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Peripheral ossifying fibroma on the mandible: report of atypical presentation case

Fibroma ossificante periférico na mandíbula: relato de caso atípico

Vinicius R. Gomes¹; Giulia Myrna Marques²; Eveline Turatti³; Cibele G. de-Albuquerque²; Roberta B. Cavalcante³; Saulo Ellery Santos³

1. Hospital Batista Memorial, Fortaleza, Ceará, Brazil. 2. Associação Brasileira de Odontologia, Fortaleza, Ceará, Brazil. 3. Universidade de Fortaleza, Fortaleza, Ceará, Brazil.

ABSTRACT

Peripheral ossifying fibroma (POF) is a benign lesion, nodular, firm on palpation; the base is sessile or pedunculated; similar in color to the mucosa and epithelium; it may be preserved or ulcerated. It is prevalent in female and exclusively affects the gingiva. It is usually associated with irritating factors such as caries, dental plaque, among others. The objective of the present study is to report the case of a 27-years-old female patient, presenting a lesion in the mandible, complaining of an increased volume. Surgical excision was the treatment of choice. The patient is 24 months postoperatively with no signs of relapse.

Key words: fibroma ossifying; mandible; gingival hyperplasia.

RESUMO

O fibroma ossificante periférico (FOP) é uma lesão benigna, nodular, firme à palpação, de base séssil ou pediculada, com coloração semelhante à mucosa e ao epitélio; pode estar íntegro ou ulcerado. Prevalece no gênero feminino e acomete exclusivamente a gengiva. Associa-se a fatores irritantes, como cárie, cálculo dentário, entre outros. O objetivo do presente estudo é relatar o caso de uma paciente de 27 anos de idade, que apresentou lesão em mandíbula, queixando-se de aumento de volume. A excisão cirúrgica foi o tratamento de escolha. A paciente encontra-se com 24 meses de pós-operatório, sem sinais de recidiva.

Unitermos: fibroma ossificante; mandíbula; hiperplasia gengival.

RESUMEN

El fibroma osificante periférico es una lesión benigna, nodular, firme a la palpación, de base séssil o pediculada, de color similar a la mucosa y al epitelio; puede estar intacto o ulcerado. Se observa más en mujeres y acomete solamente la encía. La lesión se asocia a factores irritantes, como caries, cálculo dental, entre otros. El objetivo del presente estudio es reportar el caso de una paciente de 27 años de edad, que ha presentado lesión en la mandíbula, quejando-se de aumento de volumen. La escisión quirúrgica ha sido el tratamiento de elección. La paciente encuentra se con 24 meses de postoperatorio, sin señales de recidiva.

Palabras clave: fibroma osificante; mandíbula; hiperplasia gingival.

INTRODUCTION

Peripheral ossifying fibroma (POF) is a benign lesion usually found at the interdental papilla, with a slight preference for the maxilla and the female gender; it occurs between the first and second decades of life. It is characterized as a nodular mass with sessile or pedunculated base, presents slow growth and present pink-red color⁽¹⁾.

Local trauma and irritation are the main developmental etiologies of this pathology. The definitive diagnosis is based on histological examination, with identification of cellular connective tissue and presence of focal bone or other calcifications. The radiographic appearance of POF may range from an entirely radiolucent lesion to the presence of calcified foci dispersed in the central area of the lesion with a thin radiopaque halo⁽²⁾.

Most cases, the lesion are approximately 2 cm in diameter. However, there are reports in the literature of POF with larger volume, which may displace teeth; they receive the nomenclature of “gigantiform”. The histological pattern of this lesion is defined by the presence of fibroblasts, preserved or ulcerated stratified squamous epithelium and mineralized tissue, which may consist of cementum, bone or dystrophic calcifications. Such mineralized tissues may also be presented together⁽³⁾.

Some synonyms are mentioned in the literature, such as: calcifying fibroma, calcifying fibroblastic granuloma, peripheral cemento-ossifying fibroma, and ossifying fibrous epulis. Currently, the terminology most commonly used is POF or peripheral giant cell granuloma, which are indistinguishable from each other⁽²⁾.

