

## Peripheral Cemento-Ossifying Fibroma in Its Posterior Maxillary Location

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### Abstract

### Case Report

Because of many irritating factors present in the oral cavity (biofilm, plaque, dental restorations...), the gingiva can be the site of localized growths that are considered to be reactive rather than neoplastic nature. Among these non-neoplastic gingival proliferations, the Peripheral Cemento-Ossifying Fibroma (PCOF) has the particularity of associating different mineralized tissues (bone, cementum and dystrophic calcifications) in a fibrous stroma. PCOF affects frequently women during the second and third decades of life and is usually located in the maxilla anterior to the molars. Here, we report an unusual case of PCOF in 64-year old women, who reported to the department of Medicines and Surgery Oral of the Dentistry Clinic of Monastir, Tunisia. Clinical, radiographic and histological characteristics are discussed and recommendations regarding differential diagnosis, treatment and follow-up are provided.

**Keywords:** Reactive gingival growth, PCOF, gingivectomy, Histology.

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## INTRODUCTION

Peripheral cemento-ossifying fibroma (PCOF) is a reactive lesion that is usually seen in the interdental papilla. It has been described with various synonyms and is believed to arise from the periodontal ligament comprising about 9% of all gingival growths[1].

Considerable confusion has existed over the nomenclature of this lesion and many names have been used to describe its variable histopathologic features[2].

One of these terms is PCOF which contains variable amounts of mineralized product resembling bone (ossifying fibroma), cementum (cementifying fibroma) or both[3].

The PCOF is a rare osteogenic neoplasm that ordinarily presents as an epulis-like growth[3]. It is a slow-growing benign tumor which may lead to pathologic migration and other periodontal problems, so it should be excised as soon as possible[4].

Clinically, PCOF appears as a nodular mass, either pedunculated or sessile[4], usually ulcerated and erythematous or exhibit a color similar to that of

surrounding gingiva[5]. Most lesions are less than 2cm in size, although larger ones occasionally occur[6].

The aim of this article is to report clinical case of PCOF which was diagnosed at the department of Medicine and Oral Surgery of the Dentistry Clinic of Monastir, Tunisia.

## CASE REPORT

A 64-year old female patient presented at the department of Medicines and Surgery Oral of the Dentistry Clinic of Monastir, with the chief complaint of a left maxillary gingival swelling localized on the extraction site of the second molar. Medical history was insignificant and the patient was from low socio-economic class.

### Clinical examination

Extra-oral examination yielded no abnormal findings on inspection and palpation. Intra-oral examination revealed a gingival overgrowth in relation to the extraction site of the second molar, pedunculated, with color same as that of adjacent gingiva. Surface was smooth with few areas of ulceration and presenting the impression of the occlusal surface of the opposing tooth.

The lesion was abnormally large about 2, 5 cm mesiodistally and 1, 5 cm buccopalatally and had a firm consistency [Fig.1, a-b].

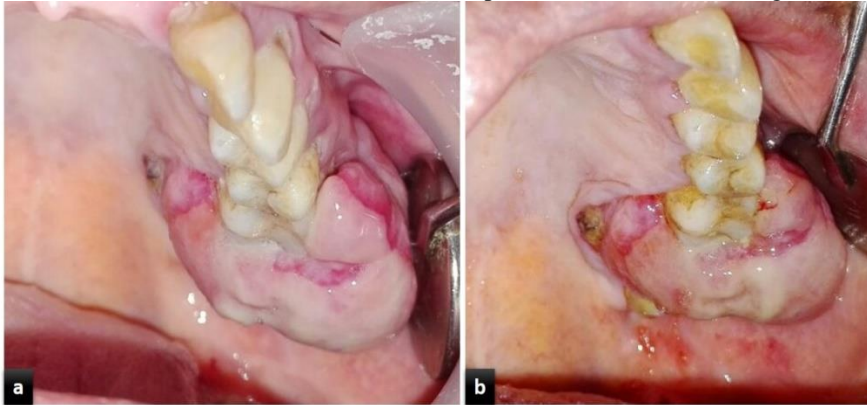


Fig-1 a et b: Photographs showing intra-oral swelling in the left molar region

The lesion was painless and occasionally bled on its own or when traumatized with tooth brush and its present state was interfering with occlusion.

### Radiographic examination

A cone beam computed tomography was obtained [fig.2], showing a radio-opaque calcific mass in the upper left second molar region with filling of the ipsilateral maxillary sinus.

