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# PERIPHERAL ODONTOGENIC FIBROMA IN THE MANDIBULAR ANTERIOR REGION: A RARE CASE REPORT

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**ABSTRACT:**
**Background:** Peripheral odontogenic fibroma (POdF) is a rare benign odontogenic neoplasm arising from the gingival soft tissues. It accounts for a very small proportion of odontogenic tumors and is frequently mistaken clinically for more common reactive gingival lesions such as pyogenic granuloma, peripheral ossifying fibroma, or irritation fibroma. Histopathological examination is therefore essential for definitive diagnosis.
**Case Presentation:** A 67-year-old male presented with a painless, slowly enlarging pedunculated swelling in the mandibular anterior region that had been present for 10 years. The lesion measured approximately 3 × 2 cm and was fibrous without ulceration or bleeding. Clinical and radiographic evaluation revealed retained root stumps in relation to teeth 31, 41, and 42. Following an excisional biopsy, complete surgical excision of the lesion with extraction of the retained root stumps was performed. Histopathological examination confirmed the diagnosis of peripheral odontogenic fibroma. Healing was uneventful, and an interim removable partial denture was provided one month after surgery.
**Conclusion:** Peripheral odontogenic fibroma should be considered in the differential diagnosis of long-standing gingival enlargements. Careful clinicopathological correlation and complete surgical excision are essential for accurate diagnosis, successful treatment, and prevention of recurrence.

**KEYWORDS:** Peripheral odontogenic fibroma; odontogenic tumor; gingival swelling; mandibular anterior region; case report.

## INTRODUCTION

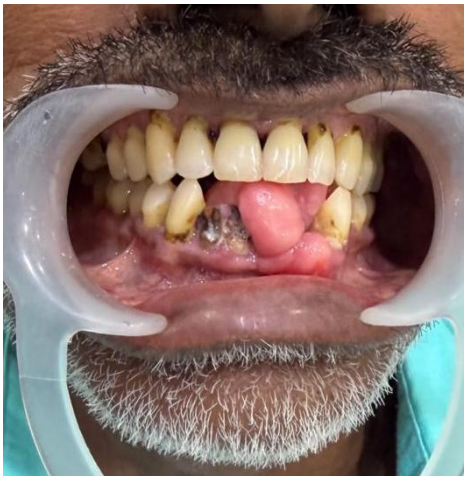
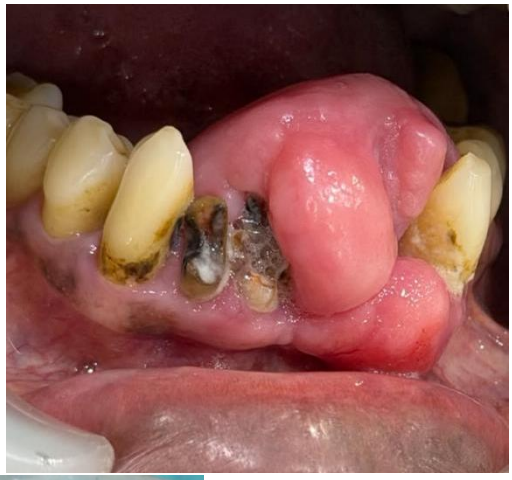
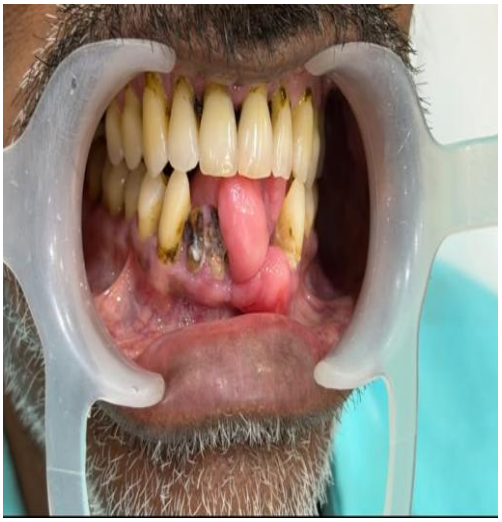
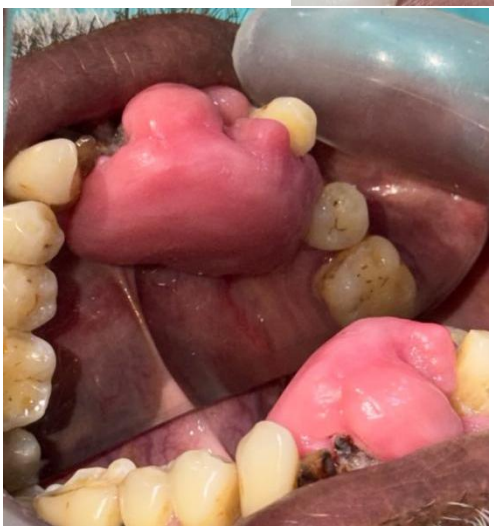
Peripheral odontogenic fibroma (POdF) is an uncommon, benign odontogenic neoplasm derived from the ectomesenchymal tissues of the periodontal ligament or dental follicle. According to the World Health Organization (WHO) classification, POdF is recognized as the extraosseous counterpart of the central odontogenic fibroma.[1,2] It accounts for a minor fraction of all odontogenic tumors, making it a diagnostic entity rarely encountered in routine clinical practice.[3]

