

## MODIFIED FLAP SURGERY TO PREVENT RECURRENCE OF PERIPHERAL CEMENTO OSSIFYING FIBROMA – REPORT OF A CASE WITH LITERATURE UPDATE

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### Abstract

Peripheral cemento ossifying fibroma (PCOF) is a reactive focal gingival overgrowth derived histogenetically from cells of the periodontal ligament, usually develops in response to local irritants. PCOF accounts for 3.1% of all oral tumors and for 9.6% of gingival lesions. Recurrence rate is high 7-20% of reactive lesions. A case report of a 36 years old female patient, presenting with recurrent PCOF in the anterior maxillary region with emphasis on surgical management to prevent recurrence. With simple removal the recurrence rate is greater than 20%. The recurrence rate of PCOF was found to be high as 16-20% after 1 to 1.5 years of excision however our reported case does not show recurrence after a follow period of 1 ½ years. Recurrence rate is less when lesion of PCOF was treated by surgical excision down to periosteum, curettage of underlying and adjacent tissues and root planning of adjacent teeth by doing a modified flap procedure.

**Key-words:** Gingival Overgrowth, Peripheral Cemento- ossifying Fibroma, Surgical management.

### Introduction

PCOF most commonly affects the upper maxillary region with or without the pathological migration. They manifest as pedunculated or sessile nodular mass which is non-neoplastic that usually originate in inter dental papilla. Etiopathogenesis is often unknown. Recurrence rate is 7-20% for reactive lesions. The recurrence has been attributed due to incomplete initial removal, repeated injury, and/or the persistence of the local irritants. Present case report discuss the role of modified flap surgery to prevent the recurrence of PCOF.

### Case Report

A 36 year old female patient referred from department of oral & maxillofacial surgery for management of recurrent swelling in the upper anterior palatal region between 11 and 21. On eliciting clinical history, the present swelling started as a small nodular growth, progressively increased in size with spacing and difficulty in eating due to traumatic injury while biting. [Figure 1]



Figure 1: Pre-operative View - A] Labial View; B] Palatal View

Surgical history reveals, previous surgical excision of soft tissue was done before 1 year and histopathological report revealed as peripheral cemento ossifying fibroma – PCOF.

#### On Clinical Examination

The lesion measured 10 X 15 mm pedunculated growth which was firm in consistency present in the palatal region between 11 and 21 and the growth extends into the

interdental papilla of the labial aspect, Traumatic indentation with erythematous surface was present on the superficial aspect due to occlusal interference from the lower incisors.

#### Radiographic Examination

IOPA of 12,11,21,22 region reveals increased inter-dental space between 11 and 21. A radiolucent area of 5 X 5 mm in between 11 and 21 with mild crestal bone loss. Occlusal radiograph also further reveals the presence of radiolucent region between 11 and 21. [Figure 2]

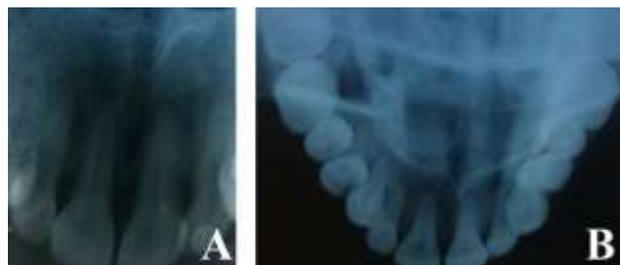


Figure 2: Radiographical Images of the lesion – A] IOPA view in respect to 11 and 12 tooth region; B] Maxillary Occlusal View

#### Surgical Management

Due to the short history of recurrence and previous surgical history of excision of soft tissue alone was done, Surgical decision was made to elevate a full thickness mucoperiosteal flap using sulcular incision in the labial aspect and internal bevel incision around the inter proximal papilla of 11 and 21 region with BP blade no 15.

Both side Flaps were elevated, palatally flap was elevated slightly apically to see the extension of the stalk of the pedunculated mass. Excision of the stalk at the base to the periosteum was done using BP blade no 11, complete debridement of the surgical site on the labial and palatal aspect was done using surgical curettes.

After curettage, fenestration measuring 1 mm in diameter was seen on the labial aspect. On careful evaluation it was communicating to the palatal wall, communication was tracked using a periodontal probe. Upon complete debridement of defect on the palatal aspect, defect measured around 15 X 5mm. [Figure 3]



Figure 3: Surgical Procedures – A) Initial incision; B) Excised tissue

Margins of the defect on the labial and palatal aspect was contoured using a bone file. Root planning of the adjacent tooth was done. Copious irrigation was done using normal isotonic saline solution with antiseptic betadine. Inner aspect of the flaps were trimmed, positioned at the desired level and approximated by simple interrupted sutures using 3-0 braided silk sutures. [Figure 4]



Figure 4: Immediate post operative view.

