# Large peripheral ossifying fibroma mimicking a malignant neoplasm

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• Conflicts of interest: none declared.

#### ABSTRACT

**Objective:** the aim of the present paper is to report a large peripheral ossifying fibroma (POF) clinically mimicking a malignant neoplasm. **Case report:** a 35 yearold female was referred for evaluation of a  $6,0 \times 4,0$  cm reddish partially ulcerated and bleeding exophytic swelling situated in the upper left gingiva and alveolar mucosa, lasting 3 months. Panoramic and occlusal radiographs showed no alterations and computed tomograph scans showed the presence of calcified foci inside the lesion. Clinical diagnosis was peripheral ossifying fibroma and bone-producing neoplasms, including osteosarcoma. An incisional biopsy under local anesthesia was performed and the 5  $\mu$ m HE-stained sections revealed a homogeneous proliferation of spindle cells associated with areas of calcified tissue and covered by partially-ulcerated surface epithelium. Conservative complete surgical removal of the lesion was performed and analysis of the surgical specimen confirmed the histological features from the initial biopsy and the diagnosis of peripheral ossifying fibroma. Clinical follow-up showed the area totally repaired and no evidence of local recurrence. **Conclusion:** malignant neoplasms can be eventually included in the differential diagnosis of oral reactive inflammatory conditions and histological analysis is essential for proper diagnosis and management.

Keywords: Peripheral ossifying fibroma; Oral; Reactive; Lesion; Malignant; Neoplasm; Osteosarcoma.

## Introduction

Peripheral ossifying fibroma (POF) is a reactive lesion that presents clinically as a painless slightly reddish sessile or pedunculated mass in the gingiva or alveolar mucosa.<sup>1-3</sup> Its origin has been associated with local irritation, such as the presence of biofilm and/ or calculus, unsatisfactory dental fillings and local trauma.<sup>1</sup> Some particular cases can produce teeth dislocation and interdental alveolar bone resorption.<sup>4-6</sup> Variable foci of mineralized material can be observed inside the lesions in conventional periapical radiographs. POF can represent up to 20% of all reactive hyperplastic gingival growths of the gingiva.<sup>2,7,8</sup>

Most POF show an indolent behavior and measure less than 2.0 cm in its largest diameter.<sup>1,3</sup> Few POF present as larger lesions with a rapid onset and, in these specific cases, diagnosis can be challenging because malignant neoplasms can be eventually considered as differential diagnosis.<sup>4,6,9</sup> The aim of the present paper is to report a large POF clinically mimicking a malignant neoplasm.

### **Case Report**

A 35-year-old female was referred to the Stomatology clinic, Estácio de Sá University, for evaluation of a painful hemorrhagic palatal lesion lasting 3 months. Medical history revealed hypotension. Intraoral examination revealed a 6,0 x 4,0 cm ulcerated exophytic fibrous ill-defined growth with an irregular and slightly reddish surface, situated in the upper left posterior gingiva, alveolar and palatal mucosa (Figure 1). Panoramic and occlusal radiographs showed no alterations in the area (Figure 2A). Computed tomograph scans showed the presence of several radiopaque foci inside the lesion (Figure 2B). Clinical diagnosis included POF and osteossarcoma. An incisional biopsy was performed under local anesthesia and the HE-stained sections from the surgical specimen showed a proliferation of spindled fusiform cells and several foci of calcification, compatible with the diagnosis of POF. Conservative surgical removal of the lesion under local anesthesia was performed and histological analysis of the final specimen confirmed the diagnosis of POF (Figure 3). One month after surgery, clinical aspect was a normal appearing mucosa in the area and no recurrence was observed (Figure 4).



Figure 1. Large POF localized in the upper left posterior gingival and palatal mucosa



**Figure 2**. A. Occlusal radiograph showing no apparent calcified foci inside the lesion. B. Computed tomograph scan in an axial view showing calcified material inside the lesion



**Figure 3.** A. Surgical specimen showing a whitish fibrous appearance. B. HE-stained section showing a proliferation of spindle cells and several foci of calcification (HE, 100x)



Figure 4. Clinical aspect of the gingival and palatal mucosa one month after surgery

