IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 24, Issue 9 Ser. 1 (September. 2025), PP 16-21
www.iosrjournals.org

Peripheral Ossifying Fibroma Presenting As A Mandibular Swelling: A Rare Case Report In A Young Adult

Dr. Santosh Shukla,
Assistant Professor, Dept. Of Dentistry, Midnapore Medical College & Hospital

Dr. Avik Kumar Biswas,
Dental Surgeon, Dept. Of Dentistry, Midnapore Medical College & Hospital.

Dr. Shyamali Mahato,
Dental Surgeon, JR. Dept. Of Dentistry, Midnapore Medical College & Hospital.

Abstract:
Localized gingival proliferative lesions are among the most frequently encountered oral cavity pathologies, typically exhibiting a reactive rather than neoplastic etiology. The diagnostic challenge arises due to the overlapping clinical presentations of several entities, including inflammatory fibroma, peripheral giant cell granuloma, peripheral ossifying fibroma (POF), and pyogenic granuloma. Among these, POF is relatively uncommon. Its histopathological heterogeneity has contributed to significant ambiguity in its nomenclature and classification within the spectrum of reactive gingival lesions.

Keywords: *gingival hyperplasia; sessile growth; peripheral ossifying fibroma; epulis; excisional biopsy; pyogenic granuloma; oxytalan fibers; periodontal ligament; fibrous; benign; cementum.*

Date of Submission: 22-08-2025 Date of Acceptance: 02-09-2025

I. Introduction:

Peripheral Ossifying Fibroma (POF) is an exophytic, fibro-osseous gingival lesion, typically originating from the interdental papilla. Peripheral ossifying fibroma (POF) typically manifests as a localized gingival overgrowth, presenting clinically as either a sessile or pedunculated mass. The surface of the lesion may range in appearance from erythematous to pale pink, depending on the degree of vascularity and presence of surface trauma. In its early stages, ulceration of the overlying epithelium is frequently observed, often attributed to mechanical irritation from masticatory forces or oral hygiene practices. Over time, chronic lesions may exhibit signs of epithelial maturation, including increased keratinization and thickening of the surface epithelium.[1]

Clinically, POF can be challenging to distinguish from other reactive gingival lesions due to its non-specific presentation. When ulcerated, it may resemble a pyogenic granuloma, whereas non-ulcerated lesions often mimic irritation fibromas or other fibrous hyperplasia. The size of the lesion generally remains under 2 cm in diameter at the time of diagnosis; however, it may exhibit slow, progressive enlargement, particularly if local irritants such as plaque, calculus, or trauma are not eliminated. Despite its growth potential, the lesion is often asymptomatic and may go undetected for an extended period, being discovered incidentally during routine dental examinations or when it interferes with mastication or aesthetics.

Epidemiologically, POF demonstrates a clear predilection for females, particularly during the second decade of life, suggesting a possible hormonal influence in its pathogenesis. It most frequently occurs in the anterior maxilla, with the incisor–canine region being the most commonly affected site. The higher prevalence in this region may be related to the rich periodontal ligament content and the greater exposure to local irritants in this area due to oral habits and occlusal forces.

These clinical characteristics, in conjunction with histopathological findings—such as a highly cellular fibroblastic stroma with mineralized components—are essential for establishing an accurate diagnosis and differentiating POF from other gingival proliferative lesions.

Although typically not affecting dentition, rare cases may show tooth displacement or mobility. The lesion demonstrates a marked female predilection, accounting for approximately 66% of cases.[2]

This is a case presentation of a 17-year-old female with gingival overgrowth in the mandibular right incisor-canine region. The lesion presented clinically as an asymptomatic, firm, pale pink, sessile mass. Complete

surgical excision was undertaken, and the diagnosis was corroborated through histopathological examination, with emphasis on correlating the clinical presentation. Given the documented recurrence rate of peripheral ossifying fibroma, ranging from 8% to 20%, rigorous post-operative surveillance is warranted.[3]

II. Case Report:

A 17-year-old female patient presented to the Department of Dentistry, Medinipur Medical College and Hospital, with a chief complaint of a swelling in the oral cavity that had gradually increased in size over the past two years. The patient reported that the swelling was initially small and asymptomatic but progressively enlarged without any associated pain, discharge, or functional impairment.

There was no history of similar swellings in the oral cavity or elsewhere in the body. Her past medical history was unremarkable, with no known systemic illnesses, allergies, or previous hospitalizations. Family history revealed no incidence of similar lesions or hereditary conditions, rendering both medical and familial backgrounds non-contributory.