Clinically, POdF typically presents as a slow-growing, painless, exophytic gingival mass with either a sessile or pedunculated base.[3,4] Although it can affect individuals across a wide age spectrum, a distinct site predilection exists for the anterior and premolar regions of the mandible. Because its macroscopic appearance closely mimics common reactive gingival lesions—such as irritation fibroma, peripheral ossifying fibroma, pyogenic granuloma, and peripheral giant cell granuloma—a definitive diagnosis based solely on clinical findings is virtually impossible.[3–5]

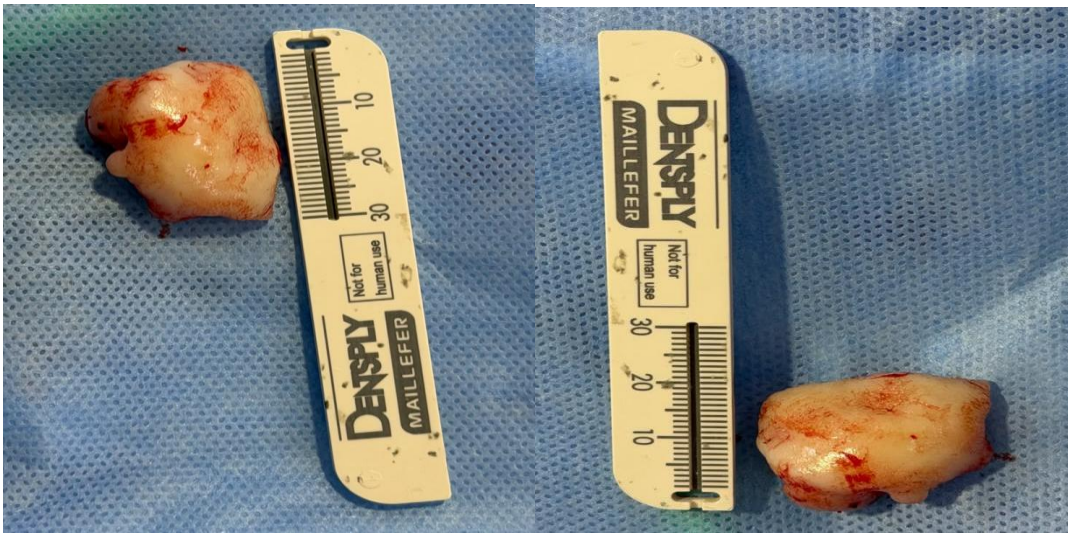
Radiographic evaluation typically demonstrates a soft tissue lesion with no underlying osseous involvement, though localized alveolar crest erosion, saucerization, or displacement of adjacent teeth may occasionally be observed.[3] Consequently, histopathological examination remains the gold standard for definitive diagnosis. Histologically, POdF is characterized by a fibrocellular connective tissue stroma interspersed with strands or islands of inactive odontogenic epithelium, frequently accompanied by variable amounts of calcified matrix resembling dysplastic

