

PERIPHERAL ODONTOGENIC FIBROMA: A CLINICOPATHOLOGIC CASE REPORT

Abhimanyu A Puri ¹, Geetha Vijay ², Sukanya Rajan ³

1. Post Graduate student, Department of Periodontics, Vydehi institute of dental sciences & research center, Bangalore.
2. Professor and Head of the department, Department of Periodontics, Vydehi institute of dental sciences & research center, Bangalore.
3. Professor, Department of Periodontics, Vydehi institute of dental sciences & research center, Bangalore.

ABSTRACT:

Peripheral odontogenic fibroma is a benign, slow-growing, exophytic lesion occurring on the gingiva. It appears to be far more common than its intraosseous counterpart, central odontogenic fibroma. A case of Peripheral odontogenic fibroma with its clinicopathologic findings are documented here. A 37 year old female patient reported with a chief complaint of swelling in lower right posterior tooth region since 6 months. The lesion was excised and sent for histopathologic evaluation which revealed to be peripheral odontogenic fibroma. Peripheral odontogenic fibroma is the extraosseous variant of the central odontogenic fibroma. It can mimic a variety of reactive lesions and neoplasms and thus requires an excisional biopsy for definitive diagnosis. The lesion exhibits a significant growth potential which should warrant a close follow-up. In the current case report the lesion was excised and no recurrence of the lesion was found in one month follow up.

Key words: Peripheral odontogenic fibroma, Excisional biopsy, Central odontogenic fibroma.



INTRODUCTION:

The odontogenic fibroma is a benign neoplasm of odontogenic ectomesenchymal origin, characterized by relatively mature collagenous fibrous tissue with varying amount of odontogenic epithelium. It can occur in two variants as central or peripheral in location, the latter being more common by a 1.4:1 ratio.^[1] A slight female predilection has been reported by Daley *et al.*^[2] Age of onset varies widely with a peak in the third and fourth decades of life.

The World Health Organization (WHO) defines Peripheral odontogenic fibroma as “a benign odontogenic neoplasm of fibroblastic origin characterized by relatively mature collagenous fibrous tissue and varying amounts of odontogenic epithelium with potential to occur in either a central or an extraosseous location”. The tumors occurring in these extraosseous locations are designated as peripheral odontogenic fibroma.^[3]

The tumor appears as a firm, slow-growing and usually sessile gingival mass covered by normal appearing mucosa. Clinically, it cannot be distinguished from common fibrous gingival lesions. Encountered mainly on facial gingiva of mandible, with incisor-canine and premolar area being the most common sites, they seldom cause displacement of teeth. Rarely, multifocal or diffuse lesions have also been described.^[4]

The lesion is generally elevated and nonulcerated clinically and nonencapsulated microscopically. Histologically, connective tissue ranges from loose (almost myxomatous) to markedly cellular or to relatively acellular, which are well organized. Islands/strands of odontogenic epithelium are scattered throughout connective tissue, which may be prominent/scarce. Dysplastic dentin, amorphous ovoid cementum like calcifications and trabeculae of osteoid may also be present.^[5]

CASE DETAIL:

A 37 year old female reported to the department of Periodontics, Vydehi institute of dental sciences & research center, with a chief complaint of swelling in the lower right back tooth region since 6 months (Figure 1). Patient was apparently normal 6 years back when she first noticed swelling on the lingual aspect in relation to lower right second premolar region. The swelling was initially small in size which has gradually increased to the present size. There has been no further increase in size reported by the patient from past 6 months. The patient was not able to brush on the

lingual aspect of lower right second premolar due to the presence of enlargement. The medical, social and family histories did not reveal any significant findings. Extraoral examination also did not reveal any abnormality. On examination, a solitary gingival overgrowth was seen in relation to lingual aspect of 45 measuring about 1 x 1.5 cm, non-tender and firm in consistency. No mobility and pocket formation was seen in relation to 45. The overlying mucosa was intact and of normal color. Complete full mouth gingival and periodontal examination was done. A clinical diagnosis of chronic generalized gingivitis with mild localized periodontitis was made. Provisional diagnosis of fibrous hyperplasia, irritational fibroma & peripheral ossifying fibroma were made. Intraoral periapical radiograph (IOPA) of the involved area was taken, which did not reveal any significant findings (Figure 2). Excisional biopsy of the lesion was done under local anaesthesia. (Figure 3 & Figure 4). Periodontal pack was placed and patient was recalled after one week for pack removal and subsequent evaluation. Histopathological examination showed orthokeratinized stratified squamous epithelium with underlying fibrous connective tissue stroma. The fibrous connective tissue showed bundles of collagen fibres with presence of inactive odontogenic epithelial cells in the form of islands and strands. Ectopic collection of sebaceous gland was also seen. Deeper areas showed bundles of muscle fibres (Figure 5). Considering the clinical

& histopathological features, the diagnosis of Peripheral odontogenic fibroma was made. The patient was followed up after one month and the healing was found to be satisfactory with no tendency for recurrence (Figure 6).

DISCUSSION:

Peripheral odontogenic fibroma is an uncommon exophytic mass found on the gingiva and can clinically mimic a variety of reactive lesions and neoplasms.^[6] Peripheral odontogenic fibroma usually arises as a painless, focal swelling which can arise throughout either arch but tends to occur in the maxillary anterior & mandibular canine-premolar region. It is often the same color as the surrounding mucosa but may be inflamed and ulcerated. There is a wide age range that extends from the first to the ninth decades of life, with a slight increase in incidence in the 3rd decade. It is seen somewhat more frequently in women than in men with no increase in risk based on race or ethnicity.^[2]

The peripheral odontogenic fibroma is treated by local excision and prognosis is excellent. The differential diagnosis of the lesion includes fibrous hyperplasia, fibroma, giant cell fibroma, peripheral ossifying fibroma, peripheral odontogenic tumors, peripheral giant cell granuloma, and pyogenic granuloma. *Baden et al*^[10] had designated Peripheral odontogenic fibroma as 'odontogenic gingival epithelial hamartoma'. At one time the term peripheral ossifying fibroma and peripheral odontogenic

fibroma were used interchangeably.⁷ Peripheral odontogenic fibroma does not involve the underlying bone and only sometimes shows areas of calcification on radiograph.^[5] The lesion in this case report also did not show any involvement with the underlying bone.