Periodontal pack was placed and patient was put on antibiotics and analgesics for 5 days. Reviewed immediately after 2 days and also after a week's time for suture removal. Uneventful healing was observed. Then patient was followed intermittently for a period of 1.5 years. [Figure 5]



Figure 5: A) Follow up after one week; B) Follow up after one year.

#### Histopathological Findings

Section shows mucosa lined by Para-keratinized stratified squamous epithelium with an area of ulceration, granulation tissue and an underlying ill circumscribed lesion composed of plump spindle cells<sup>1,2</sup> arranged as sheets with moderate cytoplasm, oval nucleus, prominent nucleoli.<sup>3</sup> Foci of cementoid round bodies and spicules of bone are seen

scattered admist spindle cells.<sup>4</sup> There are interspersed plasma cells and neutrophils. There is no atypia or increase in mitosis.[Figure 6]

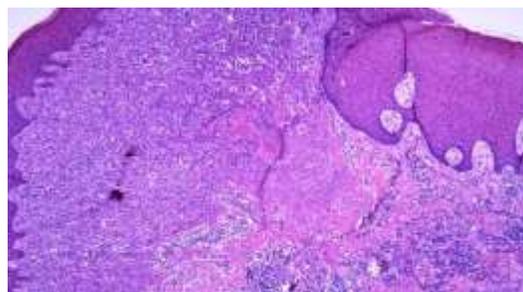


Figure 6: Histopathological view

#### **Discussion**

According to systematic and literature reviews, PCOF are reported to appear predominantly affecting the upper maxillary region with or without pathological migration and does not affect the adjacent teeth, this was in accordance with our present case.<sup>5</sup> Hormonal influences may play a role too, as the lesions have shown a female predilection, with increasing occurrence in the 2<sup>nd</sup> or 3<sup>rd</sup> decade of age.<sup>6</sup> Clinically PCOF manifest as pedunculated or sessile nodular mass which is non-neoplastic usually originate in inter dental papilla.<sup>7,8</sup> The color is similar to that of mucosa unless the lesion is irritated. Most lesions are < 2mm in diameter, although lesions larger than 10cm are occasionally reported. In present case it is measured about 10 × 15 mm.<sup>6,9,10</sup>

Etiopathogenesis of peripheral ossifying fibroma is uncertain, role of the cells of periodontal ligament has been suggested. The reasons for considering periodontal ligament origin is the proximity of the lesion to the interdental gingiva, periodontal ligament and h/p citations have reported the presence of oxytalan fibers within the mineralized matrix of this lesions.<sup>6,11</sup> Excessive proliferation of mature fibrous connective tissue is a response to gingival irritation due to presence of subgingival calculus, or overhanging restorative margins beyond the gingival sulcus resulting in chronic irritation of the periosteal and periodontal membrane causes metaplasia of the connective tissue and initiation of formation of bone or dystrophic calcification as reported in our present case<sup>12</sup>

Eversole and Rovin stated the similar sex and site predilection of pyogenic granuloma.<sup>6</sup> Gardner stated that peripheral ossifying fibroma, cellular connective tissue is so characteristic that a histologic diagnosis can be made with confidence, regardless of the presence or absence of calcification.<sup>13</sup> Buchner and Hansen hypothesized that early POF presents as ulcerated nodules with little calcification, allowing easy misdiagnosis as a Pyogenic Granuloma, which is an aggregated submucosal proliferation of primitive oval and bipolar mesenchymal cells is the hallmark of peripheral ossifying fibroma.<sup>14</sup>

The recurrence rate of the PCOF has been considered high 7-20% Walters *et al*, Kenney *et al* for reactive lesions. The

recurrence has been attributed to incomplete initial removal, repeated injury, and/or the persistence of the local irritants.<sup>15</sup>

Conventional treatment consists of conservative surgical excision and scaling of adjacent teeth, but complete excision till attachment of the stalk to the periosteum, aggressive curettage of the underlying and adjacent tissues and root planning of the adjacent teeth is needed. Because recurrence is more common when the basis of the lesion remains.<sup>1</sup> Hence, surgical plan was opted to raise a full thickness mucoperiosteal flap and aggressive curettage and root planning was done to remove the etiological factors and to prevent recurrence.<sup>16</sup>

The average time interval for the first recurrence is 12 months Das and Azhar, 2009. Hence regular follow up is required. Our reported cases does not show recurrence after a follow period of 1 ½ years.<sup>6</sup> Patient was under regular maintenance therapy.

### Conclusion

Peripheral cemento-ossifying fibroma is a non-neoplastic enlargement of the gingiva that is classified as a reactive hyperplastic inflammatory lesion. It is possible to misdiagnose PCOF from the other reactive lesions arising from the gingiva. Therefore, histopathological examination is essential for an accurate diagnosis and for proper management. Since the recurrence rate is high, complete removal by this procedure may prevent recurrence.

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