### Case Presentation

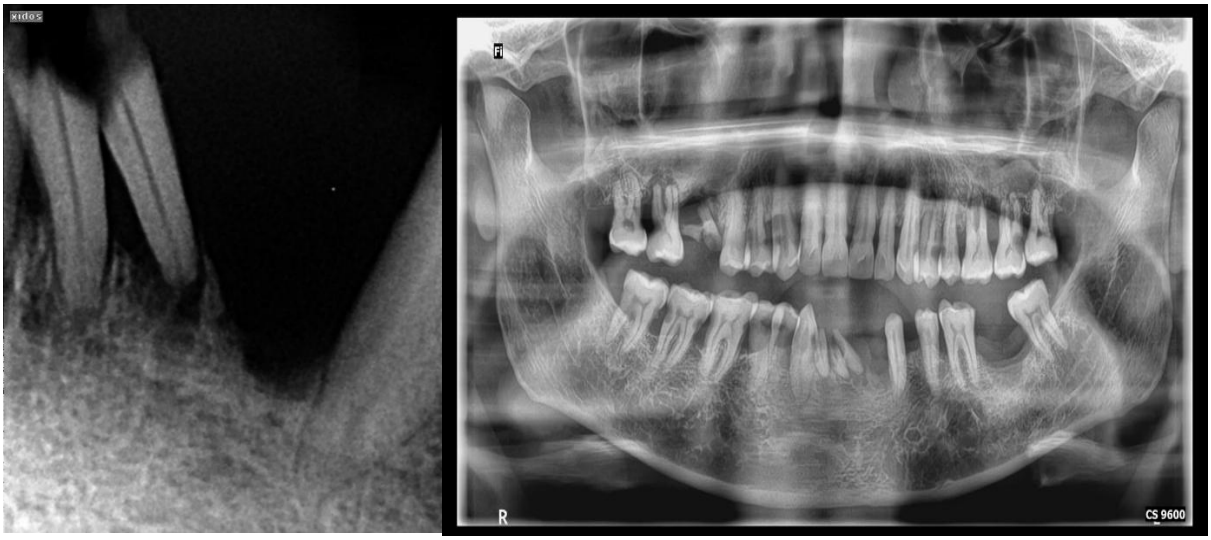
A 67-year-old male presented to our clinic with a chief complaint of a longstanding swelling in the lower anterior region of the jaw that had been present for approximately 10 years. The swelling was painless and same in size throughout its course and was not associated with bleeding, ulceration, discharge, or paraesthesia. The patient primarily sought treatment because of difficulty in mastication and maintenance of oral hygiene.

Extraoral examination was unremarkable, with no facial asymmetry or palpable cervical lymphadenopathy.
Intraoral examination revealed a solitary pedunculated soft tissue mass involving the mandibular anterior alveolar ridge. The lesion measured approximately 3 × 2 cm, was soft in consistency, non-tender on palpation, and exhibited a smooth surface without ulceration. There was no spontaneous bleeding. Root stumps were present in relation to teeth 31, 41, and 42.




Radiographic investigations, including an orthopantomogram (OPG) and intraoral periapical radiographs (IOPA), confirmed the presence of retained root stumps in relation to teeth 31, 41, and 42 without significant intraosseous involvement. An incisional biopsy was performed, and histopathological examination suggested an odontogenic fibroma.




Based on the clinical, radiographic, and histopathological findings, complete surgical excision of the lesion along with extraction of the retained root stumps was carried out under local anesthesia. The excised specimen was submitted for definitive histopathological examination, which confirmed the diagnosis of peripheral odontogenic fibroma.

The postoperative course was uneventful, with satisfactory soft tissue healing. One month after surgery, an interim removable partial denture was fabricated and delivered to restore function and esthetics. The patient remains under regular follow-up for evaluation of healing and possible recurrence.

