IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 24, Issue 9 Ser. 6 (September. 2025), PP 18-21
www.iosrjournals.org

"Reactive Yet Rare: A Case Of Mandibular Peripheral Ossifying Fibroma"

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Abstract:
Peripheral Ossifying Fibroma (POF) is a reactive gingival lesion of periodontal ligament origin, commonly seen in the anterior maxilla of young females and rarely in the posterior mandible. This report describes a unique presentation of POF in the posterior mandible of an female in her fifth decade, associated with tooth migration and radiographic calcifications. Its unusual location, size, and clinical behaviour challenged the conventional profile of POF and highlight the importance of considering this entity in the differential diagnosis of posterior gingival enlargements. Complete surgical excision with peripheral ostectomy remains the treatment of choice to minimize recurrence in this case. At six-month follow-up, healing was uneventful with no recurrence. It emphasizes the diagnostic challenges posed by such presentations and the importance of thorough excision with adjunctive ostectomy to minimize recurrence.

Key Words: *Peripheral ossifying fibroma, Reactive lession , Posterior gingival growth, Tooth migration, gingival neoplasms*

Date of Submission: 19-09-2025 Date of Acceptance: 29-09-2025

I. Introduction

Non-odontogenic tumors are neoplastic growths that originate from tissues not involved in tooth formation, such as bone, cartilage, muscle, nerve, blood vessels, and salivary glands within the maxillofacial region. These tumors may be benign or malignant in nature. Among the benign tumors, those of bony origin include osteomas, chondromas, and fibro-osseous lesions like ossifying fibroma and fibrous dysplasia.

Peripheral ossifying fibroma (POF) is an unusual localized, reactive benign gingival growth [1]. Peripheral ossifying fibroma (POF) is a localized reactive enlargement of the gingiva often associated with the papilla and originate from underneath the periodontium [2][3]. It often presents as a slow-growing, painless, pink, sessile or pedunculated mass, typically seen in maxillary anterior region less than 2 cm in diameter and more prevalent in young to middle aged females [1]. Though considered benign, POF can be locally aggressive in rare instances.

This case report presents a rare and diagnostically challenging variant of POF located in the posterior mandibular premolar region, associated with pathological tooth drifting, features that mimic more aggressive pathologies. This case report has been formulated based over CARE guidelines.

II. Case Report

A 54-years-old female presented to department with the complain of swelling in relation to lower left teeth region for 8 months, which started as a small papule of approximately 0.5 x 0.5 cm and gradually increased in size with time to attain present size measuring approximately 3 x 3 cm in size, associated history of pain which was mild in intensity, intermittent, throbbing in nature, aggravate on chewing hot and spicy food and relieves on rest. There was associated history of difficulty in chewing and bleeding present. The patient had history of type 2 diabetes mellitus and was not under any medication.

On Extraoral examination, no abnormality detected. Intraoral examination revealed an approximately 3 cm x 3 cm sessile, tender, firm, irregular shaped, pale pinkish swelling present in relation to left lower alveolus along the lingual region of 33-35 [Figure 1]. The lesion was extending from mesial aspect of left mandibular canine to mesial aspect of mandibular first molar and above the level of occlusal surface, causing occlusal interference. Whereas, inferiorly 3mm away from floor of mouth and small extension to buccal aspect was noted. Pathological migration of mandibular first premolar and canine were present as mesial migration.

The clinical behaviour of the lesion in our case initially raised concerns for more aggressive or neoplastic processes, such as peripheral giant cell granuloma, peripheral odontogenic fibroma, or even low-grade

malignancy, especially in light of the bone involvement. This differential diagnosis necessitated thorough clinical, radiographic, and histopathological evaluation.

Radiographically, Orthopantomogram reveals calcification present in relation to 34-35 region approx. 0.5 x 0.5 cm, mesial drifting of 34 noted. Computed Tomography scan reveals in CT sections, ill-defined lesion measuring with calcification along the mandibular left lingual alveolus without root resorption. Expansion of lingual and buccal cortex of mandible noted [Figure 2]

The differential diagnosis is based on the patient's history, clinical, and radiographic findings, and it includes peripheral ossifying fibroma, peripheral myxoma, and malignant tumor.

