



## Case report

# Large peripheral ossifying fibroma interfering with the normal functions of the oral cavity: A rare case report presentation and discussion

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## ABSTRACT

**Introduction:** Peripheral ossifying fibroma (POF) is a common localized, reactive benign gingival growth. POF usually measuring <2 cm in diameter.

**Case presentation:** We present a case of a 25-year-old, female with a large-sized peripheral ossifying fibroma in the oral cavity. The patient presented with an asymptomatic, slowly growing gingival mass in the lower left anterior area of the oral cavity which had been gradually increased in size for more than five years.

**Clinical discussion:** This case report shows that POF can grow and reach unusual dimensions that may, also, contribute to occlusal problems and lip incompetence.

**Conclusion:** POF should be excised completely to decrease the chance of lesion recurrence.

## 1. Introduction

POF is a reactive, slow growing, pedunculated or sessile, pink or red, tumor-like gingival growth. It usually arises from the cells in the periodontal ligaments and periosteum; mainly the interdental part of the anterior mandibular teeth. Moreover, the prevalence of POF is high among teenager and young adult females [1].

Although Peripheral ossifying fibromas are commonly encountered in the oral cavity; however, it is comparatively rarely encountered to reach unusual size and interfere with the occlusion, the lip competency and facial proportion. In most of the reported cases, POF measuring less than 2 cm in greatest dimension. POF measuring a 4 cm or more in greatest dimension is relatively rare and a review of literature yielded few relevant cases. The present report aims at presenting a POF involving the mandibular anterior gingival region, causing remarkable teeth displacement, lip incompetence and changes in facial proportions in a 25-year-old female. Early intervention is highly recommended to avoid teeth malalignment, occlusal problems and facial asymmetry. "The work has been reported in line with the SCARE 2020 criteria" [2].

## 2. Case report

A 25-year-old female referred to an oral medicine clinic for evaluation of a painless, slowly growing, firm gingival mass in the lower left anterior area of the oral cavity which had been gradually increased in size for more than five years. The gingival growth caused adjacent teeth

displacement, lip incompetence and changes in facial proportions.

Medical history revealed that she had no known medical issues and not taking any drug. The family history revealed no genetic conditions. It is worthwhile to mention that the location of the oral lesion caused a negative impact in the patient's social life. Consequently, she was not confident and embarrassed to show her smile. The extraoral examination showed lip incompetence at rest due to the progressing growth of the intraoral mass.

Intraoral examination showed an asymptomatic, mobile, pedunculated, irregular, rubbery, pinkish-red soft tissue growth, arising from the gingiva between teeth #32 and #33, covered by ulcerated mucosa on the site of occlusion. The mass extended from the alveolar mucosa, spanning teeth #34 through #42 (Fig. 1a and b). On palpation, the growth was painless with presence of bleeding.

Radiographic examination demonstrated displacement of teeth #34, 33, 32, 31, 41. In addition, bone loss in relation with teeth 34, 33, 32, 31, 41 was noted (Fig. 1c).

The differential diagnosis was listed based on the given history, clinical presentation, and radiographic findings includes pyogenic granuloma; it is commonly red, soft, friable and may become fibrotic and change in color with time, peripheral fibroma, peripheral ossifying fibroma; usually firm, smooth and pink in color, peripheral giant cell fibroma and peripheral giant cell granuloma.

Blood investigations revealed normal results: a serum calcium 8.5 mg/dL, and a serum PTH 5.2 pmol/L.

A written consent was obtained from the patient. Also, the surgery

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was performed by a senior registrar of oral medicine. A complete surgical excision of the tissue mass was performed by scalpel under local anesthesia; the lesion was removed completely down to the periosteum. No extractions were carried out along with the excision of the tissue mass. Cleaning of the adjacent teeth thoroughly to eliminate any possible source of local irritation (Fig. 1d). A single mass of soft tissue, measuring a 4.5 cm in the longest dimension, (Fig. 2a) was obtained in a 10% formalin container and submitted for histopathologic evaluation.

Microscopic analysis of the excisional biopsy specimen of the oral growth showed polypoid pieces of squamous-lined tissue with areas of ulceration and underlying chronic inflammation. Within the polypoid tissue, there are foci of bone, which are rimmed by osteoblasts. These bone foci are embedded in the fibrotic stroma consisting of bland, spindle fibroblasts. Few bacterial colonies, morphologically consistent with *Actinomyces* species are seen next to the epithelium surface (Fig. 2b). The mass is consistent with peripheral ossifying fibroma.

