

## Peripheral Ossifying Fibroma - A Case Report

### Abstract

Peripheral ossifying fibroma (POF) is one of the several common reactive hyperplastic lesions of the gingiva. It arises from the gingival corium, periosteum, and periodontal ligament. Commonly used synonyms for POF include calcifying fibroblastic granuloma, peripheral fibroma with calcification, peripheral cementifying fibroma, and calcifying or ossifying fibrous epulis. This article presents a case of peripheral ossifying fibroma in a 55-year-old female along with the clinical, histopathologic, and radiographic features and treatment details.

### Key Words

peripheral ossifying fibroma, gingival enlargement, fibroma

### Introduction

The peripheral ossifying fibroma(POF) is a common gingival lesion manifesting as a localized gingival enlargement typically measuring less than 1.5 cm at its greatest dimensions. It varies from pale pink to cherry red in color, can be either pedunculated or sessile and is typically located in the interdental papilla region.<sup>1,2,3</sup> It is more common in the young women. The majority of lesions occur during a person's second decade, with a declining incidence in later years.<sup>4</sup> The lesion may cause a separation of the adjacent teeth, and occasionally minimal bone resorption can be seen beneath the lesion.<sup>5</sup>

### Case Report

A 55 years old female patient reported to the department of oral medicine and radiology with an exophytic growth in the oral cavity which has been gradually increasing since the past three months. The swelling started as a small nodule. The patient did not give any significant medical history. Intraoral examination revealed poor oral hygiene and neglected dental condition. A well-demarcated, non-tender, firm, focal, sessile nodular growth arising from the gingiva of the maxillary left central and lateral incisors was seen. The oval-shaped mass was 1.5 cm x 2 cm in size, with a reddish pink color, smooth surface, and distinct edges. (Figure 1) Bleeding on probing was noted. An intraoral periapical radiograph and orthopantomogram of the maxillary central incisors showed no underlying



Figure 1. Intra-oral view showing a sessile growth arising from the gingiva of maxillary left central and lateral incisors.



Figure 2. Orthopantomogram showing no underlying bone involvement. An impacted mesiodens is seen.

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bone involvement. Incidentally, an impacted mesiodens could be seen on the radiographs. (Figure 2) Clinically, differential diagnoses for the growth were pyogenic granuloma, peripheral odontogenic fibroma, fibroma, and peripheral giant cell granuloma. A

provisional diagnosis of pyogenic granuloma was made for the gingival growth.

Under local anesthesia, the lesion was completely excised. (Figure 3) The excisional biopsy was submitted for histological analysis. The histopathological examination of the lesion revealed the prominent area of highly cellular fibrous connective tissue showing collagen fibers and proliferating plump fibroblasts, and focal areas of round to ovoid calcifications. The covering stratified squamous epithelium was parakeratinized with focal areas of acanthosis. The underlying connective tissue was infiltrated with inflammatory cells and showed few dilated blood vessels engorged with red blood cells. (Figure 4 and 5) The diagnosis was POF according to both clinical and histopathological patterns. A five-month postsurgical follow-up showed no evidence of recurrence.

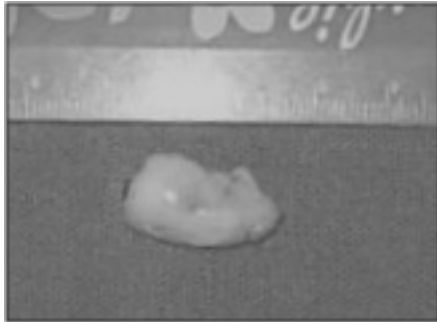


Figure 3. Excised tissue.

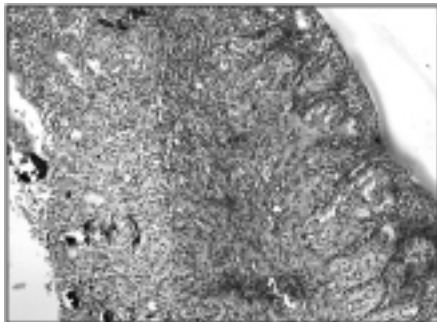


Figure 4. Histopathological picture showing fibrous connective tissue covered with stratified squamous epithelium.