## DISCUSSION

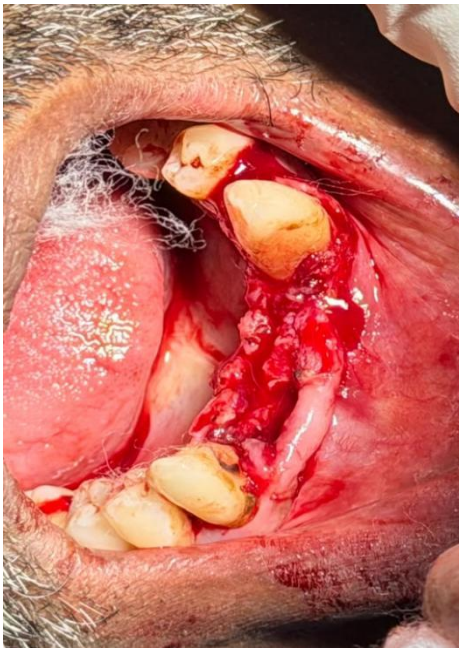
Peripheral odontogenic fibroma (POdF) is one of the rarest benign odontogenic tumors, with the current body of literature largely restricted to isolated case reports and small case series.[3–5] Classified by the WHO as the extraosseous counterpart of central odontogenic fibroma, it is accepted to originate from ectomesenchymal structures, including remnants of the periodontal ligament, dental follicle, or dental lamina.[2,3]

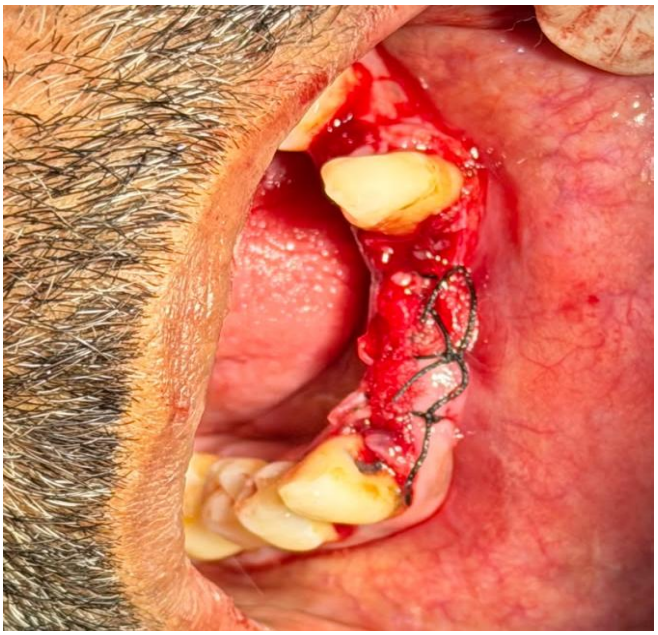
Epidemiologically, POdF typically exhibits a peak incidence between the second and fourth decades of life, with a slight predilection for the anterior and premolar regions of the mandible.[3,4] The present case of a 67-year-old male demonstrates the typical anatomical location; however, the presentation in a patient in his late seventh decade represents an older demographic tail. Furthermore, while most reported POdFs measure under 1.5–2 cm at diagnosis due to earlier clinical intervention, the lesion in our patient expanded to approximately 3 × 2 cm after 10 years of unaddressed progression.[4,5] This remarkable size highlights the indolent, non-aggressive, and slowly progressive nature of this neoplasm.

A key clinical aspect of this case was the presence of retained root stumps in relation to teeth 31, 41, and 42 directly beneath the mass. Although POdF is recognized as a true neoplasm, an ongoing debate exists regarding whether chronic mechanical irritation can act as a trigger or co-factor in its progression. In our patient, long-standing local irritation caused by the fractured, non-restorable roots likely contributed to localized tissue proliferation and masked the neoplastic process, further delaying medical presentation.

