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A Rare Case Of Peripheral Ossifying Fibroma On Edentulous Mandibular Region.

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Abstract:
Peripheral ossifying fibroma (POF) is a reactive, non-neoplastic lesion of the gingiva believed to originate from periodontal ligament-related tissues and is most commonly seen in tooth-bearing regions of young female patients. Presentation of POF on edentulous ridges is extremely uncommon. This case report describes a rare occurrence of POF in an 81-year-old male involving the edentulous mandibular ridge. Clinically, the lesion resembled a peripheral giant cell granuloma and was initially diagnosed as such. Surgical excision was performed, and histopathological examination revealed a fibro cellular connective tissue stroma with areas of calcification and ossification, confirming the diagnosis of peripheral ossifying fibroma. Healing was satisfactory, with no evidence of recurrence at one-month follow-up. This case emphasizes that POF should be considered in the differential diagnosis of reactive lesions arising in non-tooth-bearing areas and highlights the indispensable role of histopathological analysis in achieving an accurate diagnosis.

Keywords: *Edentulous maxillary and mandibular arches, non-neoplastic, ossification, peripheral ossifying fibroma (POF).*

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I. Introduction

Peripheral ossifying fibroma (POF) is a benign, reactive growth of the gingiva that develops from the connective tissue surrounding teeth, particularly the periodontal ligament and periosteum. It most often appears as a single, firm swelling, either sessile or pedunculated, and is commonly located in the anterior maxillary region [1]. The condition is seen more frequently in females and is often linked to chronic local irritation, such as dental plaque, calculus deposits, poorly fitting prosthetic appliances, or fractured restorations [2].

Because POF shares several clinical characteristics with other localized gingival enlargements—especially peripheral giant cell granuloma (PGCG)—accurate diagnosis based solely on clinical examination can be difficult. PGCG is a particularly close mimic due to its similar location, colour, and surface texture. For this reason, histopathological assessment remains essential to establish the correct diagnosis [8-9].

Reports of POF occurring in edentulous patients are exceptionally uncommon, likely due to its origin from structures associated with tooth-supporting tissues. Only isolated cases have been documented in patients with partially or completely edentulous jaws, which makes such presentations noteworthy for clinicians and pathologists alike[2].

The present case describes a rare example of POF occurring in the edentulous mandibular ridge of a patient retaining only a single maxillary tooth. The lesion was initially diagnosed clinically as PGCG but was later confirmed histologically as POF. This case highlights the importance of considering POF in the differential diagnosis of gingival masses in non-tooth-bearing areas and demonstrates the critical role of histopathology in confirming clinical impressions.

II. Case Report

An 81-year-old male patient reported to the Department of Oral Medicine and Radiology, RDDC & RC, with a chief complaint of swelling in the lower right posterior region of the jaw for one and a half months. The patient gave a history of spontaneous exfoliation of a tooth in the same region about six months prior, after which

he experienced repeated trauma to the edentulous ridge during mastication, particularly while consuming hard food. Approximately two months before presentation, he noticed a small, painless swelling in the edentulous area which was initially pea-sized. The swelling gradually increased to its present lemon size over the next one and a half months. The patient complained of difficulty in chewing and mild interference with speech. There was no history of pain, bleeding, ulceration, discharge, fever, or paraesthesia.

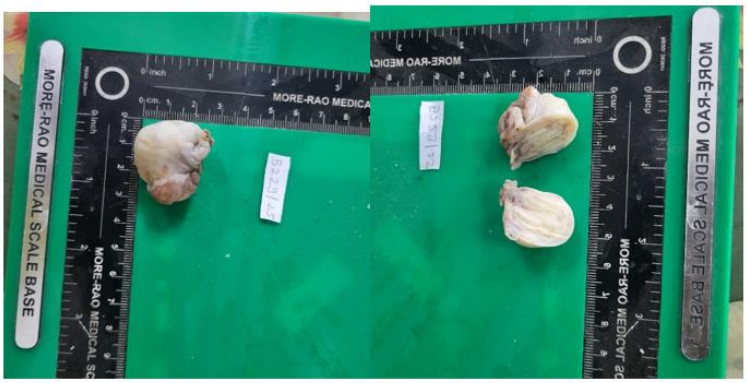
Extra Oral Examination

Aera of chief complaint.

The patient's past medical and dental history was non-contributory. He was not on any medications, had no known allergies, and did not report any deleterious habits such as tobacco or alcohol use. On general examination, the patient was well oriented, of average build, afebrile, and vital signs were within normal limits.

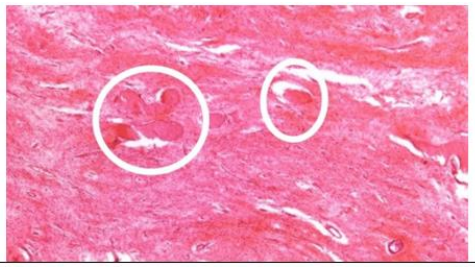
Extraoral examination revealed a symmetrical face with no swelling, skin changes, or lymphadenopathy. The temporomandibular joints showed normal movement without deviation or sounds. Intraoral examination revealed that the only remaining tooth was the maxillary right canine (13) with gingival recession, while all other teeth were missing. Mild stains and calculus were present on the remaining tooth. In the edentulous mandibular ridge corresponding to the 44–46 region, a single, well-defined, oval-shaped, pedunculated growth measuring approximately 2 cm buccolingually and 3 cm antero-posteriorly was observed. The surface was smooth, the colour was similar to adjacent mucosa with a reddish-blue base, and the surrounding mucosa appeared normal. There was no ulceration, sinus tract, bleeding, or discharge. On palpation, the lesion was mobile over the underlying structures, non-tender, soft to firm in consistency, and smooth in surface texture, with no fluctuation, pulsation, or induration.