## Discussion

The POF occurs almost exclusively on the free margin of the gingiva and usually involves the interdental papilla. The fact that the lesion emerges from the periodontal ligament and is not seen in edentulous areas suggests its origin to be the connective tissue elements of the periodontal ligament.<sup>6</sup> Dental calculus, plaque, dental appliances, ill-fitting crowns, and rough restorations are

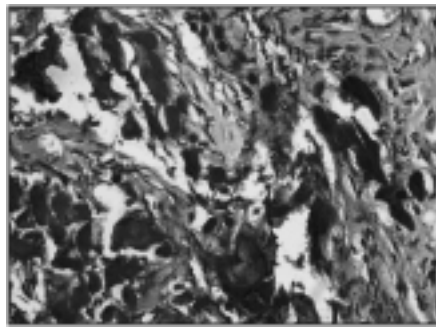


Figure 5. Round to ovoid cementum like calcifications seen. H-E staining X40.

considered to be the irritants causing its growth.<sup>7</sup> Factors such as a high female predilection and a peak occurrence in the second decade of life also suggest of hormonal influences.<sup>8</sup> Sixty percent of the lesions occur in the maxilla, with more than 50% occurring in the incisor-canine region.<sup>9,10</sup> The associated teeth are usually not mobile.

Roentgenographically, in a vast majority of cases there is no apparent underlying bone involvement visible. On rare occasions, there appears to be superficial erosion of bone.<sup>11</sup> Radiopaque foci of calcifications have been reported to be scattered in the central area of the lesion, but not all lesions demonstrate radiographic calcifications.<sup>12</sup> A minor adjustment of exposure settings (decrease of kilovolt peak; increase of milliamperage) is recommended for showing the tiny radiopaque foci.

The clinical features are not sufficient for the diagnosis of POF because there are other conditions that may have similar clinical appearances and clinical courses such as pyogenic granuloma and peripheral giant cell granuloma. Therefore biopsy and histopathological examination is required for definitive diagnosis.

In the present case the findings except for age correlated the general characteristics and there was no underlying bone involvement. The patient had poor oral hygiene, which probably contributed with etiopathogeny of the POF.

Considerable confusion has prevailed in the nomenclature of POF with various synonyms being used such as peripheral cementifying fibroma, ossifying fibro-epithelial polyp, peripheral fibroma with osteogenesis, peripheral fibroma with cementogenesis, peripheral fibroma with calcification, calcifying or ossifying fibrous epulis and calcifying fibroblastic granuloma.<sup>13</sup>

Histopathologically, the lesions show excessive proliferation of mature fibrous

connective tissue. Chronic irritation of the periosteal and the periodontal membrane causes metaplasia of the connective tissue and resultant initiation of formation of bone or dystrophic calcification.<sup>12</sup> There are three types of mineralized tissue in the POF: dystrophic calcification, bone (woven or lamellar), and cementum-like material. The dystrophic calcification is most prevalent in ulcerated lesions.<sup>4</sup> Ossification or calcification may not be evident in all cases, particularly in the earlier stages of lesional growth.

It is suggested that there is no absolute histological distinction between bone and cementum, and as the so-called cementum-like globules of calcification are seen in fibro-osseous lesions in all membrane bones, it is unrealistic to separate the ossifying and cementifying lesions and it is speculated that the fibro-osseous lesions might represent stages in the evolution of a single disease process passing through the stages of fibrous dysplasia to ossifying fibroma to cementoid lesions.<sup>14</sup>

After the elimination of the local etiological factors like plaque, calculus, ill fitting dentures and poor quality restorations, local surgical excision of POF is the preferred treatment. Excision should include the periodontal ligament and the periosteum at the base of the lesion in order to reduce the chances of recurrence. However, total excision of the lesion in the maxillary anterior region can result in an unsightly gingival defect unless appropriate efforts are taken to repair the periosteal defects.<sup>1</sup> Various different surgical techniques like lateral sliding flap of full thickness or partial thickness, subepithelial connective tissue graft, or coronally positioned flap may be used to manage this defect and minimize patient esthetic concerns. Recurrence rates of 8-20% have been reported.<sup>14,15</sup> The recovery of our patient was uneventful and is on regular follow-up.

## Conclusion

In conclusion, a slowly growing soft-tissue mass in the anterior oral cavity should raise a suspicion of a reactive gingival lesion such as POF. It is a benign fibro-osseous lesion with significant growth potential. Histopathological examination is essential for accurate diagnosis. Once diagnosed, POF should be treated by total excision to prevent recurrence.

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When possible, quantify findings and present them with appropriate indicators of measurement error or uncertainty (such as confidence intervals). Report losses to observation (such as dropouts from a clinical trial). Put a general description of methods in the Methods section. When data are summarized in the Results section, specify the statistical methods used to analyse them. Avoid non-technical uses of technical terms in statistics, such as 'random' (which implies a randomising device), 'normal', 'significant', 'correlations', and 'sample'. Define statistical terms, abbreviations, and most symbols. Use upper italics ( $P < 0.05$ ).

### Results

Present the results in logical sequence in the text, tables, and illustrations. Do not repeat in the text all the data in the tables or illustrations; emphasise or summarise only important observations.

### Discussion

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### Acknowledgments

As an appendix to the text, one or more statements should specify

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### References

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