The patient's age, gender, location of the lesion, as well as radiographic and the histopathologic findings are consistent with a peripheral ossifying fibroma. Moreover, recall visits revealed good healing with no complications in the area of #32 and #33. The patient was instructed to follow strict post-surgical oral hygiene instructions. Evidently, this patient tolerated the surgery very well and had fast recovery. Two weeks, 1 month, three months, and six months recall visits were scheduled to rule out any kind of post-operative infection, bleeding and delay of healing. At one- and two-year follow-up, she was lesion-free and without any complications.

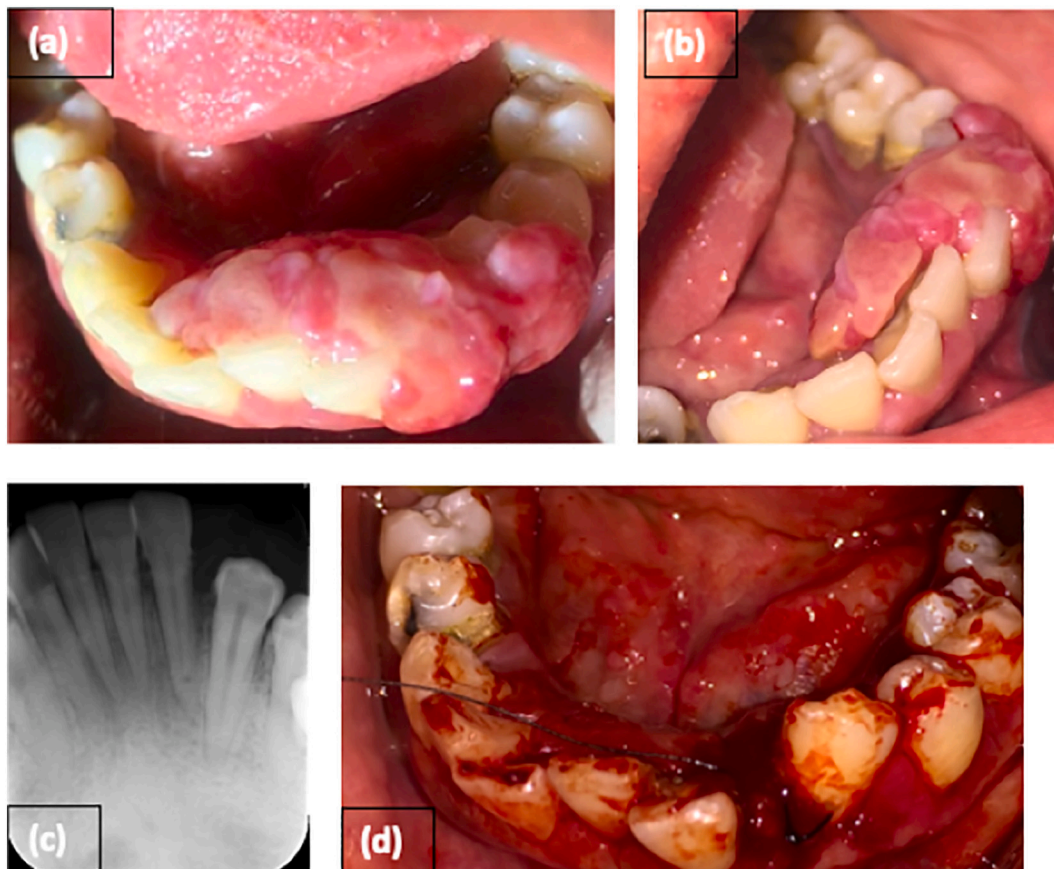
### 3. Discussion

POF is not uncommon lesion that primarily affects the gingival tissues. Regarding the size of the conventional POF usually remains to be less than 2 cm in greatest dimension [3]. On the other hand, in this case, the lesion had an unusual large size, which measured more than 4 cm in its longest dimension. The etiology of this growth is controversial. However, POF is highly supported to be arising from the periodontal ligament cells (PDL) because it exclusively occurs in the interdental papilla of the gingiva, as well as the close relation of the gingiva to the PDL [4–5]. A long-term foreign body in the gingival sulcus, subgingival calculus, and gingival injury are common local irritants that in some occasions cause POF. It is caused as a response of increase production of mature fibrous connective tissue [6].

