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CASE REPORT

PERIPHERAL OSSIFYING FIBROMA IN THE MANDIBLE: AN UNCOMMON PRESENTATION WITH CLINICAL IMPLICATIONS

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ABSTRACT

Background: Peripheral ossifying fibroma (POF) is a reactive gingival lesion arising from the periodontal ligament. It commonly affects younger patients and usually occurs in the maxillary anterior region. Occurrence in the mandible of an elderly patient is rare.
Objectives: This case report aims to describe the clinical presentation, histopathological confirmation, and management of an uncommon mandibular POF, emphasizing the need for early diagnosis and follow-up due to its recurrence potential.
Materials and Methods: An elderly male patient presented with a painless, pale pink, firm, sessile gingival growth in the left mandibular premolar region. Clinical examination, surgical excision, and histopathological analysis were performed to establish the diagnosis.
Results: The excised lesion was confirmed as POF on histopathology. Postoperative healing was uneventful. The patient was placed under regular follow-up to monitor for recurrence, given the lesion's known tendency to reappear.
Conclusion: This case highlights an atypical occurrence of POF in the mandibular premolar region of an elderly patient. Awareness of such unusual presentations assists in accurate diagnosis, appropriate surgical management, and prevention of recurrence through careful long-term follow-up.

Keywords**:** *fibroma, ossifying, mandible, gingival neoplasms, bicuspid, case report*

INTRODUCTION

Peripheral Ossifying Fibroma (POF) is a benign, localized gingival growth, likely arising from periodontal ligament cells. Irritants like plaque, calculus, or dental appliances trigger it. Clinically, it presents as a painless, well-defined mass under 2 cm, often sessile or pedunculated. [1,2] Histology reveals fibrous tissue, fibroblasts, and metaplastic bone.[3]POF is more common in females in their second and third

decades, with 60% in the maxillary canine-incisor area. It accounts for 3.1% of oral neoplasms. Bone involvement is rare.[4]Treatment approaches may be influenced by PCNA-positive cells in POF, which show a strong recurring activity of the lesion.[5]

This report presents a case of POF in a male in his forties in the left mandibular premolar region.

CASE PRESENTATION

Patient Information

A 44-year-old male presented to the Department of Oral Medicine and Radiology, Amrita School of Dentistry, Kochi, with a chief complaint of a growth in the lower left premolar gingival region for three months. The swelling which was small initially, had gradually increased in size. There was no associated pain, numbness, or paraesthesia, but the patient reported of difficulty in chewing due to interference from the lesion.

He had a 20–25-year history of placing smokeless tobacco in the lower buccal vestibule, 2–3 times daily, along with alcohol use and cigarette smoking for five years, both of which he ceased six months prior. No significant medical history was reported.

Clinical Findings

Extraoral examination showed no gross abnormalities. Intraoral examination revealed a single, pale-pink, pigmented, ovoid mass measuring about 2 × 1.5 cm that extended from the distal aspect of tooth 33, involving the interdental gingiva of teeth 33 to 36. The lesion covered the middle third of tooth 34's crown and the buccal surfaces of the crowns of teeth 35 and 36. It appeared sessile, non-lobulated, and irregular, with some erosions. The mass was firm and bled on probing. It was asymptomatic with no signs of ulceration. Surrounding mucosa appeared normal (Figure 1).

Figure 1. Clinical image of the lesion, immediate post-operative view, specimen, post-operative image after 2 months

Diagnostic Assessment

CBCT was performed to assess lesion extent and bone changes. No radiological evidence of alveolar ridge involvement was seen. Hyperdense areas were noted at the lesion's periphery from teeth 33 to 36 (Figure 2).

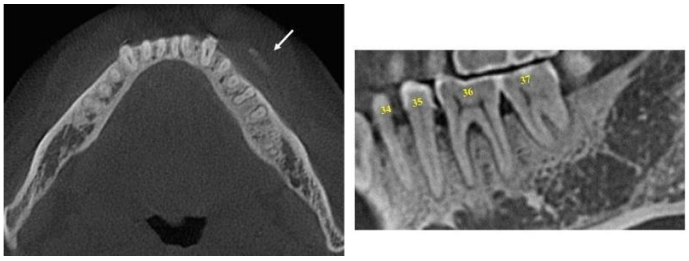

Figure 2. Axial section-showing diffuse hyperdense area (white arrow) corresponding to the periphery of teeth 35-37 region(left), Oblique slicing corresponding to left premolar region(right)

The differential diagnoses included fibrous hyperplasia, based on the patient's clinical history and presentation; malignancy, considering the long-term habit history and clinical features; pyogenic granuloma, due to bleeding on probing and presence of dental calculus; peripheral giant cell granuloma, based on clinical correlation; and peripheral odontogenic fibroma, suggested by radiographic calcifications.

Therapeutic Intervention

Under local anesthesia, the lesion and surrounding tissue were excised and sent for histopathological examination. Microscopy (Figure 3) showed superficial hyperplastic parakeratinized stratified squamous epithelium with focal ulceration.

