

## Peripheral Ossifying Fibroma: A Clinical Report

Shailja Naik<sup>1</sup>, Shivlal Vishnoi<sup>2</sup>, Sarath Chandran<sup>3</sup>, Jaimini Dave<sup>4</sup>

Department of Periodontology, Manubhai Patel Dental College/ Maharaja Krishkumarsinhji Bhavnagar University, India

### Abstract

**Background :** The oral mucosa is constantly affected by various internal and external stimuli, thus it may exhibit a range of developmental disorders, irritation, inflammation, and neoplastic conditions.

Localized reactive lesions include focal fibrous hyperplasia, pyogenic granuloma, peripheral giant cell granuloma and peripheral ossifying fibroma. These lesions develop as a result of trauma, microorganism, plaque, calculus, restorations and dental appliances.

The purpose of this case report is to present a case of a 68 year old male patient with peripheral ossifying fibroma in the anterior maxilla and briefly review the current literature on this condition and stress the significance of discussion of a reasonable differential diagnosis, treatment and outcomes of the same.

**Key Word:** Peripheral ossifying fibroma, fibrous growth.

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### I. Introduction

Peripheral ossifying fibroma is generally unprecedented, solitary, non-neoplastic lesion, predominantly seen in relation to gingiva. It may be pedunculated or broad based; usually smooth surfaced and varies from pale pink to cherry red in color. It is believed to comprise about 9.6% of all gingival growths and to arise from the gingival corium, periosteum, and the periodontal membrane.<sup>1,2</sup> It has also been reported that it represents a maturation of a pre-existing pyogenic granuloma or a peripheral giant cell granuloma.<sup>3</sup> The rate of recurrence for POF is about 8-20%, so a close post-operative follow-up is required after surgical excision of the lesion.<sup>4</sup>

### II. Clinical Report

A 68 year old male patient reported with the chief complaint of swelling of gums in upper front tooth region since 3 months. Patient was relatively asymptomatic before 3 months, and then he noticed small swelling in upper front tooth region which gradually increased in size with time to attain present size. Patient did not experience any pain in the same region. There was no associated history of bleeding or pain. His medical history was non-significant and no history of any medication at that time.

Patient has similar kind of history of gum enlargement in upper right back tooth region before 20 years for which he underwent removal of the enlarged mass & no recurrence was noted for the same till now.

Intraoral examination revealed an approximately 12mm × 8mm × 4mm pedunculated, non-tender, firm, pale pinkish growth present on the interdental gingiva in relation to the maxillary anterior region [Figures 1 and 2]. The lesion was extending from mesial of right central incisor to the distal of left central incisor and up to the level of the cervical surface. Radiographically, there was slight angular bone loss in relation to mesial of right central incisor to the distal of left central incisor [Figure 3].



Figure 1: Clinical presentation of the lesion, front view.



**Figure 2:** Clinical presentation of the lesion occlusal view



**Figure 3:** Intraoral periapical radiograph of 11, 21 showing slight angular bone loss.

The differential diagnosis included irritation fibroma, pyogenic granuloma and POF. Based on the clinical and radiographic findings, the provisional diagnosis of irritation fibroma was made.

The periodontal treatment plan included patient education and motivation for oral hygiene instructions, scaling and root planing, reevaluation and surgical excision of the lesion under local anesthesia. Scaling and root planing was performed for elimination of local etiological factors. After 1 week of scaling and root planing, a reevaluation and surgical excision down to the periosteum were performed. [Figure 4] and periodontal dressing was placed [Figure 5]. Patient was given post-operative instructions and was prescribed with analgesic (tablet Paracetamol-500 mg tds every 4-6 hr as needed for pain) and antimicrobial rinse (0.2% chlorhexidine gluconate twice-a-day for 1 week). He was recalled, after 1 week for follow-up. The excised tissue [Figure 6] was placed in 10% neutral buffered formalin and sent for the histopathologic examination.



**Figure 4:** Immediately after excision, front view.



**Figure 5:**Periodontal dressing placed, front view.



**Figure 6:**Excised lesion

Biopsy specimen microscopically consisted of hyperplastic parakeratinized stratified squamous epithelium with thin, long and anastomosing rete ridges and fibrous connective tissue containing several irregularly shaped trabeculae of bone, droplets of basophilic cementum-like material and numerous plump fibroblasts [Figure 7]. Histopathologic diagnosis was POF.