Clinical differentiation of POdF from common reactive gingival lesions—including irritation fibroma, peripheral ossifying fibroma (POF), pyogenic granuloma (PG), peripheral giant cell granuloma (PGCG), and giant cell fibroma—is virtually impossible based on inspection alone.[3,6] Definite diagnosis requires histopathological evaluation. Microscopically, POdF is distinguished from reactive lesions by its hallmark feature: islands or cords of inactive odontogenic epithelium embedded in a fibrous stroma, often with variable cementum-like or dentinoid calcifications, whereas lesions like PGCG or PG demonstrate multinucleated giant cells or lobular vascular proliferation, respectively.[2,3,6]

Complete surgical excision including the underlying periosteum remains the definitive treatment for POdF.[3,5] In this case, complete surgical removal of the tumor mass was performed concurrently with the extraction of the retained root stumps (teeth 31, 41, and 42). Concurrent removal of these root stumps was critical not only for clearing non-restorable dental pathology, but also for eliminating potential local irritants that could compromise healing. Although reported recurrence rates range from 10% to 20% following incomplete resection or retention of local irritants, complete excision down to sound tissue yields an excellent prognosis with minimal risk of relapse.[3,5]



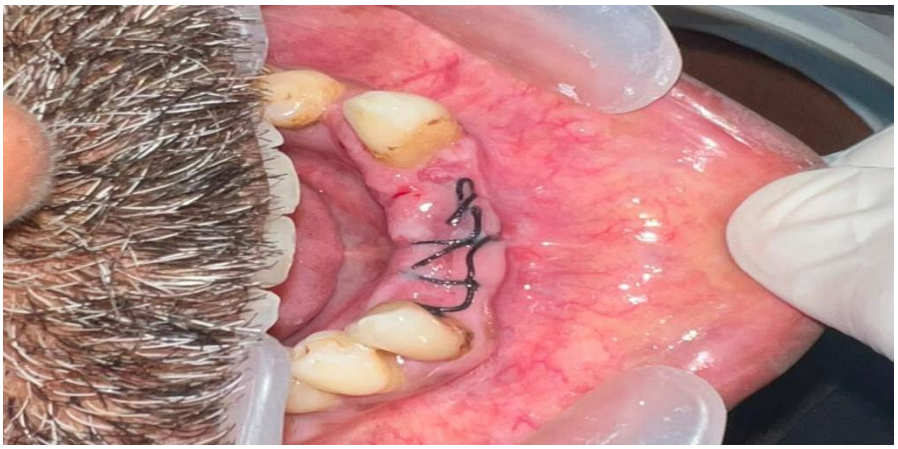


In conclusion, this case underscores the necessity of maintaining a high index of suspicion for peripheral odontogenic fibroma when evaluating long-standing, persistent gingival enlargements. Thorough clinicopathological correlation, complete surgical excision, and elimination of adjacent chronic irritants are essential to secure an accurate diagnosis, achieve successful functional rehabilitation, and prevent local recurrence.