Based on the clinical presentation, a provisional diagnosis of peripheral giant cell granuloma was made, with peripheral ossifying fibroma, pyogenic granuloma, and irritation fibroma considered in the differential diagnosis. An excisional biopsy was performed under local anaesthesia (2% lignocaine with 1:200000 epinephrine) to completely remove the lesion along with its base, followed by curettage of the underlying tissue. The excised specimen, measuring approximately 3x3x4 cm, was placed in 10% formalin and submitted for histopathological examination.



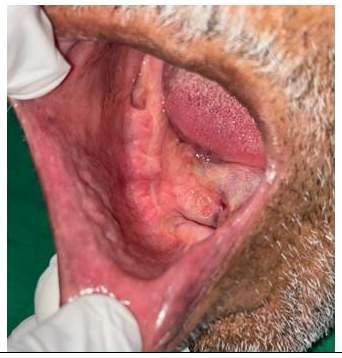
Surgical excision. **Size of the lesion.**

Microscopic examination revealed a fibro cellular connective tissue stroma containing plump fibroblasts and bundles of collagen fibres, along with focal areas of calcification and ossification. The overlying stratified squamous epithelium was intact. These features confirmed the diagnosis of peripheral ossifying fibroma.



Focal areas of calcification and ossification.

Postoperative healing was uneventful. The patient was reviewed after one month, at which time the surgical site was completely healed with no signs of recurrence. The patient was advised to maintain good oral hygiene and was scheduled for periodic follow-up.(All the extraoral and intraoral images were taken after informed consent of patient & his guardians.)



Post operative follow-up after 1 month.

III. Discussion

POF is classically described as a periodontal ligament-derived reactive lesion that predominantly affects younger females and occurs in tooth-bearing areas, especially the anterior maxillaa [5,6,10]. Large retrospective series and reviews confirm a peak incidence in the second and third decades of life and a marked female predilection [3]. Reports of POF arising on edentulous ridges are uncommon, with only isolated case reports documenting lesions on non-tooth-bearing mandibular or maxillary ridges. The present case is unusual for several reasons: (1) the patient's advanced age (81 years) contrasts with the typical younger age group described in series; (2) the patient is male, whereas most reports show female predominance; and (3) the lesion developed on an edentulous mandibular ridge following spontaneous tooth loss and repeated traumatic masticatory irritation — a plausible but uncommon pathway for a lesion traditionally linked to periodontal ligament origin. These features increase the risk of clinical misdiagnosis (for example, as peripheral giant cell granuloma or pyogenic granuloma)

and underscore the importance of histopathological confirmation and thorough removal of the lesion base with curettage to reduce recurrence risk, particularly in elderly patients with ongoing local irritants.

The pathogenesis of POF in edentulous regions remains unclear. It has been proposed that remnants of periodontal ligament fibres may persist in the alveolar bone or periosteal connective tissue even after tooth loss, acting as a source for fibroblastic proliferation in response to chronic irritation. In our case, repeated trauma from mastication over the edentulous ridge could have acted as the triggering factor for the lesion's development.

Clinically, POF may resemble other reactive gingival lesions such as peripheral giant cell granuloma (PGCG), pyogenic granuloma, and irritation fibroma. PGCG, in particular, is a close mimic due to its similar occurrence on gingiva or edentulous ridges, reddish-blue colouration, and pedunculated base. However, the two lesions differ histologically: PGCG demonstrates numerous multinucleated giant cells within a vascular stroma, while POF exhibits a fibrocellular stroma with varying degrees of calcification or ossification. In the present case, the lesion's clinical appearance led to an initial diagnosis of PGCG, but histopathology confirmed POF.

A review of the literature reveals only a limited number of POF cases occurring in edentulous regions. Hashmi et al. reported a case of POF in a 56-year-old female involving the anterior mandibular ridge, and similar cases have been documented sporadically [4]. These rare presentations highlight the importance of considering POF in the differential diagnosis of swellings in non-tooth-bearing areas, especially when they exhibit features typical of PGCG.

Management of POF involves complete surgical excision, including removal of the lesion base and elimination of local irritants, to minimize recurrence risk [7]. Recurrence rates for POF have been reported between 8% and 20%, often due to incomplete excision or persistent etiological factors. In the present case, complete excision and curettage of the underlying tissue resulted in uneventful healing with no recurrence at one month follow-up. Longer-term follow-up is still warranted given the lesion's recurrence potential.

IV. Conclusion

Peripheral ossifying fibroma, although predominantly associated with tooth-bearing areas, can rarely present in edentulous ridges and mimic other reactive gingival lesions such as peripheral giant cell granuloma. This case emphasizes the importance of histopathological examination for accurate diagnosis, as clinical features alone may be misleading. Complete surgical excision with removal of underlying irritants is essential to prevent recurrence, and regular follow-up should be maintained for early detection of any reappearance.

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