**Figure 7:**Histopathologic image of the lesion.

At 1 week post-operative visit, patient presented for periodontal dressing removal and follow-up examination. Recovery was uneventful with a satisfactory healing [Figure 8]. Patient is on regular follow-up at 6 months post-operative without any recurrence [Figure 9].



**Figure 8:** Post-operative 1 week showing uneventful recovery, front view.



**Figure 9:** Post-operative 6 months with no recurrence of the lesion, front view.

### III. Discussion

The widely recognized clinical aspect of the fibrous epulis is the growth of well-delimited tissue, usually of a smooth surface texture, with normal colored mucosa, sessile or pedunculated base, of hard or firm consistence, usually located on the anterior maxillary interdental papillary region.<sup>5</sup>The reasons for considering periodontal ligament origin for POF include exclusive occurrence of POF in the gingiva (interdental papilla), the proximity of gingiva to the periodontal ligament and the presence of oxytalan fibers within the mineralized matrix of some lesions.<sup>3</sup>Excessive proliferation of mature fibrous connective tissue is a reaction or response to gingival injury, gingival irritation, subgingival calculus or a foreign body in the gingival sulcus. Chronic irritation of the periosteal and periodontal membrane causes metaplasia of the connective tissue and resultant initiation of formation of bone or dystrophic calcification.<sup>4</sup>

Almost two-third of all cases occur in females<sup>1</sup>, with a predilection for the anterior maxilla.<sup>1,6</sup>Hormonal influences may play a role due to which we see higher incidence of POF among females, increasing occurrence in the 2<sup>nd</sup> decade and declining occurrence after the 3<sup>rd</sup> decade.<sup>1</sup> The size of the POF ranges from 0.4 to 4.0 cm<sup>7</sup> and whites (71%) are more frequently affected than blacks (36%).<sup>8</sup>

Histologically, when bone and cementum-like tissues are observed, the lesions have been alluded to as cemento ossifying fibroma.<sup>9</sup>The term “cemento ossifying” has been referred to as outdated and scientifically inaccurate.<sup>10</sup>Moreover, on H and E staining it is difficult to distinguish histologically between cementum and bone. Mineralized products in the form of trabeculae of woven and/or lamellar bone, cementum like material and dystrophic calcification are taken note.

Radiographic features of POF may vary. 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>7</sup> Underlying bone involvement is typically not noticeable on a radiograph. In uncommon occasions, superficial erosion of bone is noted.<sup>7</sup>

A confirmatory diagnosis of POF is made by histopathologic evaluation of biopsy specimens. The following features are usually observed during the microscopic examination: (1) Intact or ulcerated stratified squamous surface epithelium; (2) benign fibrous connective tissue with varying numbers of fibroblasts; (3) sparse to profuse endothelial proliferation; (4) mineralized material consisting of mature, lamellar or woven osteoid, cementum-like material or dystrophic calcifications; and (5) acute or chronic inflammatory cells in lesions.<sup>3,7</sup> Moreover, histopathologically, lamellar or woven osteoid pattern predominates; hence, the term “POF” is considered more appropriate.

Different treatment modalities include surgical excision by scalpel; laser or radial/electrosurgery.<sup>11</sup> The carbon dioxide laser can also effectively excise the lesion and has been shown to allow diagnostic microscopic evaluation with a minimal distortion of the biopsy sample.<sup>12</sup>

The advantages of laser excision are minimal post-surgical pain and no need for suturing the biopsy site. This precise tissue destruction can also result in partial or incomplete removal of the base of the pathologic lesion, which can lead to recurrence.<sup>13</sup> In a case report recurrence of the lesion was seen within 1 week of its excision. The recurrent overgrowth was again excised, thoroughly curetted, and histopathologically confirmed as a PG. No signs of recurrence were seen at the 6-month follow-up.<sup>14</sup>

Thus, surgical excision including the involved periodontal ligament and periosteum is the preferred treatment. We also performed the same surgical excision of the lesion.<sup>6</sup>

#### IV. Conclusion

POF is a benign, slowly progressive lesion, with limited growth. Clinically difficult to diagnose, so histopathologic confirmation is mandatory. Complete surgical excision down to the periosteum is the preferred treatment and as the recurrence rate is high,<sup>9</sup> and a close post-operative follow-up is required.<sup>2</sup>

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