Lesions such as pyogenic granuloma, fibrous hyperplasia, giant cell fibroma, and peripheral giant cell lesion bear great similarity to POF due to the need of irritating agents for its emergence to occur; therefore, there is a need for a differential diagnosis.

The treatment of choice consist in total enucleation of the lesion together with the periodontal ligament involved and the removal of possible causative agents⁽⁴⁾. There are reports of relapses, but their risk is reduced if excision is performed under the periosteum⁽⁵⁾.

The present study aims to report a rare case of mandibular gigantiform POF in a young patient and discuss the clinical, radiographic and histological findings addressed in the literature.

CASE REPORT

A. G. A., female patient, 27-years-old, Afro-Caucasian, attended the dental service complaining of increased volume on the lingual

aspect of the right mandible, close to teeth 44 and 45. In the intraoral physical examination, a nodular lesion of approximately 3 cm in its greatest extent, pedunculated base, pale pink in color, similar to the adjacent mucosa was observed (**Figure 1**).



FIGURE 1 – Initial clinical examination showing the fibroma nodular lesion

The panoramic radiographic examination revealed the absence of teeth 46 and 47, as well as a suggestive image of caries in the distal aspect of tooth 45. In the occlusal radiography, a radiopaque halo was found by the lingual aspect of the right lower premolars (**Figure 2**).

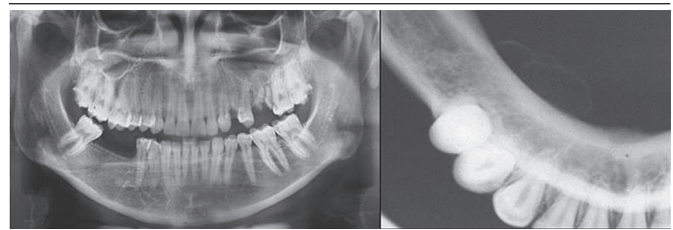


FIGURE 2 – Panoramic radiograph with no evidence of radiopaque areas. Occlusal radiograph showing radiopaque halo in the premolar region

The diagnostic hypotheses were POF, pyogenic granuloma and fibrous hyperplasia. Incisional biopsy of the lesion was performed to confirm the condition. On the histopathological examination, we obtained the diagnosis of POF (**Figure 3**).

Ten days after the biopsy procedure, the patient returned to the service to complete the treatment, which consisted of surgical excision, followed by superficial osteotomy of the region of lingual side, where the lesion pedicle was located (it is believed to be the lesion originating tissue) (**Figure 4**).

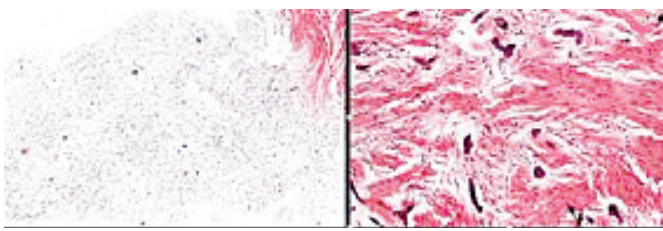


FIGURE 3 – Histopathological examination showing a mucosa covered by the parakeratinized stratified squamous epithelium, dense connective tissue with zones of proliferation of spindle and oval cells amid deposition of mineralized trabeculae (10x magnification)

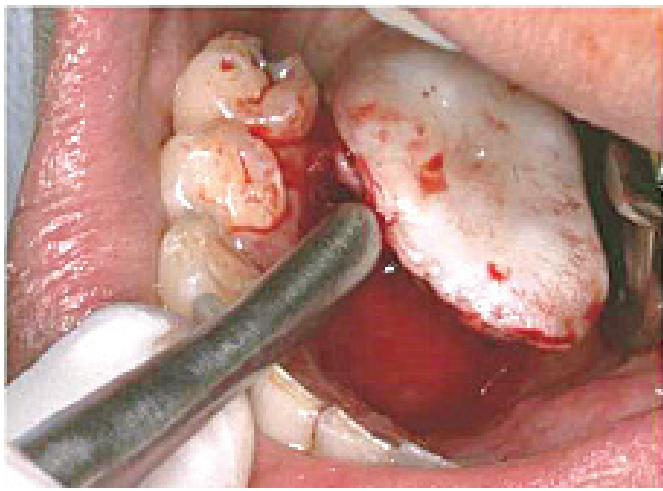


FIGURE 4 – Intraoral image showing the lesion

The patient returned to the dental service after two months, with the area fully healed (**Figure 5**).