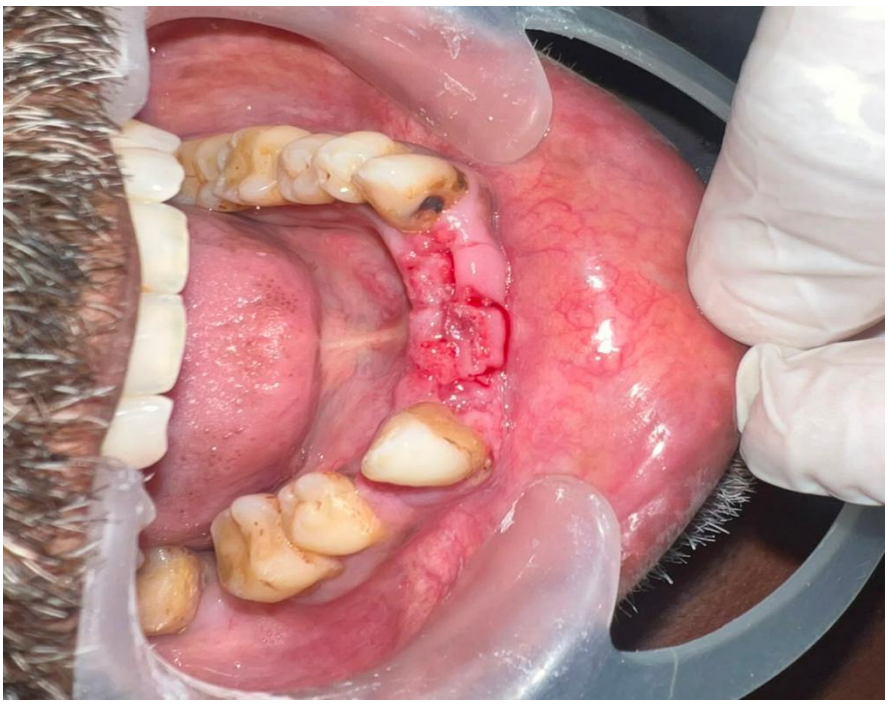
**CONCLUSION**

Peripheral odontogenic fibroma (POdF) is a rare benign odontogenic neoplasm that clinically masquerades as common reactive gingival enlargements. Because clinical and radiographic presentation can be non-specific, definitive diagnosis relies strictly on thorough histopathological evaluation. Complete surgical excision—coupled with the complete removal of local chronic irritants, such as non-restorable retained root stumps—is essential to secure an accurate diagnosis and minimize the risk of local recurrence. Although the prognosis following total resection is excellent, long-term postoperative surveillance remains mandatory. Clinicians should maintain POdF in the differential diagnosis of long-standing, exophytic gingival masses of the anterior mandible, regardless of patient age or lesion size.

1 WEEK POST OP



1 WEEK POST OP AFTER SUTURE REMOVAL



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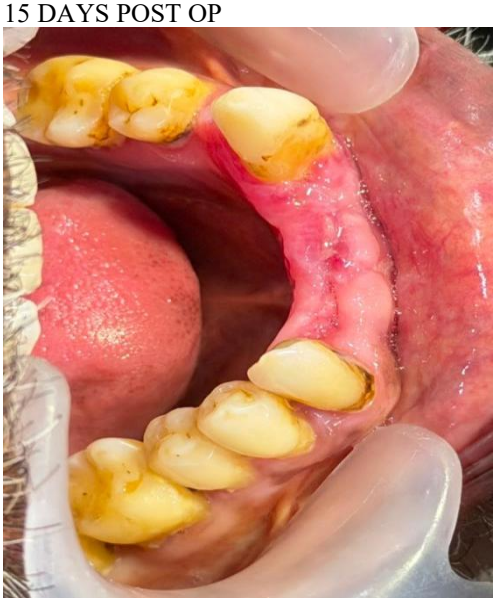