Odontogenic fibroma is generally thought to be a fibroblastic neoplasm containing varying amounts of odontogenic epithelium. It is supposed to arise from the mesenchymal elements of the tooth germ, that is the dental follicle, the dental papilla or the periodontal ligament, and it is possible that it represents the terminal, mature form of a spectrum of entities ranging from the odontogenic myxoma, the myxofibroma, to the odontogenic fibroma.^[2] Recurrence of the tumor has been reported by the studies done by *Daley et al* so post-surgical follow up is mandatory.^[8] A variable recurrence rate has been reported ranging from very low to as high as 39%.^[9]

CONCLUSION:

The case report showed peripheral odontogenic fibroma in the lower right posterior region of gingiva of a 37 year old female patient which was treated by excising the lesion. The healing of surgical site was found uneventful and no recurrence occurred in a one month follow-up. The patient's oral hygiene was found to be satisfactory. As the recurrence rate of this lesion is higher,

clinicians should emphasize on patient's motivation for regular periodic

reevaluation.

REFERENCES:

1. Buchner A, Merrell PW, Carpenter WM. Relative frequency of central odontogenic tumours: A study of 1088 cases from northern California and comparison to studies from other parts of the world. *J Oral Maxillofac Surg* 2006; 64:1343-52.
2. Nicholas zachariades. Odontogenic fibroma *Int. J. Oral Maxillofac. Surg*, 1986; 15: 102-104
3. WeberA, van Heerden WFP, Ligthelm AJ, Raubenheimer EJ. Diffuse peripheral odontogenic fibroma: Report of 3 cases. *J Oral Pathol Med* 1992;21:82-4.
4. Comparison Between the Peripheral Ossifying Fibroma and Peripheral Odontogenic Fibroma. Jeffrey N. Kenney, George E. Kaugars, Louis M. Abbey, *J Oral Maxillofac Surg* 47~378-382, 1989.
5. Neville BW, DammDD, Allen CM, Bouquot JE. *Oral and maxillofacial pathology*, 3rd ed. Philadelphia: WB Saunders; 2009 p.727-9.
6. Rinaggio J, Cleveland D, Koshy R, Gallante A, Mirani N. Peripheral granular odontogenic fibroma. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 2007; 104: 676-679.
7. Rajendran R. Cysts and Tumours of Odontogenic Origin. In Rajendran R. & Sivapathasundharam (Eds.), *Shafer's Textbook of Oral Pathology*. 5th ed. Noida: Elsevier; 2006. p. 357-432.
8. Daley TD, Wysocki GP. Peripheral odontogenic fibroma. *Oral surg oral med oral pathol* 1994;78:329-36
9. Michaelides PL. Recurrent odontogenic fibroma of attached gingiva: a case report. *J Periodontol* 1992; 63: 645-647.
10. Baden E, Moskow BS, Moskow R. Odontogenic gingival epithelial hamartoma. *J Oral surg* 1968; 26:702-14.

FIGURES:



Figure 1: Gingival overgrowth in relation to 45



Figure 2: IOPA in relation to 45



Figure 3: Excisional biopsy being performed

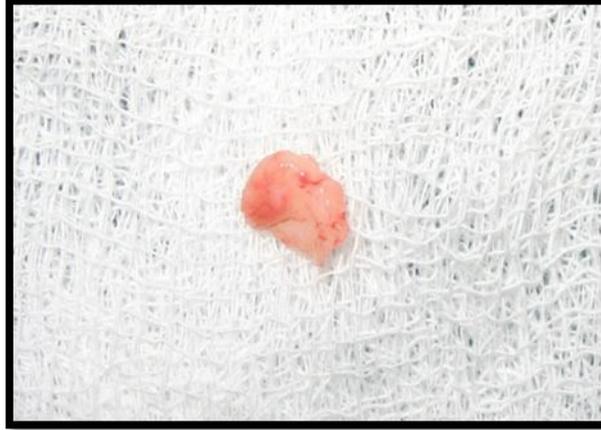


Figure 4: Excised tissue mass

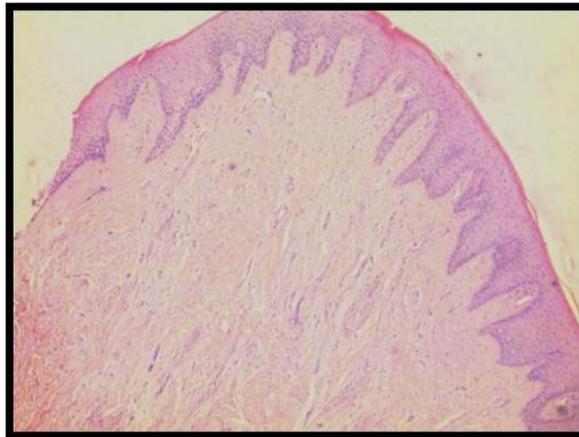


Figure 5: Photomicrograph showing nests and strands of odontogenic epithelium in a fibrocellular and vascular connective tissue stroma



Figure 6: 1 month follow up