

Peripheral Odontogenic Fibroma: A Rare Case Report

Raif Alan¹, Bilge Can¹, Fahriye Kılınc²

¹ Necmettin Erbakan University, Faculty of Dentistry, Department of Periodontology, Konya, Turkey

² Necmettin Erbakan University, Faculty of Medicine, Department of Pathology, Konya, Turkey

Correspondence:

Dr. Raif ALAN

Necmettin Erbakan University, Faculty of Dentistry, Department of Periodontology, Konya, Turkey.
E-mail: drraifalan17@gmail.com

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Abstract

To present the clinical presence, histopathological features, and management of a rare peripheral odontogenic fibroma (POF) case. A 32-year-old male patient was referred to the clinic complaining of a localized gingival enlargement of the anterior maxillary region. Initial periodontal treatment was delivered and the patient was informed about proper oral hygiene. After the initial periodontal treatment, the lesion was surgically excised while preserving the marginal line. POF was diagnosed based on clinical and histopathological findings. Normal mechanical oral hygiene was established in the postoperative period. No recurrence was observed during this follow-up period, and the patient was included in the maintenance phase. POF was treated with local excision and the prognosis was excellent. Regular follow-ups are very important for such patients after surgery.

Keywords: Gingival lesion, localized gingival enlargement, odontogenic tumors, peripheral odontogenic fibroma

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Introduction

The odontogenic fibroma has been described by the World Health Organization as “a rare neoplasm characterized by varying amounts of inactive-looking odontogenic epithelium embedded in a mature, fibrous stroma”. There are two types that are differentiated based on localization, including the intraosseous or central type, and the extraosseous or peripheral type

(1). Peripheral odontogenic fibroma (POF) is the counterpart of the central odontogenic fibroma in the mucosa (2). POF occurs within a broad age range, with peak incidence in the second to fourth decades of life (3–5). The recurrence rate of POF, observed mostly in the incisor tooth area, is extremely variable. Some studies have reported a low recurrence rate of POF (4, 6, 7) while others have reported a recurrence rate between 38.9 % (8) and 50% (3).

Case Report

Clinically, POF usually presents as an asymptomatic, firm, nonulcerated, well-circumscribed swelling similar in color to the surrounding soft tissue, and exhibiting pedunculated or sessile mass properties (9). Conservative local excision is the preferred treatment method (4, 6, 10).

Due to its rarity, limited information is available about POF, with the majority of data obtained from case reports and small case series (3). This report aims to present the clinical presence, histopathological features, and management of a rare POF case.

A 32-year-old male patient presented at the clinic complaining of a localized gingival enlargement of the anterior maxillary region. Anamnesis results indicated that the patient was systemically healthy and a non-smoker.

The patient stated that the growth recurred despite surgical removal five times. Clinical examination revealed a soft tissue lesion between the right central and lateral incisor teeth, affecting the gingival margin. The lesion was tender, firm, nonulcerated, and approximately 10 x 12 x 7 mm in size (Fig. 1A). Teeth in the relevant region had no periodontal pockets, and the radiographic examination showed no pathology (Fig. 1B).



Figure 1. A. Preoperative intraoral view of the lesion. B. Preoperative periapical radiography of the relevant region.

Since the patient presented with poor oral hygiene, initial periodontal treatment was applied and the patient was informed about performing adequate oral hygiene. On the day of surgery, following local anesthesia, an excisional biopsy of the lesion was performed by gingivectomy with preservation of the marginal line. The lesion material was stored in 10% formalin for routine hematoxylin and eosin staining. Gingivoplasty was performed to create a symmetrical

postoperative gingival tissue contour. The flap was removed for bone evaluation after gingival contouring (Fig. 2). The area of the lesion was cleaned, sutured (Fig. 3), and covered with a periodontal dressing to protect the surgical site. After the procedure, the patient was prescribed with analgesics as needed and chlorhexidine mouthwash and informed about postoperative care. The postoperative course of the patient was uneventful.



Figure 2. A. Flap elevation after excisional biopsy of the lesion. B. Periapical radiography of the relevant region during surgery.



Figure 3. Suture placement.

The periodontal dressing and sutures were removed after one week. The patient was asked to brush his teeth gently with a soft toothbrush and rinse with chlorhexidine mouthwash. In the postoperative period, adequate mechanical oral hygiene was established.

The patient was monitored at four weeks, three months, and six months for recurrence. No recurrence was observed during the follow-up period (Fig. 4), and the patient was included in the maintenance phase.