## Discussion

POF shows predilection for females in their second to fourth decades of life and both mandible and maxilla can be affected.<sup>1-3,8</sup> Most POF measures less than 2.0 in size and patients usually report that the lesion has been present for long periods with few associated symptoms.<sup>2,5</sup> The present case showed a large POF associated with pain and bleeding lasting 3 months in a 35-year-old female. Clinical presentation was quite different from what is expected for POF and, consequently, differential diagnosis was wide. Before radiographs and computed tomograph scans were obtained clinical diagnosis of the present case included a reactive lesion or a lymphoma. After image exams were evaluated osteosarcoma instead of a lymphoma was considered in differential diagnosis. It is interesting to notice that, even in a large lesion as the one reported in the present case, conventional radiographs did not show any calcification foci. Computed tomograph scans were essential to highlight the calcifications inside the lesion, as previously reported.10

The presence of calcified material helps in excluding almost all benign and malignant soft tissue tumors from differential diagnosis of POF. Ossifying fibromyxoid tumor is an exception and should be included in differential diagnosis of POF.<sup>11</sup> These tumors, although extremely rare in the oral cavity, usually present a painless slow growth, similarly to POF.

Biopsy and careful histological analysis of the surgical specimen is essential for correct diagnosis of POF and the great majority of cases pose no difficulties for the oral pathologists. Nevertheless, osteosarcomas, especially the fibroblastic subtype, should be always ruled out.

Large POF are sometimes called "giant" or "gigantiform" POF and some individual cases can cause destruction of the adjacent bone structures and formation of large areas of calcified material inside the lesions.<sup>4-6,9,12</sup> When the diagnosis of POF is confirmed in large lesions, conservative surgical removal is indicated and no recurrences are expected.<sup>4,5</sup>

## Conclusion

Malignant neoplasms can eventually be included in the differential diagnosis of reactive processes such as POF. Careful clinical, imaginological and histological analysis is essential for proper diagnosis and management of these selected cases.

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#### References

1. Verma E, Chakki AB, Nagaral SC, Ganji KK. Peripheral cemento-ossifying fibroma: case series literature review. Case Rep. Dent. 2013;2013:930870.

2. Buchner A, Shnaiderman-Shapiro A, Vered M. Relative frequency of localized reactive hyperplastic lesions of the gingiva: a retrospective study of 1675 cases from Israel. J. Oral Pathol. Med. 2010;39(8):631-8.

3. Mergoni G, Meleti M, Magnolo S, Giovannacci I, Corcione L, Vescovi P. Peripheral ossifying fibroma: a clinicopathologic study of 27 cases and review of the literature with emphasis on histomorphologic features. J. Indian Soc. Periodontol. 2015;19(1):83-7.

4. Childers ELB, Morton I, Fryer CE, Shokrani B. Giant peripheral ossifying fibroma: a case report and clinicopathologic review of 10 cases from the literature. Head Neck Pathol. 2013;7(4):356-60.

5. Poon CK, Kwan PC, Chao SY. Giant peripheral ossifying fibroma of the maxilla: report of a case. J. Oral Maxillofac. Surg. 1995;53(6):695-8.

6. Sacks HG, Amrani S, Anderson K. "Gigantiform" peripheral ossifying fibroma: report of a case. J. Oral. Maxillofac. Surg. 2012;70(11):2610-3. 7. De Matos FR, Benevenuto TG, Nonaka CF, Pinto LP, De Souza LB. Retrospective analysis of the histopathologic features of 288 cases of reactional lesions in gingiva and alveolar ridge. Appl. Immunohistochem. Mol. Morphol. 2014;22(7):505-10.

8. Zhang W, Chen Y, Na Z, Geng N, Bao D. Reactive gingival lesions: a retrospective study of 2.439 cases. Quintessence Int. 2007;38(2):103-10.

9. John RR, Kandasamy S, Achuthan N. Unusually large-sized peripheral ossifying fibroma. Ann. Maxillofac. Surg. 2016;6(2):300-3.

10. Moon WJ, Choi SY, Chung EC, Kwon KH, Chae SW. Peripheral ossifying fibroma in the oral cavity: CT and MR findings. Dentomaxillofac. Radiol. 2007;36(3):180-2.

11. Nonaka CFW, Pacheco DFS, Nunes RPA, Freitas RA, Miguel MCC. Ossifying fibromyxoid tumor in the mandibular gingiva: case report and review of the literature. J. Periodontol. 2009;80(4):687-92.

12. Manuel S, Kumar SLK, Nair BJ. A rare massive exophytic gingival growth. Clin. Pract. 2012;2(2):e38.

#### Mini Curriculum and Author's Contribution

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