



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

Jing Qiao<sup>1</sup>, Feng Liu<sup>2</sup> and Zuyan Zhang<sup>3\*</sup>

<sup>1</sup>Department of Periodontology, Peking University School and Hospital of Stomatology, China

<sup>2</sup>Department of General Dentistry, Peking University School and Hospital of Stomatology, China

<sup>3</sup>Department of Oral Radiology, Peking University School and Hospital of Stomatology, China

**Submission:** May 27, 2016; **Published:** July 05, 2016

**\*Corresponding author:** Zuyan Zhang, 10008122 Zhong Guan Cun South Avenue, Haidian District, Beijing, China, Tel: 86-10-82192325, Fax: 86-10-62173402; Email: zhangzy-bj@vip.sina.com

## 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. Peripheral odontogenic fibroma is often misdiagnosed as fibrous epulis and easily confused with peripheral osteofibroma. 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 boy with a gingival overgrowth along the left first mandibular molar, which was diagnosed as peripheral odontogenic fibroma.

**Keywords:** Peripherical 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 gingivas of molars or premolars are most predilection sites [7].

Peripheral odontogenic fibroma is 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 [8]. Pathological examination is the only diagnostic approach for peripheral odontogenic tumor, which can provide a basis for treatment and prognosis evaluation.

The purpose of this article is to report the clinical and histopathological features of a case of peripheral odontogenic fibroma in a 35-year-old female patient.

## 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 cm<sup>3</sup>, 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.



A. Buccal side.

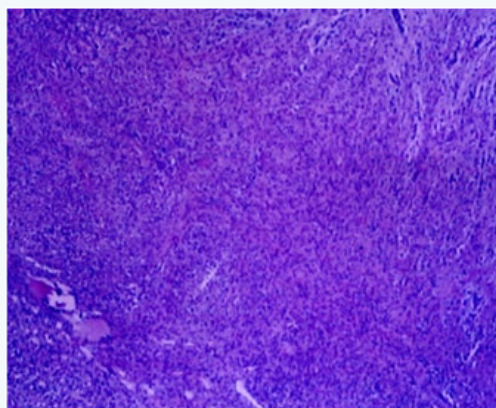


B. Lingual side.

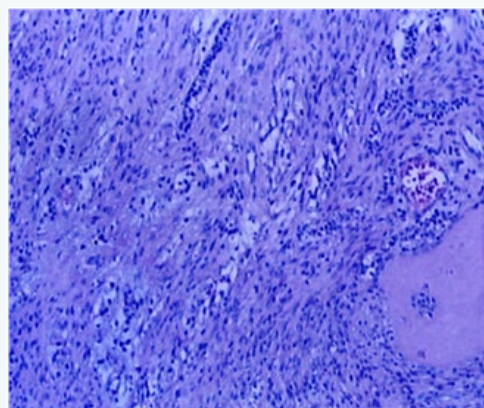
**Figure 1:** Clinical features of the gingival overgrowth.

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).



(A)



(B)

**Figure 2:** Histologic appearance (HE staining). Multiple areas of pathologic tissue consisting of cellular fibrous tissue with a large amount of odontogenic epithelium. Cementum like bodies scattered in fibrous tissue. A.  $\times 40$ ; b.  $\times 100$ .

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 (Figure 3), 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).



A. Buccal side



B. Lingual side.

**Figure 3:** 1 Week post surgery.



A. Buccal side



B. Lingual side.

Figure 4: 2 years post surgery.

## Discussion

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.

## Acknowledgement

The authors are grateful to Dr. Bingbing Li (department of Pathology & Laboratory Medicine, Peking University, School and Hospital of Stomatology), for her great help and support.

## References

- Hollowell M, Gang D, Pantanowitz L (2010) Odontogenic fibroma. *Ear Nose Throat J* 89(5): 214-215.

- de Matos FR, de Moraes M, Neto AC, Miguel MC, da Silveira EJ (2011) Central odontogenic fibroma. *Ann Diagn Pathol* 15(6): 481-484.
- Baiju CS, Rohatgi S (2011) Peripheral odontogenic fibroma: A case report and review. *J Indian Soc Periodontol* 15(3): 273-275.
- Ide F, Mishima K, Saito I, Kusama K (2008) Rare peripheral odontogenic tumors: report of 5 cases and comprehensive review of the literature. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 106(4): e22-e28.
- Kumar R, Jaiswal S, Sharma A, Anhare V, Sabir H (2015) Peripheral odontogenic fibroma: a rare gingival neoplasm with clinico-pathological differential diagnosis. *J Exp Ther Oncol* 11(1): 17-21.
- Damm DD (2014) Gingival mass. Peripheral odontogenic fibroma. *Gen Dent* 62(5): 78-79.
- Schussel JL, Gallottini MH, Braz-Silva PH (2014) Odontogenic fibroma WHO-type simulating periodontal disease: Report of a case. *J Indian Soc Periodontol* 18(1): 85-87.
- Silva CA, Passador-Santos F, Moraes Pde C, Soares AB, de Araújo VC (2013) Peripheral odontogenic fibroma: an uncommonly overlooked lesion. *J Craniofac Surg* 24(3): e216-219.
- Pippi R, Santoro M, Patini R (2016) The central odontogenic fibroma: How difficult can be making a preliminary diagnosis. *J Clin Exp Dent* 8(2): e223-e225.
- Brooks JK, Nikitakis NG (2011) Interdental papilla overgrowth. Peripheral odontogenic fibroma. *Gen Dent* 59(2): 152-154.
- Garcia BG, Caldeira PC, Johann AC, Sousa SC, Caliar MV, et al. (2013) Cellular proliferation markers in peripheral and central fibromas: a comparative study. *J Appl Oral Sci* 21(2): 106-111.
- Buchner A, Hansen L (1987) The histomorphologic spectrum of peripheral ossifying fibroma. *Oral Surg Oral Med Oral Pathol* 63(4): 452-461.
- Curran AE (2004) Peripheral odontogenic tumors. *Oral Maxillofac Surg Clin North Am* 16(3): 399-408.
- Manor Y, Mardinger O, Katz J, Taicher S, Hirshberg A (2004) Peripheral odontogenic tumours--differential diagnosis in gingival lesions. *Int J Oral Maxillofac Surg* 33(3): 268-273.
- Buchner A, Merrell PW, Carpenter WM (2006) Relative frequency of peripheral odontogenic tumors: a study of 45 cases and comparison with studies from the literature. *J Oral Pathol Med* 35(7): 385-391.
- Adebayo ET, Ajike SO, Adekeye EO (2005) A review of 318 odontogenic tumors in Kaduna, Nigeria. *J Oral Maxillofac Surg* 63(6): 811-819.
- Ladeinde AL, Ajayi OF, Ogunlewe MO, Adeyemo WL, Arotiba GT, et al. (2005) Odontogenic tumors: a review of 319 cases in a Nigerian teaching hospital. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 99(2): 191-195.