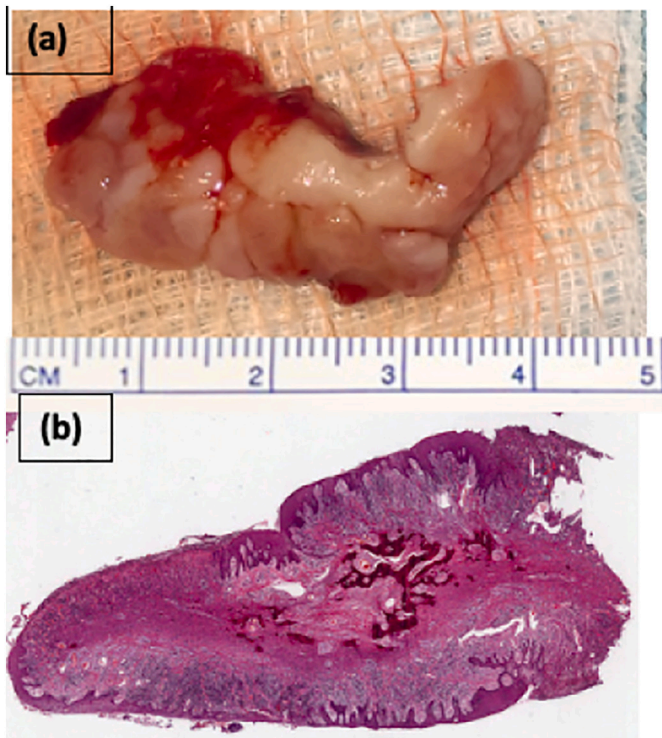
Clinical definitive diagnosis is difficult because many oral lesions share the same clinical presentation. Therefore, the differential diagnosis list includes pyogenic granuloma, peripheral fibroma, POF, and peripheral giant cell granuloma. Therefore, the diagnosis of POF is based on the clinical findings, radiographic interpretation and the histopathology report.

Solitary POF is generally encountered in the oral cavity. Only few cases have been reported in the literature with multicentric variants of POF. For instance, multicentric lesions have been reported in conditions associated with rare genetic alteration such as multiple neuromas, Gardner's syndrome, multiple neuromas, nevoid basal cell carcinoma syndrome [7].

POF can lead to extraoral abnormalities such as changes in facial



**Fig. 1.** A 25-year-old girl with peripheral ossifying fibroma shows (a) and (b) asymptomatic, mobile, pedunculate, irregular, rubbery, red soft tissue growth, arising from the gingiva between teeth 32–33, extending from the alveolar mucosa, spanning teeth 34 through 42. The lesion is covered by ulcerated mucosa on the site of occlusion. (c) (An occlusal film) demonstrating bone loss in relation with teeth 34, 33, 32, 31, 41. Also, showing dental displacement of teeth 34, 33, 32, 31, 41. Also, it shows a faint radiolucent lesion superimposed on underlying normal bone architecture extending from teeth 34–41. (d) postoperative photo shows a complete excision of the lesion.



**Fig. 2.** (a) The lesion was measuring a 4.1 cm in the longest dimension. (b) Histopathology analysis revealed high number of fibroblasts and scattered trabeculae of bone. It also showed polypoid pieces of squamous-lined tissue with areas of ulceration and underlying chronic inflammation.

proportions, lip incompetence. Intraoral findings may include teeth displacement, occlusal changes, and calculus formation. Moreover, it associated with many complications such as esthetic deformities, and psychological problem.

Therefore, POF should be excised in early stages to avoid loosening of teeth and occlusal changes. In addition, adjacent teeth should be cleaned completely including the involved PDL and periosteum to remove any local irritant and to reduce the possibility of lesion recurrence [8]; which was carried out in this patient. Periodic post-operative follow-up is required. POF has a high recurrence rate ranging from 8% to 20% [5–9].

This report emphasises the importance of the clinical evaluation and histopathological analysis in achieving the definitive diagnosis, as demonstrated in the present case, which the clinical diagnosis of the tumor-like gingival growth alone was not sufficient to confirm the final diagnosis of the lesion.

#### 4. Conclusion

POF is a reactive, benign, slowly progressing gingival growth. Evidently, POF may reach more than 4 cm in the longest dimension. Clinical definitive diagnosis followed by histopathologic confirmation of biopsy specimen is necessary. Moreover, as reported, this lesion has high recurrence rate therefore complete excision of the lesions down to the periosteum and PDL along with periodic post surgical follow-ups is highly recommended.

#### Patient perspective

The surgery has an excellent impact on the patient's life. The surgery outcomes met her expectations and improved her self-confidence.

#### Provenance and peer review

Not commissioned, externally peer-reviewed.

#### Consent

“Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request”.

#### Ethical approval

N/A.

#### Sources of funding

None.

#### Author contribution

The author was responsible for treating the patient, follow-up visits, data collection, study design, data interpretation, and writing the paper.

#### Guarantor

Dr. Hamad Nasser Albagieh.

#### Research registration

N/A.

#### Declaration of competing interest

The author declares that he has no conflicts of interest.

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None.

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