

## Case report

### Peripheral Ossifying Fibroma - A Case Report

Mahima Dua<sup>1</sup>, Amit Dua<sup>2</sup>, Mallika Sethi Dua<sup>3</sup>

<sup>1</sup>Senior Lecturer, Department of Oral & Maxillofacial Pathology, Inderprastha Dental College, Sahibabad, Ghaziabad, <sup>2</sup>Reader Department of Prosthodontics, <sup>3</sup>Senior Lecturer Department of Periodontics I.T.S-CDSR, Muradnagar, Ghaziabad.

#### Corresponding author:

Dr. Mahima Dua,

Department of Oral Pathology,

Inderprastha Dental College,

Ghaziabad

Email: drmahima.dua@gmail.com

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**ABSTRACT:** Peripheral Ossifying Fibroma is a relatively uncommon gingival growth that is considered to be reactive in nature and appear secondary to irritation or trauma. Reported here is a case of a 22yr old male with presentation of an intraoral solitary swelling with respect to the lower right region of face which is reminiscent of a pyogenic granuloma. After the clinical and radiological examination, the corresponding surgical treatment and histopathological study were carried out to shed further light on its pathogenesis.

**Key words:** peripheral ossifying fibroma, periodontal ligament, pyogenic granuloma

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## INTRODUCTION

Peripheral ossifying fibroma is a common gingival growth usually arising from the interdental papilla. Trauma or local irritants such as dental plaque, calculus, micro-organisms, masticatory forces, ill-fitting dentures and poor quality restorations have been implicated in the etiology of peripheral ossifying fibroma.<sup>1</sup>

There are numerous histologically different types of localized reactive lesions that may occur on the gingiva including focal fibrous hyperplasia, pyogenic granuloma, peripheral giant cell granuloma (PGCG) & peripheral ossifying fibroma (POF).<sup>2,3</sup> POF is a gingival nodule composed of a cellular fibroblastic

connective tissue stroma associated with the formation of randomly dispersed foci of mineralized product.<sup>4</sup> The pathogenesis of this lesion is uncertain and is thought to arise from the periosteal or the periodontal membrane.<sup>5</sup> It has also been reported that it represents a maturation of a pre existing pyogenic granuloma or a peripheral giant cell granuloma.<sup>6</sup> POF is a relatively uncommon gingival growth that is considered to be reactive in nature and postulated to appear secondary to irritation or trauma.<sup>7</sup> Clinically, it presents as a growth of well delineated tissue, with a smooth surface, overlying mucosa is normal in color, sessile or pedunculated, hard in consistency & smaller than 1.5cm at its largest diameter. Most common site predilection is of anterior maxilla in the interdental papilla.<sup>8</sup> Here we report a case of POF in a 22yrs old male with presentation reminiscent of a pyogenic granuloma.

## CASE REPORT

A 22 year old male reported to the OPD, with the chief complaint of swelling of gums in the right lower region with respect to 31 & 32. The onset was gradual and the patient noticed the swelling 1 year ago. The swelling slowly increased in size and was asymptomatic. On examination the patient was moderately built having an

average stature and with all the vital signs within normal limits. Extra-oral examination presented a mild solitary swelling with respect to the lower right region of face. Intraorally a well-circumscribed, sessile, erythematous, nodular growth measuring approximately 1.5×0.5 cm in diameter was seen on the marginal & attached gingiva of the right mandibular central incisor & lateral incisor.



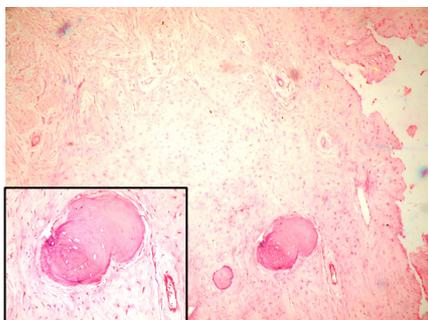
**Figure 1:** Intraoral photograph showing a swelling in the right lower region.

On palpation, the swelling was firm in consistency, smooth texture & was non-tender with diffuse margins. Radiographic findings (intraoral periapical) showed a cup-like resorption of bone b/w the right mandibular central incisor & lateral incisor. Under local anesthesia, excisional biopsy was performed with a 2mm margin of normal tissue. On gross examination, the lesion was creamish-white in color measuring 1×0.5cm in dimension & was gritty in consistency.



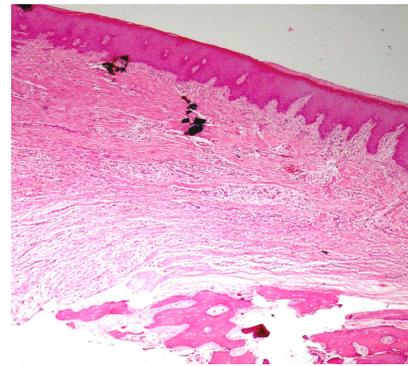
**Figure 2:** Photograph showing gross nature of the excised tissue.

Microscopic examination showed a fibrocellular connective tissue stroma covered by an overlying stratified squamous epithelium. The connective tissue shows various forms of mineralized masses of varying shapes and size. Numerous small-large masses and spherules of woven bone and cementum are seen. In close approximation to these mineralized masses is the presence of plump fibroblasts. The collagen fiber appears to be hyalinized around the large bony masses, whereas those surrounding the globules of cementum are arranged in thin strands. Towards the periphery of the section, the presence of resorbing bone is evident.



**Figure 3:** Photomicrograph showing stratified squamous epithelium overlying fibrocellular connective tissue with the

presence of mineralized masses. (H & E, 10 X)



**Figure 4:** Photomicrograph showing. (H & E,) resorbing bone with Osteocytes (inset) & cementum like masses interspersed in a highly cellular, fibrous connective tissue stroma.

