Peripheral Odontogenic Fibroma: A Case Report and Review of The Literature

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Abstract
Peripheral odontogenic fibroma (POF) is a rare odontogenic tumor, characterized by a fibrous or fibromyxomatous proliferation that contains varying amounts of odontogenic or presumed odontogenic epithelium, occasionally with the presence of dentin or cementum like bodies or other forms of calcification. Pathological examination is the only diagnostic approach for peripheral odontogenic fibroma, which can provide a basis for treatment and prognosis evaluation. Radical surgical resection is the most common treatment for this disease. This report presents a clinical case of a 35-year-old female patient with a gingival overgrowth along the left first mandibular molar, which was diagnosed as peripheral odontogenic fibroma.

Keywords: Peripheral Odontogenic Fibroma; Gingiva; Inflammatory Hyperplasia

Abbreviations: ODF: Odontogenic Fibroma; POF: Peripheral Odontogenic Fibroma; COF: Central Odontogenic Fibroma; POT: Peripheral Odontogenic Tumor

Introduction

Odontogenic fibroma (ODF) is described as “a rare odontogenic tumor, benign neoplasm of odontogenic ectomesenchymal origin” classified by the World Health Organization, characterized by relatively mature collagenous fibrous tissue with varying amount of odontogenic epithelium [1]. Odontogenic fibroma can occur in central or peripheral location. The peripheral odontogenic fibroma (POF) is considered to be the mucosal counterpart to the central odontogenic fibroma (COF) [2]. Odontogenic fibroma comprises only 0.05% in all odontogenic tumors [3]. Peripheral odontogenic tumor (POT) is rare, while peripheral odontogenic fibroma may be the only peripheral odontogenic tumor with occurrence rate more than corresponding intraosseous lesions, it being more common compared to central odontogenic fibroma by a 1.4:1 ratio [4].

Peripheral odontogenic fibroma presents a slow-growing, progressive but painless swelling, often associated with cortical expansion or tooth displacement [5]. There is a slight female predominance in literatures [6]. This disease frequently occurs in the 30-40 years of age [6]. There is no significant difference in the distribution of the upper and lower jaw. The attachment gingivias of molars or premolars are most predilection sites [7].

Case Report

A female patient aged 35 years, reported to the department of periodontology with a chief complaint of progressive swelling along the lower left back tooth for 5 months. She had slight discomfort in this area. This tooth accepted root canal therapy 1 year ago. And the patient was in good general health. The intraoral examination revealed gingival neoplasia in the buccal gingiva of the left first mandibular molar, with a size of 7*7*5 cm3, with a hard texture, red color, and a clear boundary (Figure 1). The patient had a little tenderness on palpation. The temporary sealing material presented on the occlusal and distal
surfaces of the tooth, which was partially detached with lingual gingival in growth. There was a little food impaction between the left first and second mandibular molars. The probing depth of the left first mandibular molar was 3~4mm and the tooth had no mobility. There were no obvious images of alveolar bone resorption and apical lesions on periapical film.

The surgery was conducted under local anesthesia. The tumor and tissues 1-2 mm around the lesion was completely excised. The lingual gingival enlargement was also removed. On histopathological examination, the Hematoxylin and eosin stained soft tissue section confirmed the diagnosis of peripheral odontogenic fibroma accompanied by inflammation. Besides, there were induced phenomena in some regions (Figure 2).

The patient was instructed to rinse with 0.12% chlorhexidine twice a day for a week. The patient was followed up with at 1 week, 1 month, 3, 6, 12, 18 and 24 months after surgery. At 1 month after surgery, the left first mandibular molar was restored with a porcelain crown. No recurrence was observed at 2 years post surgery (Figure 4).
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Peripheral odontogenic fibroma is the rare peripheral counterpart of central odontogenic fibroma. It is an apparently innocuous, elevated gingival lesion that has no conclusive data regarding its exact prognosis. It is generally believed that peripheral odontogenic fibroma originates from mesenchymal tissue [9]. Radical surgical resection is the most common treatment for this disease [10]. A recurrence rate of 13% after resection has been reported in the literature [11]. It has been stated that budding of the basal cell layer of the surface squamous epithelium is associated with a higher recurrence [12]. Although the epithelium appears to have diagnostic significance in the lesions, it is stable and non-neoplastic [13].

Peripheral odontogenic fibroma is often misdiagnosed as fibrous epulis and easily confused with peripheral osteofibroma. The latter is a reactive lesion, derived from the periosteum and can produce osteoid and woven bone [14]. Histological features of peripheral odontogenic fibroma is cellular fibrous tissue or fibrous and mucous tissue proliferation, containing varying amounts of odontogenic epithelium, and occasionally dentin, cementum like bodies, bone tissue or other forms of calcification [8].

Peripheral odontogenic fibroma occupies nearly 40% of peripheral odontogenic tumors [15]. Most of peripheral odontogenic tumors have similar clinical manifestations and differential diagnosis, which are similar to benign reactive lesions. However, there are little local stimulating factors for them, and they have a certain recurrence rate after local excision [16,17]. Therefore, it is suggested that peripheral odontogenic tumors should be long-term followed up.

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