The multiplanar reconstructions images in axial, coronal and sagittal planes were used to evaluate the extent as well as the size of the image pre-operatively.

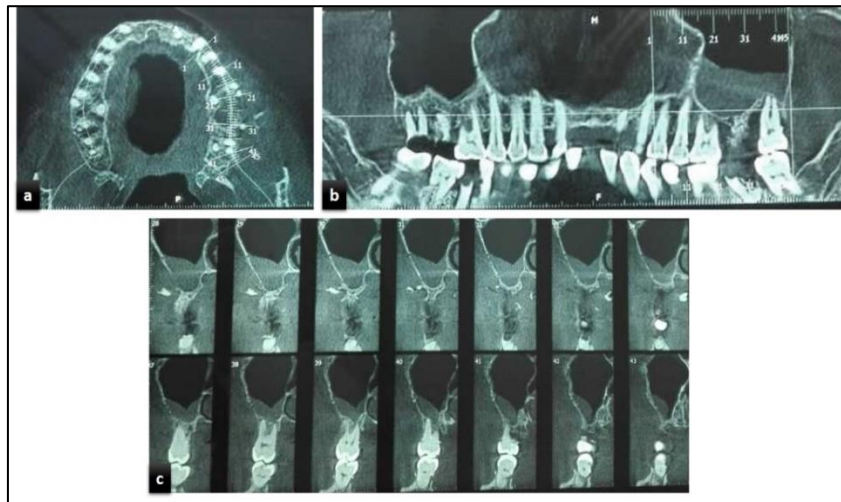


Fig-2, a-b-c: maxillary cone beam (a) axial slice (b) CBCT panoramic (c) multiple cross sectional

### Diagnosis

Clinically, the differential diagnosis included:

- pyogenic granuloma,
- fibrous hyperplasia,
- peripheral ossifying fibroma,
- peripheral giant cell granuloma and
- PCOF +++

### Treatment

The patient was then subjected to excisional biopsy under local anesthesia, followed by curettage of the area and scaling of the involved teeth.

While making the gingivectomy, care was taken to preserve as much attached gingiva as possible apical to the lesion.

The tissue excised was sent for histopathological examination [fig.3].

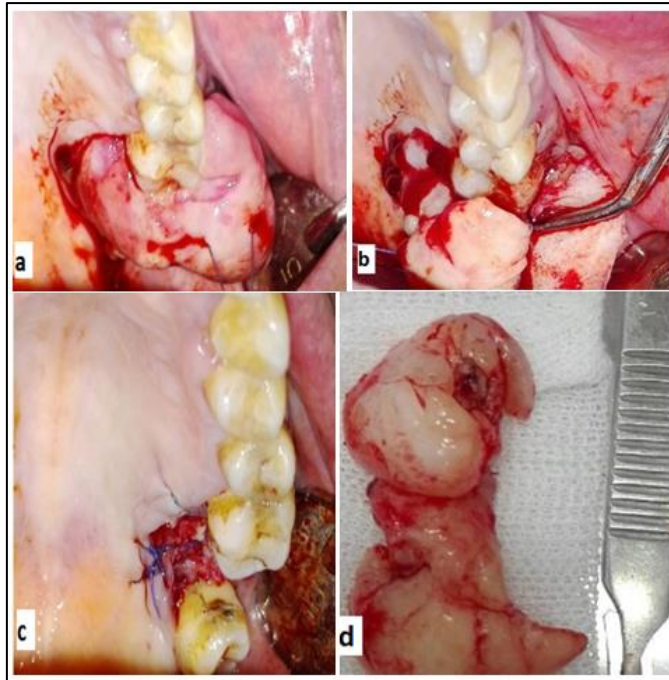


Fig-3, a-b-c: Resection of the lesion with surgical margins / (d): Excised specimen

**Microscopic examination**

Histopathologically, the lesion shows parakeratinized epithelium, dense fibrous connective tissue stroma which comprised of fibroblastes.

The mineralization may consist of bone, cementum-like material and dystrophic calcifications, confirming the diagnosis of PCOF [fig.5].