## DISCUSSION

Intraoral ossifying fibromas have been described in the literature since the late 1940s.<sup>2</sup> Considerable confusion has prevailed in the nomenclature of peripheral ossifying fibroma, with various synonyms being used, such as peripheral cementifying fibroma, ossifying fibroepithelial polyp, peripheral fibroma with osteogenesis, peripheral fibroma with calcification, calcifying or ossifying fibrous epulis and calcifying fibroblastic granuloma<sup>1</sup> but the term POF was coined by Eversole and Robin.<sup>9</sup> It has been suggested that the POF represents a separate clinical entity rather than a transitional form of pyogenic granuloma, PGCG or irritational fibroma. Gardner stated that POF cellular connective tissue

is so characteristic that a histological diagnosis can be made with confidence, regardless of the presence of calcifications.<sup>2</sup> Buchner & Hansen hypothesized that early POF presents as ulcerated nodules with little calcification, allowing easy misdiagnosis as a pyogenic granuloma.<sup>2,3</sup> Regarding the pathogenesis, there are two schools of thought; some believe that POF develops from cells of periodontal ligament /Periosteum, which is accepted by most, while another group believe it to be a more mature variant of pyogenic granuloma following fibrous maturation and calcification.<sup>4</sup>

Inflammatory hyperplasia originating in the superficial PDL ligament is also considered to be a factor in the histogenesis of POF. The evidence for an PDL based origin of POF is based on several factors, including: their occurrence exclusively on the gingiva, histopathologic feature, a relationship between POF occurrence and the presence of periodontal ligament, and positive immunohistochemical expression of bone morphogenetic protein.<sup>7,8</sup> Hormonal influences may play a role, as it has higher incidence among females, increasing occurrence in the second decade and declining incidence after the third decade.<sup>10</sup>

POF may be presented as pedunculated or sessile mass. These lesions can be red to pink with areas of ulceration, and there surface may be smooth or irregular.<sup>11</sup> Some of the lesions may be misdiagnosed as pyogenic granuloma, but other peripheral odontogenic tumors may also be considered,<sup>8</sup> as pyogenic granuloma presents as a soft, friable nodule that bleeds with minimal manipulation, but tooth displacement and resorption of bone are not observed as seen in pyogenic granuloma. Even, PGCG has clinical features similar to those of POF, the latter lacks the purple or blue discoloration commonly associated with PGCG and radiographically shows flecks of calcifications.<sup>8,12</sup>

In histological terms, ossifying fibroma is more cellular and less vascular type than the pyogenic granuloma. The lesional nidus is not encapsulated but is rather well demarcated from the surrounding fibrovascular stroma. Surrounding tissues are often edematous, with neovascularity and variable numbers of chronic and acute inflammatory cells. The observed mineralized tissue observed can be classified into blended irregular bone trabeculae, lamellar trabecular bone, curved bone trabeculae and oval and/ or spheroid ossicles.<sup>1,12</sup> The recurrence rate of peripheral ossifying fibroma has been

considered high for reactive lesions. The rate of recurrence has been reported to vary from 8.9% to 20 %.<sup>10,9,6</sup> It probably occurs due to incomplete initial removal, repeated injury or persistence of local irritants. The average time interval for the first recurrence is 12 months.<sup>8</sup>

## CONCLUSION

Thus to conclude clinical diagnosis of gingival lesions and distinguishing each lesion from other lesions in the same spectrum is a challenge uninhibited. Hence a meticulous and through correlation between clinical and histopathological presentation marks the path in making an accurate diagnosis of POF.

## BIBLIOGRAPHY

1. Kumar SK, Ram S, Jorgensen MG, Shuler CF, Sedghizadeh PP: Multicentric peripheral ossifying fibroma. *Journal of Oral Sciences*, 2006; 48(4): 239-243.
2. Farquhar T, MacLellan J et al. Peripheral Ossifying Fibroma: a case report. *JCDA*.2008;74(9):809-812.
3. Keim FS, Kreibich MS et al. Peripheral ossifying fibroma of the Maxilla: Case Report. *Intl. Arch Otorbinolaryngol*.2008;12(2):295-299.
4. Neville BW et al. *Oral and Maxillofacial Pathology*, Elsevier 2008, p. 451-52
5. Kendrick F, Waggoner WF managing a peripheral ossifying fibroma. *J Dent Child* 1996;63:135-138.
6. Bhaskar NS, Jacoway JR. peripheral fibroma and peripheral fibroma with calcification. Report of 376 cases. *JADA* 1966;73:1312-20.
7. Sousa SCOM et al. Proliferative activity in peripheral ossifying fibroma and ossifying fibroma. *J Oral Pathol Med* 1998; 27:64-7.
8. UM Das, U Azher et al. Peripheral ossifying fibroma. *J Indian Soc Pedod Prevent Dent*.2009;1(27):49-51.
9. Eversole LR, Rovin S reactive lesions of the gingival. *J Oral Path* 1972;1(1):30-8.  
Kenney JN, Kaugars GE, Abbey LM. Comparison between the peripheral ossifying fibroma and peripheral odontogenic fibroma. *Journal of Oral & Maxillofacial Surgery*, 1989;47(4):378-382.
11. Buchner A, Hansen LS. The histomorphologic spectrum of peripheral ossifying fibroma. *Oral surg oral med oral path* 1987;63:452-461.
12. Mangham C, Wiliam BK et al. Juvenile ossifying fibroma. An analysis of eight cases and a comparison with other fibro-osseous lesions. *J Oral Pathol Med*;29:13-18.

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