FIGURE 5 – Postoperative (two months)

DISCUSSION

The pathology under study is one of the most common gingival lesions. The highest prevalence rate is between the first and second decades of life, although there is a rare case in a 60-year-old female patient⁽⁶⁾. POF has a predilection for females; which corroborates the findings of our case. However, there are reports diagnosed as POF in a 77-year-old male melanoderma patient⁽⁷⁾.

For decades, the POF has undergone some changes in the nomenclature, making it confusing, but synonyms can still be found in the literature, such as peripheral ossifying fibroma, peripheral calcifying fibroma, calcifying fibroblastic granuloma, peripheral cemento-ossifying fibroma, ossifying fibrous epulis and peripheral odontogenic fibroma⁽⁵⁾. In the present study, the pathology was presented as POF, since we consider the most used and widespread nomenclature in the literature.

The etiology of peripheral ossifying fibroma is uncertain, although there are reports of origin from periodontal ligament cells. This condition arises as a response to long-lasting chronic stimuli. This can occur when gingival tissue reacts in response to local irritants, such as biofilm, subgingival calculus, misplaced teeth, over-contoured restorations, inadequate dentures, debris from root, foreign bodies into the gingival sulcus, and injuries caused by orthodontic treatments⁽¹⁾. The patient under study had a carious lesion on the distal surface of tooth 45, which led us to believe that the development of the lesion may have occurred due to involvement of the periodontal ligament.

POF presents radiopaque areas interposed with a radiolucent soft tissue halo in its radiographic characteristics⁽⁸⁾. A case of POF with radiographic features that showed normal underlying bone structure was published; the lesion was present extraperiosteal⁽⁹⁾. The presented POF showed as radiographic characteristic an exophytic radiopaque halo by the lingual surface of the right lower premolars. At intraoral examination, a nodular mass firm on palpation was observed, approximately 3 cm in its greater diameter, with a pedunculated base, with a pale pink color, similar to the adjacent mucosa. Thus, an average POF size of approximately 1.3 cm may be considered⁽⁹⁾.

POF cell tissue is so characteristic that the correct histological diagnosis is allowed, regardless of the presence or absence of calcification⁽⁴⁾. Therefore, the case diagnosis hypothesis was based on clinical and radiographic characteristics, which showed a radiolucent image in the posterior region of the mandible.

The treatment modality chosen by our team was surgical excision, followed by osteotomy in the mandibular lingual region,

where the pedicle was – the lesion originating tissue. Second intention healing occurred. Even though excision surgery is the treatment of choice, the recurrence rate can be as high as 20%, however POF shows clinically benign behavior. On the other hand, there are cases in the literature that used the diode laser to enucleate the lesion, stating it as more advantageous because it provides a better visualization in the surgical field, faster healing, less postoperative pain, and short recovery, as well as a more satisfactory patient adherence⁽¹⁰⁾. However, high cost is its main disadvantage⁽⁶⁾.

From a survey on 27 POF patients, 30.4% (8.2 patients) relapsed⁽⁹⁾.

After the physical, radiographic and histopathological examination, due to the patient's complaint about increased volume in the lingual surface, region, it was concluded that the

present case was an atypical case of POF. Adopting the standard proposed in the literature, the treatment of choice was total removal of the lesion and the periosteum involved.

FINAL CONSIDERATIONS

In the case reported, after clinical, radiographic and histopathological examinations, the lesion in which the patient complained of swelling in the lingual region was an atypical case of POF. Adopting the standard proposed in the literature, the treatment of choice was total removal of the lesion and the periosteum involved. The patient has been in postoperative follow-up for 24 months without any signs of recurrence.

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CORRESPONDING AUTHOR

Vinicius Rodrigues Gomes  0000-0001-8095-9710
e-mail: viniciustoc17@hotmail.com



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