A clinical case of peripheral ameloblastoma

Carolina Cavaliéri Gomes[1*]
Bruna Gonçalves Garcia[1*]
Ricardo Santiago Gomez[2*]
João Batista de Freitas[3*]
Ricardo Alves Mesquita[2*]
[1]*DDS. Undergraduate student*
[2]*PhD. Professor*
[3]*MS. Professor*
**Department of Oral Surgery, Oral Medicine and Oral Pathology; School of Dentistry, Federal University of Minas Gerais, Belo Horizonte, Brazil.*

Abstract
The peripheral ameloblastoma (PA) is a rare, benign, extraosseous odontogenic soft tissue tumour that is confined to the gingiva or alveolar mucosa. The PA presents the same histological characteristics of intraosseous ameloblastoma, although it is less aggressive than this classical subtype. We report a clinical case of PA of the alveolar mucosa in the right posterior maxilla, highlighting the importance of histological examination to the diagnosis.

Key Words:
peripheral ameloblastoma, odontogenic tumour, gingival lesions

Received for publication: March 28, 2007
Accepted: May 10, 2007

Correspondence to:
Ricardo Alves Mesquita
Universidade Federal de Minas Gerais - Faculdade de Odontologia
Av. Antônio Carlos, 6627, Pampulha
Belo Horizonte, Minas Gerais, Brazil
CEP: 31270-901
Fax: +55 31 3499-2472
E-mail: ramesquita@ufmg.br

Introduction

The peripheral ameloblastoma (PA) is a rare, benign, extraosseous odontogenic soft tissue tumour that was first truly reported in the literature by Stanley and Krogh in 1959[1]. The clinical appearance of the PA may vary, but most of time it presents clinically as a slow-growing, firm, painless mass with a sessile or pedunculated base with a smooth surface and a normal mucosa color. Although it is usually confined to the gingiva or alveolar mucosa it may cause a depression of the underlying bone or exhibit a "cupping" effect due to the pressure resorption[2-6]. We presented an additional clinical case of PA that occurred in the right posterior alveolar mucosa of the maxilla.

Clinical Case

A 79-year-old woman presented to the Stomatology Clinic of the School of Dentistry, Federal University of Minas Gerais (Belo Horizonte, Brazil) reporting a painless swelling on the gingiva. The patient could not tell when she noted the lesion. She was edentulous and did not wear dental prosthesis. Intraoral exam revealed a nodule covered by normal mucosa with a smooth surface and firm consistency located in the right posterior alveolar mucosa of the maxilla measuring approximately 6x4x4mm. Periapical radiograph examination displayed bone erosion with cupping effect (Figure 1A). With the hypothesis of soft tissue tumours or peripheral odontogenic tumors, an excisional biopsy was performed. The specimen was fixed in 10% formalin buffer and was sent to the Oral Pathology Service.

The microscopical findings were nests and cords of odontogenic epithelial cells showing ameloblast-like peripheral cells with polarized nuclei and central cells reticulum estrellate features. These nests and cords were distributed in a fibrous stroma and they seemed to fuse with the keratinized stratified squamous epithelium that covered the lesion. The histological surgical margin of the excised lesion was disease-free (Figures 1B and C). The diagnosis was peripheral ameloblastoma. The patient is in follow-up for nine months without signs of recurrence (Figure 1D).