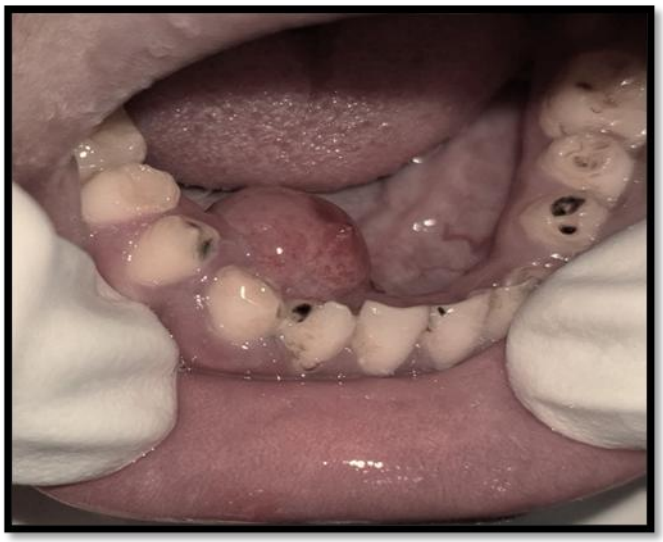

Figure 1: Intraoral

Intraoral clinical examination revealed a well-defined, fibrotic, sessile soft tissue mass located in the lingual vestibule and attached gingiva corresponding to the mandibular right lateral incisor, canine, and first premolar (teeth 42, 43, and 44) Figure 1.

The growth was pink in color, exhibited a smooth and intact mucosal surface, and measured approximately 2.0 × 1.5 × 1.0 cm. No signs of surface ulceration, discharge, or secondary infection were evident. On palpation, the mass was non-tender, firm in consistency, and immobile, suggestive of a benign, fibrous proliferation.

Occlusal radiograph (Figure 2) and orthopantomogram (Figure 3) showed no significant bony changes.

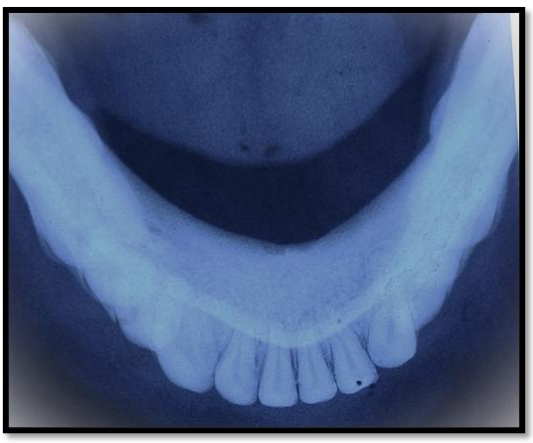

Figure 2: Occlusal radiograph

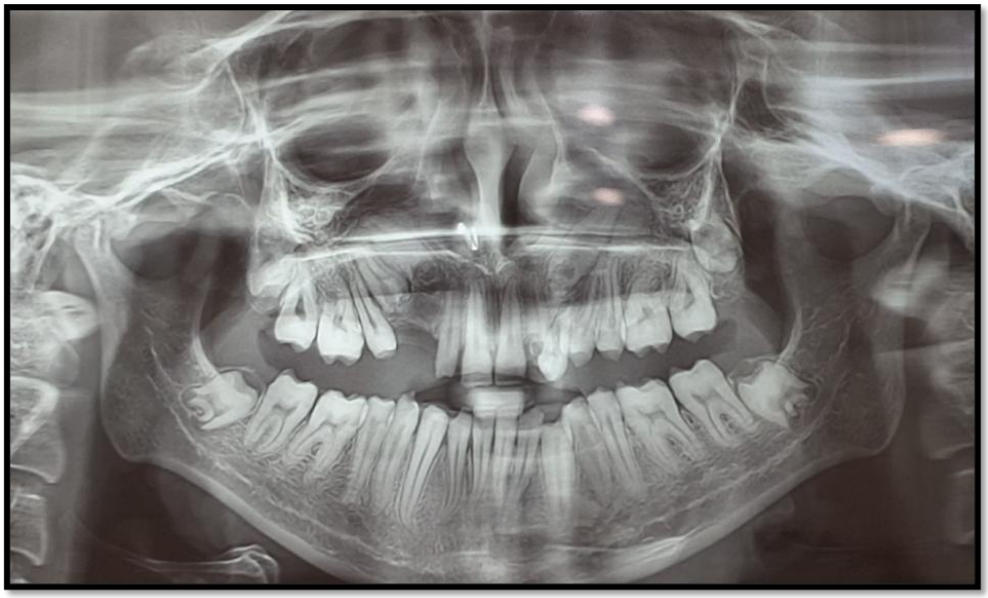

Figure 3: Orthopantomogram

Provisional diagnosis: Pyogenic granuloma; peripheral ossifying fibroma.