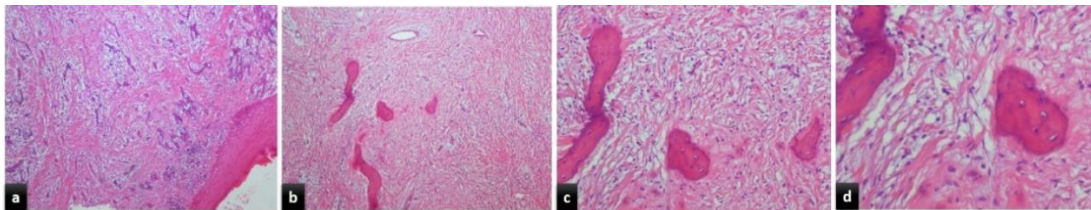


Fig-4: (a, b, c, d): Histopathological picture of the lesion

**Follow-up**



Fig-5: Post-operative intra-oral view at two weeks showing normal healing of the area. A hygiene motivation was introduced

The patient was recalled every third month for maintenance therapy and to check for possible recurrence.

**DISCUSSION**

The benign fibro-osseous lesions of the gingiva with or without calcifications have been documented in the literature under a various

nomenclature like epulis, peripheral ossifying fibroma, peripheral cementifying fibroma, calcifying fibroblastic granuloma and PCOF[2,7].

Most of these lesions have a similar clinical features that is a sessile or pedunculated gingival nodule arising from the inter dental papilla. The term peripheral ossifying fibroma was coined by Eversole and Rovin[8].

Although the etiopathogenesis of PCOF is uncertain, an origin from cells of the periodontal ligament has been suggested [9]. Anyway, the lesion is thought to arise from the cells of the periodontal ligament due to trauma or chronic irritational factors such as plaque or ill-fitting or poor quality dentures [10, 11]. In the present case the etiology could be plaque and calculus.

Almost, two-third of all cases occurs in females. It may occur at any age but a peak incidence is seen in the second and third decade. Approximately, 60% of the PCOFs occur in the maxilla, and they occur more often in the anterior than in the posterior area with 55-60% presenting in the incisor-cuspid region [2, 10, 12]

In the present case, the patient was a 62-year-old female with the lesion seen in the maxillary molar region. Clinically, the PCOF is a reactive gingival overgrowth located on the inter dental papilla. This nodule may be pedunculated or sessile, usually < 2cm in size but can occur larger dimensions, pink to red in color and surface is often ulcerated[8].

The consistency is fibrous or hard depending on the importance of mineralized tissues. Generally is an isolated lesion, but a case of multicentric PCOF has been reported in the littérature. The radiographic examination showed generally no signs of involvement of the alveolar ridge, visualization of calcifications depend on the degree of maturations of the mineralized tissue.

Histopathologically, the lesion shows loose connective tissue covered with squamous epithelium locally ulcerated. In some areas the tumor is rich in cement and bone masses. There are two types of ossifying fibroma: the central and peripheral type (table 1). Differences are summarized in the table below:

**Table-1 : the difference between POF and COF[6, 8]**

Peripheral	Central
<ul style="list-style-type: none"> <li>Classified under benign connective tissue lesions and may be due to irritating factors present in the oral cavity (reactive).</li> <li>Common lesion occurring only on gingiva.</li> <li>Occurs solely on the soft tissue covering the tooth and bearing areas of the jaw.</li> </ul>	<ul style="list-style-type: none"> <li>Classified under fibro-osseous lesion and as osteogenic tumor (neoplasm).</li> <li>Common lesions in long bones but rare in skull and jaw bones.</li> <li>Arises from the endosteum or the periodontal ligament adjacent to the root apex and causes expansion of medullary cavity.</li> </ul>

The reported gingival mass has been confirmed as PCOF after histopathologic examination. The preferred treatment is surgical, consisting of resection of the lesion as well as curettage of its osseous floor and scaling of adjacent teeth, as was performed in this case [2].

Prognosis is excellent and recurrence rate of PCOF is probably due to incomplete removal of the lesion, repeated injury or persistence of local irritants [13].

## CONCLUSION

PCOF is a reactive lesion, often localized on the gingiva. It is a slowly progressive lesion generally with limited growth. Since the diagnosis of PCOF based only on clinical features is very difficult, radiographs and histopathological examination are essential for accurate diagnosis.

Treatment consists of surgical excision including periodontal ligament periosteum and scaling of adjacent teeth. Close post-operative follow-up every 6 months is required because of the growth potential of incompletely removed lesions, as well as 8% to 20% recurrence rate [7, 14].

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