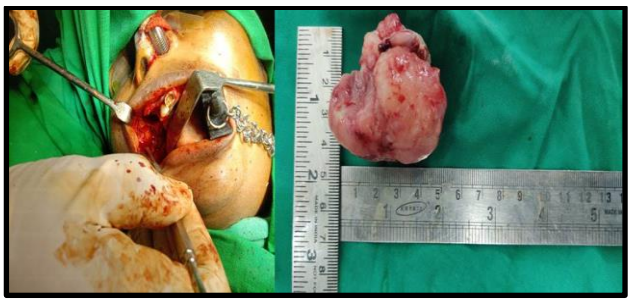

Fig. 7 Visual appearance of the excised specimen

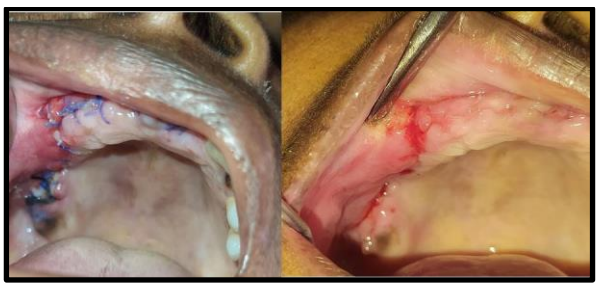

Fig. 8 Photograph of the patient in case at postoperative follow-up

Discussion

Ossifying fibroma occurs mostly in craniofacial bones and is generally categorized into two types: central and peripheral. Central ossifying fibromas arise from the endosteum or the PDL adjacent to the root apex and cause expansion of the medullary cavity [1, 2]. Peripheral ossifying fibromas (POF) are actually a non-neoplastic inflammatory response of the connective tissue or superficial periodontal ligament to low grade irritation, such as trauma, plaque, calculus, micro-organisms, masticatory forces, ill-fitting dental

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appliances and poor-quality restorations. Intraoral ossifying fibroma was first documented in 1844. Shepherd first reported this entity as “alveolar exostosis” in 1844 [3]. The term peripheral ossifying fibroma was coined by Eversole and Rovin who stated that there were similar sex and site predilections along with similar clinical and histological features of pyogenic granuloma, peripheral giant cell granuloma (PGCG) or ossifying fibroma [1]. It was also stated that these lesions simply vary in response to irritation. It has been suggested that POFs represent a separate clinical entity rather than a transitional form of pyogenic granuloma, PGCG or irritation fibroma [3]. Gardner [2] stated that POF cellular connective tissue is so characteristic that a histological diagnosis can be made regardless of the presence or absence of calcification. Buchner and Hansen [4] gave a hypothesis that early POF presented as ulcerated nodules with calcification, which can be easily misdiagnosed as pyogenic granuloma. The recent designation of peripheral odontogenic fibroma according to the World Health Organization (WHO) has been given which reads that peripheral odontogenic fibroma is a rare and extraosseous counterpart of central odontogenic fibroma [2, 5]. The POF is a reactive soft tissue growth that is usually seen on the interdental papilla and clinically appears as a solitary nodular mass, having a base that is either pedunculated or sessile. In the case report the POF was bilobal rather than being solitary. The color ranges from pink to red and the surface is frequently but not always ulcerated [4]. Most lesions are usually 1–2 cm in size. Usually, the teeth are unaffected but rarely it can cause migration, mobility and delay in eruption of permanent teeth. The high female predilection and a peak occurrence in the second decade and declining incidence after the third decade of life suggest hormonal influences and POFs occur 2–4 times more frequently in females than in males between the ages of 25–35 years. The female to male ratio reported in the literature varies from 1.22:1 [7] to 1.7:1 [4, 5, 7] 4.3:1 [1]. The etiopathogenesis of POF is unclear but trauma or local irritants, such as subgingival plaque and calculus, dental appliances, poor quality dental restorations, micro-organisms, masticatory forces, food lodgement and iatrogenic factors all influence development of lesions [8]. whereas in present case the cause appeared to be traumatic in origin. The radiographic features of POF 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. Underlying bone involvement is usually visible on a radiograph (as in the present cases). In rare instances superficial erosion of bone is noted [9]. Considering the size of the lesion and details provided by plain radiography additional imaging studies are rarely required. Clinical differential diagnosis for gingival growths includes fibroma, PGCG, pyogenic granuloma, peripheral odontogenic fibroma and POF. The definitive diagnosis of POF should be made by histological evaluation of a biopsy specimen. Treatment requires correct surgical intervention which ensures deep excision of the lesion including the periosteum and affected PDL, which may reflect the technique and philosophy of surgical management. Thorough root scaling of the adjacent teeth and/ or removal of other sources of irritants should be accomplished [11]. Neville et al. [12] suggested that the lesion be removed down to the periosteum and the adjacent teeth be scaled to remove any remaining irritants. This will assist in lowering the rate of recurrence. In additional POFs can cause erosion of bone, displace teeth and can interfere or delay eruption of teeth. The recurrence rate varies from 7 to 20% according to different authors [11]. Various different surgical techniques, such as lateral sliding flap of full thickness or partial thickness, subepithelial connective tissue graft or a coronally positioned flap may be used to manage this defect and minimize aesthetic patient concerns.

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