Treatment:

Following the elimination of local irritants through thorough ultrasonic scaling, sclerotherapy was administered using distilled water combined with a local anesthetic agent. The procedure was repeated over four sessions.

After obtaining an ECG and conducting comprehensive blood investigations, necessary approvals were secured from the ENT and MOPD departments to proceed with surgical excision of the lesion under local anesthesia in the mandibular lingual region. Complete excision of the lesion along with gingival curettage was performed to minimize the risk of recurrence. Postoperatively, the patient was advised on proper oral hygiene maintenance to prevent relapse.

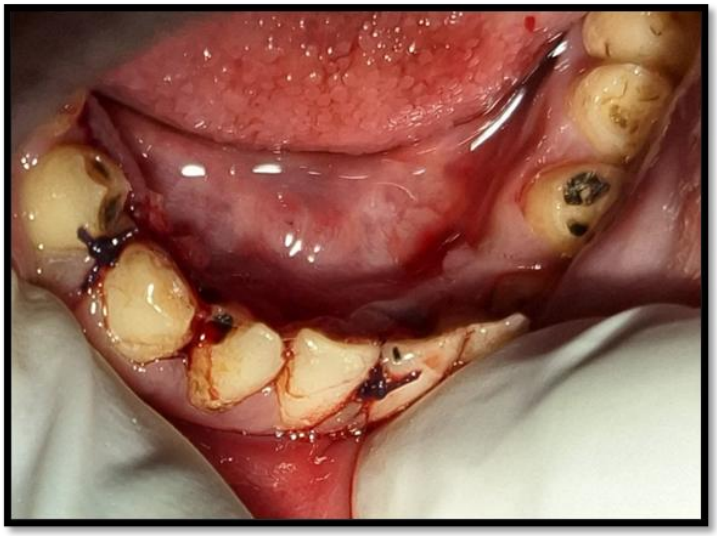

Figure 4: Intraoral (After excisional biopsy of the growth.)

Biopsy:

Gross section shows single irregular whitish tissue piece measuring (0.4cm×0.3cm×0.2cm). Microscopic examination shows a squamous epithelium line tissue which is partly ulcerated. There is sub- mucosal granulation fibroma formation and proliferation of bland stellate shaped spindle cells. A central woven of bone formation is seen with small bony spicules present in the surrounding.

Histopathological features consistent with ***peripheral ossifying fibroma***.

Follow up: The patient was scheduled for a follow-up visit after 7 days. (Figure 5)

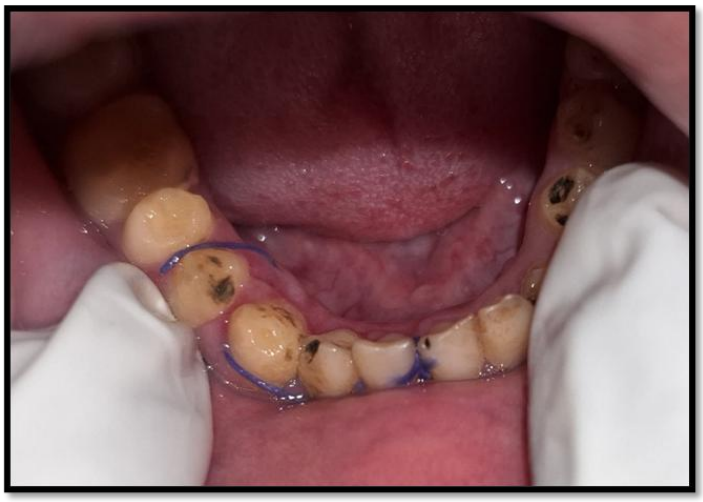

Figure 5: Follow up after 7 days.

Due to inadequate oral hygiene maintenance following the surgical procedure, oral prophylaxis was performed six months postoperatively (Figure 6) postoperatively.