Surgical excision with peripheral ostectomy and extraction of 34, 35 under general anaesthesia was planned to minimize the risk of recurrence, which has been reported in up to 20% of cases, particularly when excision is incomplete or the lesion is large [Figure 3].

Histopathological examination confirmed the diagnosis of POF, showing a fibro cellular stroma interspersed with mineralized material resembling bone and cementum, consistent with the known histologic spectrum of this entity [Figure 4]. The patient was reviewed after 2 weeks, 1 month and 3 months with satisfactory wound healing and no recurrences [Figure 5].

FIGURE 1 (A, B): Intraoral view showing the lesion in posterior mandible region with bi-lobulated appearance.

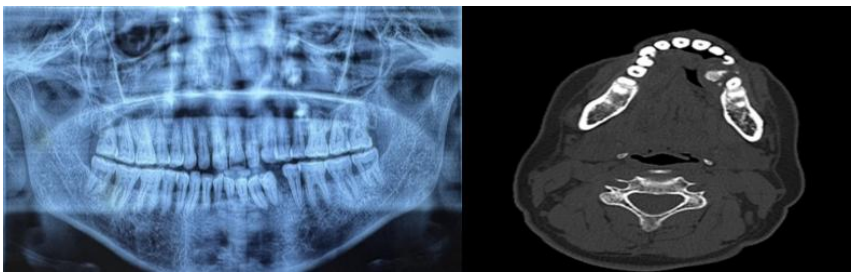

FIGURE 2: A- Orthopantomogram evaluation showed the presence of pathological migration of 33, 34. B- Computed Tomography scan revealed, ill-defined lesion measuring with calcification along the mandibular left lingual alveolus without root resorption. Expansion of lingual and buccal cortex of mandible noted.

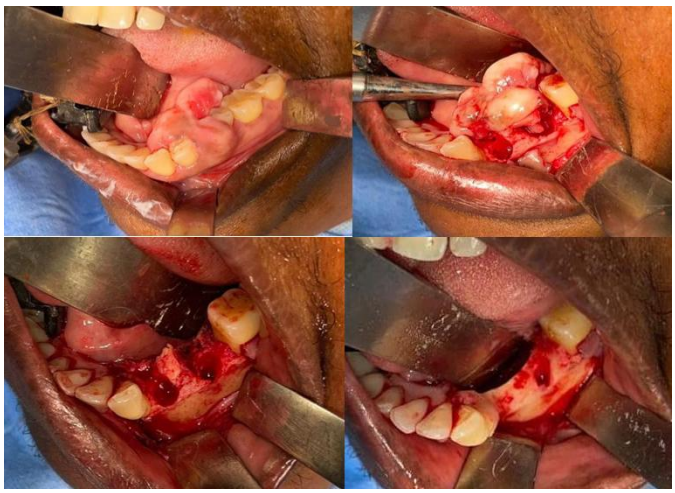

FIGURE 3:
A- Intraoral view showing extent of lesion intra-operatively.
B- Extraction of 34 ,35 under general anesthesia.
C- Surgical excision of the lesion, showing ossification intraorally
D- Peripheral ostectomy performed to smoothen the alveolar ridge.

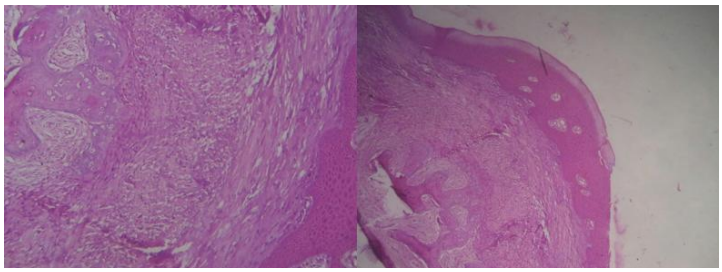

FIGURE 4: Histopathology Report-showing a fibro cellular stroma interspersed with mineralized material resembling bone and cementum, consistent with the known histologic spectrum of this entity.