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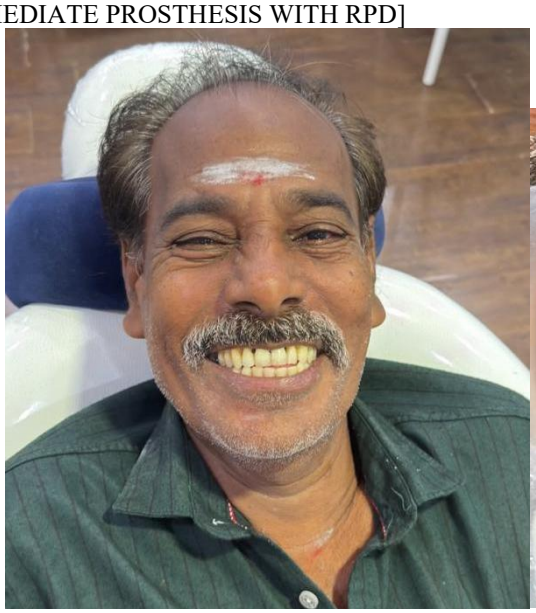
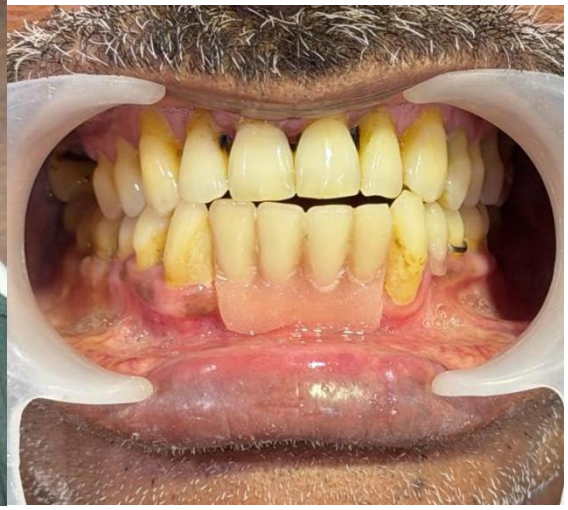
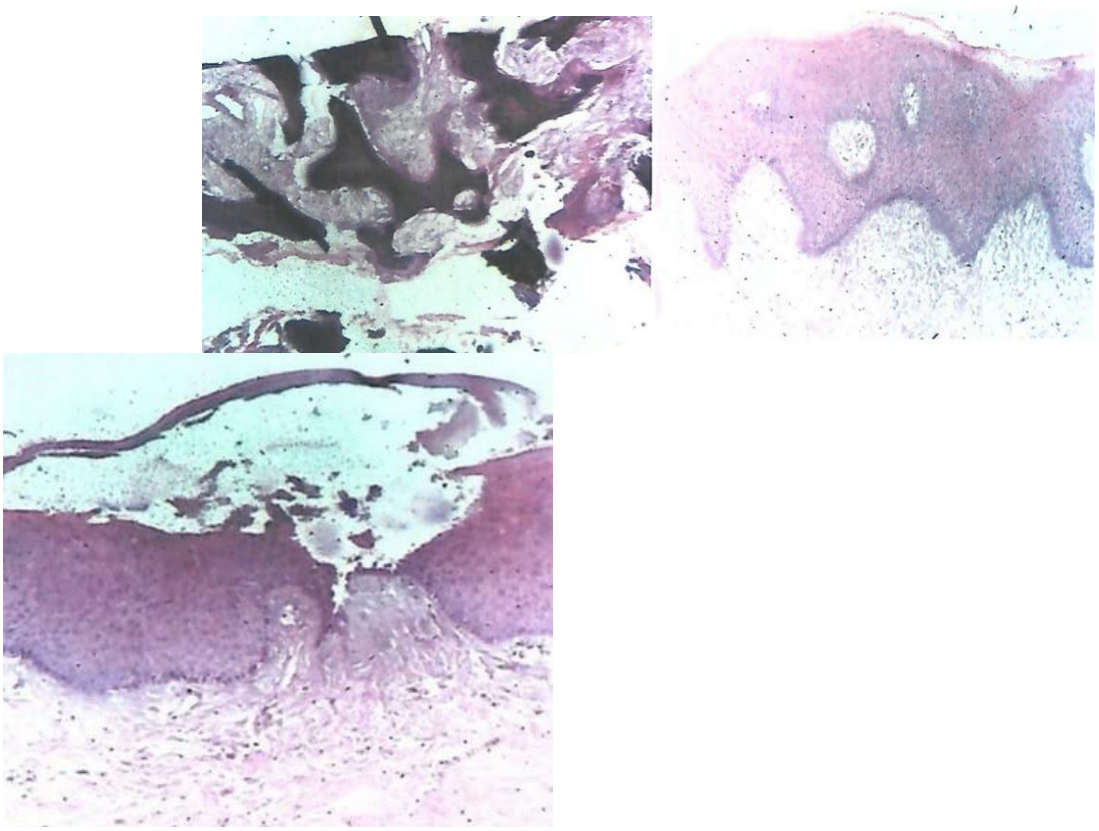




HISTOPATHAOLGY FINDINDS



Section studied shows stratified squamous lining epithelium with hyperplasic and spongiotic changes. Significant thickening [acanthosis] leading to fusion of rete ridges seen.
Underlying abundant myxoid and loose fibro collagenised tissue show focal hyalinization with areas of fibrosis, sclerosis of thick band tissue. Focal areas of odontogenic epithelium seen.
Odontogenic epithelium is benign bland with increased vascularity

DIAGNOSIS: ODONTOGENIC FIBROMA

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