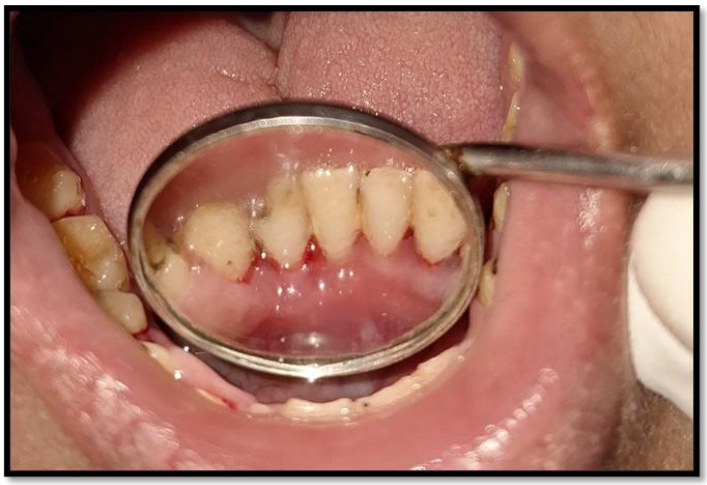

Figure 6: Intraoral (follow up after 6 months)

Postoperative healing proceeded without complications, and no recurrence was observed during the 12-month follow-up period.

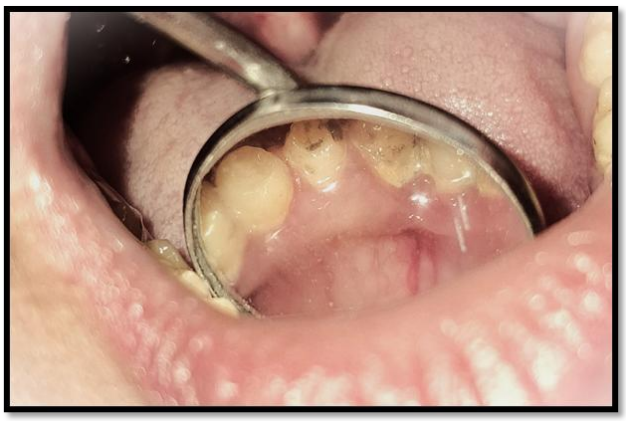

Figure 7: Intraoral (follow up after 12 months)

Differential Diagnosis:
Based on the clinical presentation, the following differential diagnoses were considered:
Peripheral Ossifying Fibroma (POF) – due to its firm consistency, gingival location, and slow growth.
Peripheral Giant Cell Granuloma (PGCG) – because of the reddish hue and occasional bleeding.
Pyogenic Granuloma – considered but less likely, given the lesion's firm consistency and chronic nature.
Fibrous Epulis – another possibility, but the potential presence of mineralization directed suspicion toward POF

III. Discussion:

Since their initial description in the late 1940s, intraoral ossifying fibromas have been classified under multiple terminologies, including epulis, peripheral fibroma with calcification, calcifying fibroblastic granuloma, peripheral cementifying fibroma, peripheral fibroma with cementogenesis, and peripheral cemento-ossifying fibroma. This diversity in terminology underscores the persistent controversy and diagnostic uncertainty surrounding the histopathological classification and biological behavior of these fibroblastic gingival lesions. Kenney et al. have proposed the significance of hormones, noting that the condition is more prevalent in females, often arises in the second decade of life, and diminishes with advancing age.[4]

Ossifying fibromas are benign fibro-osseous neoplasms that predominantly affect the craniofacial skeleton and are broadly classified into central and peripheral variants based on their anatomical location and origin.

- **Central ossifying fibroma:** originates within the jaw bones, typically from the endosteum or the periodontal ligament adjacent to the root apex of teeth, and exhibits progressive expansion within the medullary cavity. This intraosseous growth may lead to displacement of adjacent structures and cortical bone expansion.
- **Peripheral ossifying fibroma:** arises within the soft tissues of the gingiva, particularly in the interdental papilla region, and is thought to derive from the periodontal ligament. Although it is extraosseous, it maintains a close anatomical and developmental association with the periodontal ligament apparatus.

The presumed PDL origin of peripheral ossifying fibroma (POF) is supported by its exclusive gingival location, frequent occurrence in the interdental papilla, anatomical proximity to the PDL, presence of oxytalan fibers within the lesion, age distribution relative to tooth loss, and its fibro cellular pattern resembling other PDL-derived reactive lesions.[5,6]

Peripheral ossifying fibroma is diagnosed histopathologically, with differentials including fibroma, Peripheral giant cell granuloma, pyogenic granuloma, and peripheral odontogenic fibroma[7] A definitive diagnosis of POF requires histopathological examination of a biopsy specimen.