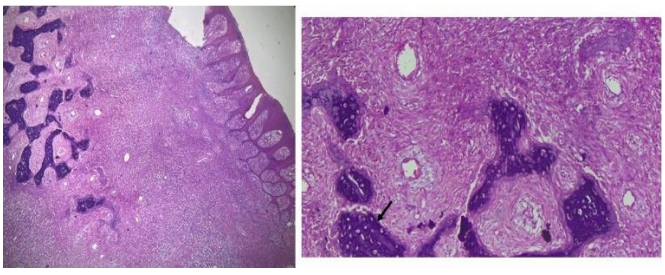

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Figure 3. Histology – Low-power micrograph (left)-ulcerated epithelium with a fibrinous pseudomembrane and inflammatory cells overlying lesional tissue and calcified bone, surrounded by plump spindle-shaped cells in connective tissue. High-power view (right)-plump spindle-shaped fibroblasts in a densely collagenous stroma and calcified bone (black arrow)

The connective tissue stroma was moderately to densely collagenous with minimal inflammatory infiltrate.Towards the centre of the mass, mineralized foci in the form of bony trabeculae was observed. Multiple vascular spaces of varying sizes were also seen in the stroma.

A final diagnosis of peripheral ossifying fibroma was made based on clinical, radiographic, and histopathological correlation.

Follow-up and Outcome

At two-month follow-up, healing was satisfactory with no recurrence. The patient was advised oral prophylaxis and habit counselling to eliminate local irritants and prevent recurrence.

DISCUSSION

POF first termed by Eversole and Rovin, is a reactive, benign gingival lesion documented since the mid-20th century. It shares clinical similarities with pyogenic granuloma and peripheral giant cell granuloma, possibly representing different histological responses to chronic irritation.[1]

POF accounts for approximately 9.6% of gingival lesions and likely originates from the periodontal ligament, as suggested by its exclusive gingival location and presence of oxytalan fibers in mineralized areas. It may also evolve from pyogenic granuloma or peripheral giant cell granuloma and exhibits cementum- and bone-like calcifications.[6]Multiple names have been used for similar lesions, including epulis, calcified fibroblastic granuloma, peripheral fibroma with osteogenesis, peripheral fibroma with calcification, peripheral cementifying fibroma, peripheral fibroma with cementogenesis, and peripheral cemento-ossifying fibroma.[7,8]Around 60% of POFs occur in the maxilla, with over half instances involving the interdental papilla between incisors and canines.

This case involved a middle-aged male with a POF lesion in the mandibular premolar region, an uncommon presentation, as POF typically affects younger females and is more frequent in the maxillary anterior region.[9]The patient's long-term tobacco-chewing habit and poor oral hygiene were significant in this case due to chronic irritation from local factors (e.g., calculus, tobacco, trauma, food impaction) which is a notable and not always documented for POF cases likely contributing to lesion development, and An initial differential of malignancy was considered due to the lesion's location and chronic habit history.

Clinically, the lesion was a well-defined, hyperplastic, firm, slow-growing mass with a smooth, mucosa-coloured surface. Typical POFs are under 1.5 cm in size, though rare cases up to 9 cm have been reported.[10] Radiographically, POFs may show soft-tissue calcifications and mild bone loss, with tooth migration seen in about 5% of cases which is absent here. CBCT was used to assess bone involvement.

Complete excision, including periosteum and periodontal ligament, is crucial. Although POF typically originates from the periodontal ligament, occurrences in edentulous areas have been noted. Recurrence ranges from 8% to 20%, often due to incomplete excision or residual irritants. Curettage and, if necessary, tooth extraction may help prevent recurrence.

Due to its significant potential for recurrence, long-term postoperative follow-up and periodic monitoring are crucial. If left untreated, the lesion can expand and destroy the bone completely.[11]Despite these atypical features, histology confirmed POF, and complete surgical excision with habit counseling led to favorable healing and no recurrence at two months.

The patient was advised to undergo regular follow-up assessments and oral hygiene maintenance.

CONCLUSION

POF presents a diagnostic challenge due to its clinical similarity to other reactive gingival lesions. In this case, diagnosis was tailored only through a comprehensive approach that combined clinical examination, radiographic imaging, and confirmatory

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histopathology. Management required not only complete surgical excision of the lesion but also the elimination of risk factors like irritants, including long-standing tobacco habits and poor oral hygiene. Given its known propensity for recurrence, often linked to incomplete removal or persistent local triggers, this case highlights the necessity of structured postoperative follow-up. Most patients are lost to follow-up review after management but due to its high potency for recurrence, mandatory post-operative follow-up is indicated for the lesion.

DECLARATIONS

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Competing Interests

The authors have no competing interests to declare.

Ethical Approval

The study was approved by the appropriate ethics committee and conducted according to relevant guidelines and regulations.

Informed Consent

Written informed consent was obtained from the patient for publication of the clinical details and accompanying images.

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