FIGURE 5: Intraoral view of follow up. A- Follow up after 2 weeks. B- Follow up after 6 weeks.

III. Discussion

Peripheral ossifying fibroma (POF) is an uncommon, reactive gingival lesion that typically originates from the interdental papilla and is thought to arise from the periodontal ligament or periosteum [1]. Clinically, it presents as a smooth-surfaced, sessile or pedunculated mass, with coloration ranging from pale pink to deep red [2]. Although it can occur at any age, the lesion shows a marked predilection for females in the second and third decades of life [1][4]. About 3/5th of cases involves the maxilla, with a striking tendency for the incisor–canine region; mandibular occurrence, particularly in the anterior segment, is distinctly rare [3]. Most lesions measure less than 2 cm [6] and larger dimensions have been only occasionally documented in literature, making such presentations noteworthy. Despite being benign, POF demonstrates a recurrence rate of 16–20%, necessitating surgical excision with wide and deep margins to minimize relapse risk [1][5]

Peripheral ossifying fibroma (POF) is a well-recognized reactive gingival lesion that typically masquerades as a benign, innocuous overgrowth—but beneath its deceptively simple appearance lies a complex pathogenesis. Arising from the periodontal ligament, POF is triggered by chronic local irritants such as plaque, calculus, dental appliances, or minor trauma[2][4]. While the lesion most commonly affects the anterior maxilla of young females, its occurrence in the posterior mandible or in adult males is far less common, rendering such presentations diagnostically challenging [5].

What makes this case particularly instructive is the way it straddles the boundaries between a typically benign reactive lesion and features that mimic aggressive pathologies. The atypical size, site, and bone changes underscore the importance of maintaining a broad differential diagnosis when encountering unusual gingival enlargements, especially in posterior regions. These features highlight the unpredictable nature of this lesion and the need for a vigilant diagnostic approach. Although typically slow-growing, POF can attain substantial size and interfere with esthetics, speech, and mastication, as seen in this patient—thereby mimicking other aggressive soft tissue tumors.

Radiographic evaluation, often unremarkable in typical cases, may show faint radiopacities reflecting the lesion's calcified content. In our case, OPG and CT scan revealed soft tissue opacification without any bone involvement, reinforcing the lesion's peripheral origin. Yet, it is the histopathological examination that remains the gold standard for diagnosis—characterized by a fibroblastic stroma, areas of ossification, dystrophic calcifications, and occasional inflammatory infiltrates [6]. These classic features were evident and consistent with previously reported cases across literature. Surgical excision with deep curettage is the treatment of choice, targeting not just the lesion but also its potential origin in the periodontal ligament. Incomplete excision or failure to eliminate underlying irritants is the primary reason for recurrence, which has been reported in up to 20% of cases. In the current case, meticulous surgical removal and postoperative plaque control played a crucial role in preventing recurrence during the six-month follow-up period.

The clinical presentation of POF can mimic other oral lesions, making differential diagnosis challenging [7]. In essence, peripheral ossifying fibroma may wear a benign disguise, but its behavior demands clinical suspicion, precise histopathological confirmation, and thorough surgical management. Especially when presenting outside its typical demographic [8] and anatomic profile, as in this case, POF challenges clinicians to think beyond the obvious—and reminds us that even reactive lesions can behave unpredictably if left unchecked.

IV. Conclusion

This case reinforces the need for clinicians to be vigilant when encountering gingival lesions that deviate from the textbook appearance of POF. Early biopsy, imaging, and comprehensive management remain crucial, particularly in atypical cases such as this one. It also adds to the sparse literature on posterior mandibular POFs and highlights the rare possibility of cortical erosion, thereby expanding the known clinical behaviour of this lesion.

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