Figure 4. Postoperative intraoral view of the lesion at 6th month.

Histopathological examination

Hematoxylin / Eosin sections showed a nodular lesion covered with hyperplastic stratified squamous epithelium.

Several small areas of odontogenic epithelium islets and calcification foci were observed in the fibrous stroma, which containing collagenous bundles and chronic inflammatory cells (Fig. 5)

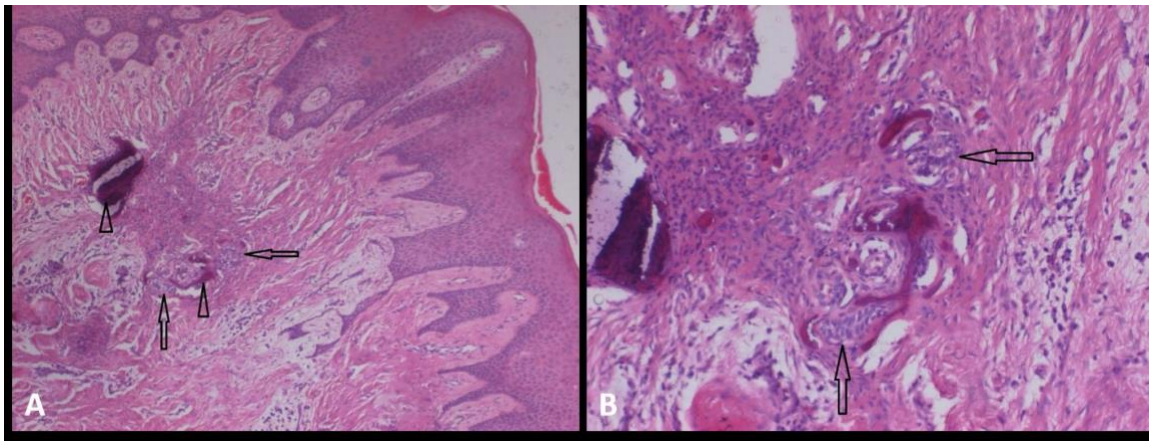


Figure 5: A. Odontogenic epithelial islets (arrows) and calcified foci (arrowheads) in the fibrocollagenous stroma under hyperplastic squamous epithelium (Hematoxylin / Eosin, original magnification x40). B. Odontogenic epithelial islets (arrows) (Hematoxylin / Eosin, original magnification x100).

Discussion

An odontogenic fibroma is a benign odontogenic tumor that can occur centrally or peripherally (4). POF is usually manifested clinically as a focal swelling (9–12). Studies on POF are controversial, and no clear opinion has been established on age, gender, and race (13).

The histogenesis of POF is not fully understood. Some studies have pointed to the periodontal ligament (PL) as the origin of the fibroblastic component, based on the formation of these lesions in the dentulous regions (6, 14). On the other hand, Ritwik and Brannon (3) identified two cases arising from edentulous crests and claimed that the PL was not a possible source. The origin sites for the epithelial component include the basal layer of the upper mucosa (6) or dental lamina residues (3, 5, 6). However, local irritants such as inadequate restorations, presence of plaque and calculus, and excessive chewing forces are possible etiologic factors for POF (10).

POF is often misdiagnosed as a pyogenic granuloma (15–17). Pyogenic granuloma (PG) is a flat or lobular mass, usually having an ulcerated surface, and a color varying from pink to purple (18). The clinical features of PG are quite similar to POF, making it difficult to distinguish one from the other. POF may be difficult to differentiate from other extensive fibrous gingival lesions (19). It has been proposed that POF, the most common peripheral odontogenic tumor, be included in the differential diagnosis of gingival lesions (17).

Since POF is a rare gingival lesion there is a general lack of information on its characteristics. In particular, the likelihood of recurrence is unclear as follow-up studies are limited (20). POF is treated with local excision and the prognosis is excellent (12). Ritwik

and Brannon (3) stated that recurrence of the lesion is correlated with insufficient surgical excision. The authors indicated that in the majority of histopathological slides they could not distinguish between lesional and normal connective tissue, making it difficult to determine whether a whole excision was performed adequately. The authors found that neither the size of the lesion nor the patient's race were associated with POF recurrence.

Conclusions

In conclusion, a POF lesion may show a clinically significant recurrence rate despite its rarity. To determine the appropriate treatment choice for the patient, pathologists and clinicians should act together (21). Regular postoperative follow-up and maintenance are very important for patients after surgery.

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