Histologically, peripheral ossifying fibroma (POF) exhibits a highly cellular fibroblastic connective tissue stroma, predominantly composed of numerous actively proliferating, plump spindle-shaped fibroblasts. These fibroblasts are typically arranged in short interlacing bundles or whorled patterns and are interspersed within a fine, delicate fibrillar collagenous matrix. The stromal component may also show areas of myxoid change, and scattered inflammatory cell infiltrates. This cellular architecture reflects a reactive proliferative process characteristic of lesions derived from the periodontal ligament.

According to Buchner et al., the mineralized component of POF may present as:

- woven, lamellar, or trabecular bone occasionally bordered by osteoid;
- cementum-like material in the form of spherical or coalesced eosinophilic bodies; and
- dystrophic calcifications ranging from fine basophilic granules to large irregular masses.

The overlying epithelium is typically stratified squamous and may be either intact or ulcerated. In some cases, multinucleated giant cells are present, resembling histologic features seen in peripheral giant cell granuloma.[8]

The standard treatment for peripheral ossifying fibroma (POF) includes surgical excision accompanied by debridement and scaling of adjacent teeth to remove potential sources of irritation.[9] Recurrence rates have been documented between 8.9% and 20%, highlighting the importance of consistent follow-up to ensure early detection and management of any recurrence.[2,10]

IV. Conclusion:

Peripheral ossifying fibroma represents a distinct clinicopathological entity within the spectrum of reactive gingival overgrowths. Accurate diagnosis, based on a combination of clinical, radiographic, and histological findings, is essential for effective management and prevention of recurrence.

Reference:

[1]. Bhaskar, S. N., & Jacoway, J. R. (1966). Peripheral Fibroma And Peripheral Fibroma With Calcification: Report Of 376 Cases. Journal Of The American Dental Association (1939), 73(6), 1312–1320. Https://Doi.Org/10.14219/Jada.Archive.1966.0375
[2]. Eversole LR, Rovin S. Reactive Lesions Of The Gingiva. J Oral Pathol. 1972;1(1):30-8. PMID: 4626993.

[3]. Gardner DG. The Peripheral Odontogenic Fibroma: An Attempt At Clarification. Oral Surg Oral Med Oral Pathol. 1982 Jul;54(1):40-8. Doi: 10.1016/0030-4220(82)90415-7. PMID: 6750498.
[4]. Kenney JN, Kaugars GE, Abbey LM. Comparison Between The Peripheral Ossifying Fibroma And Peripheral Odontogenic Fibroma. J Oral Maxillofac Surg. 1989 Apr;47(4):378-82. Doi: 10.1016/0278-2391(89)90339-X. PMID: 2926546.
[5]. Saito I, Ide F, Inoue M, Teratani K, Satoh M, Kiuchi K, Umemura S. Periosteal Ossifying Fibroma Of The Palate. J Periodontol. 1984 Dec;55(12):704-7. Doi: 10.1902/Jop.1984.55.12.704. PMID: 6596423.
[6]. Miller, C. S., Henry, R. G., & Damm, D. D. (1990). Proliferative Mass Found In The Gingiva. Journal Of The American Dental Association (1939), 121(4), 559–560. Https://Doi.Org/10.14219/Jada.Archive.1990.0193
[7]. Cuisia ZE, Brannon RB. Peripheral Ossifying Fibroma--A Clinical Evaluation Of 134 Pediatric Cases. Pediatr Dent. 2001 May-Jun;23(3):245-8. PMID: 11447957.
[8]. Buchner A, Hansen LS. The Histomorphologic Spectrum Of Peripheral Ossifying Fibroma. Oral Surg Oral Med Oral Pathol. 1987 Apr;63(4):452-61. Doi: 10.1016/0030-4220(87)90258-1. PMID: 3472146.
[9]. Farquhar, T., Maclellan, J., Dyment, H., & Anderson, R. D. (2008). Peripheral Ossifying Fibroma: A Case Report. Journal (Canadian Dental Association), 74(9), 809–812.
[10]. Sujatha, Govindarajan & Gopalakrishnan, Sivakumar & Jayanandan, Muruganandhan & Selvakumar, J & Ramasamy, Manivannan. (2018). Peripheral Ossifying Fibroma – Report Of A Case.