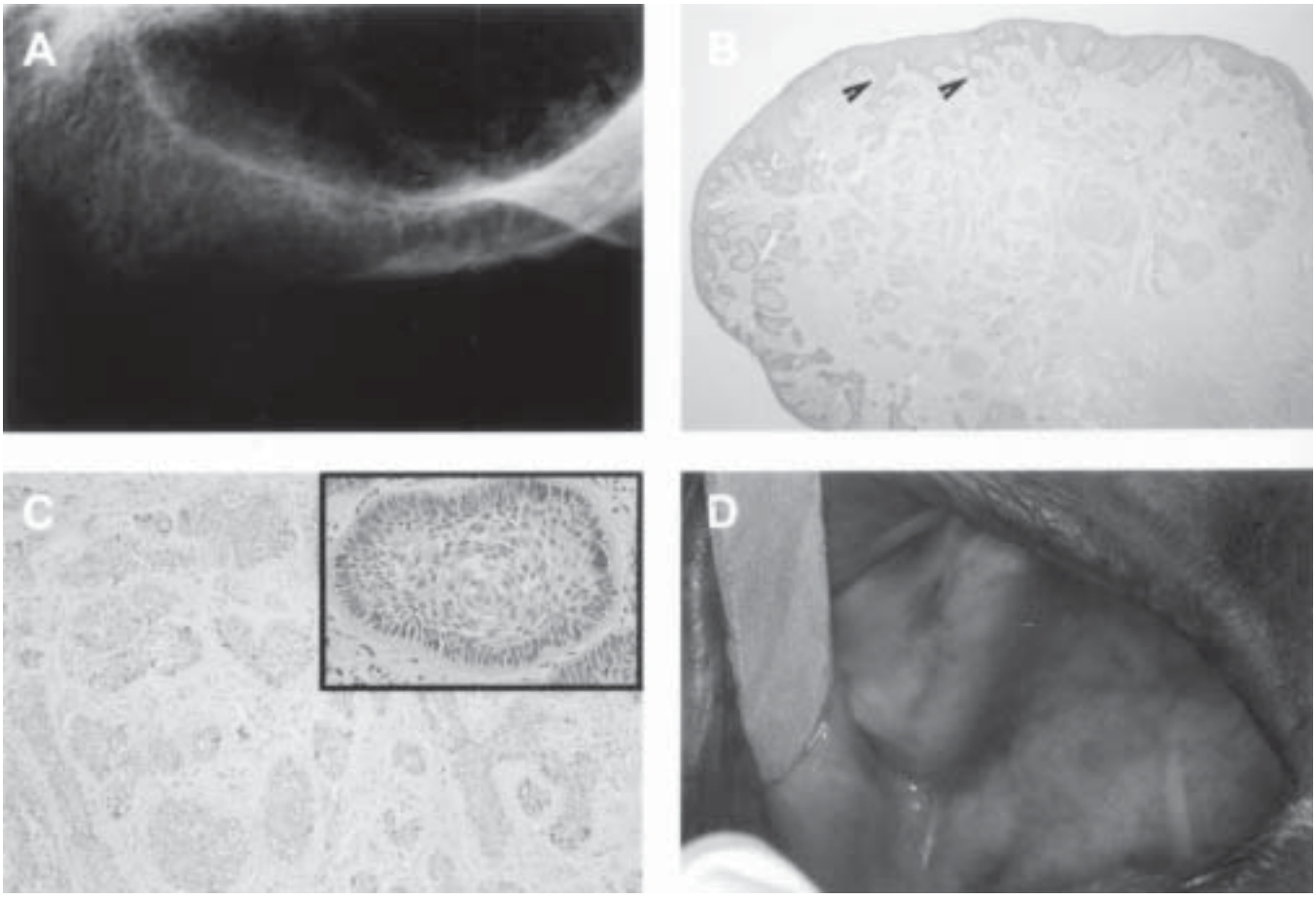

Fig. 1.A - *Periapical radiograph demonstrating bone erosion with cupping effect in right posterior region. B- Mucosal fragment with odontogenic epithelial proliferation in the lamina propria. Fusion of nests and cords with keratinized stratified squamous epithelium are observed (arrows head). The lower histological margin is disease-free (Haematoxylin-eosin satin, 100X original magnification). C- Nests and cords of odontogenic epithelium were distributed in a fibrous stroma. In the box, it is depicted a nest showing peripheral ameloblast-like and central cells resembling the stellate reticulum (Haematoxylin-eosin satin, 200X original magnification; in the box 400X original magnification). D. Nine months of clinical follow-up the patient is free-disease.*

Discussion

Ameloblastoma is an epithelial odontogenic tumour of the jaw bones which is thought to arise from rests of the dental lamina or from basal cells of the surface epithelium[7-9]. A recent investigation demonstrated that alterations of the ameloblastin gene forms the genetic basis for ameloblastoma[10].

Currently, ameloblastoma was divided in four clinico-pathological types: solid, desmoplastic, unicistic and peripheral[7]. The PA is also known as the extraosseous ameloblastoma, soft tissue ameloblastoma, ameloblastoma of mucosal origin, or ameloblastoma of the gingiva. It comprises 1.3-10% of all ameloblastomas[3]. While some lesions are localized entirely within the connective tissue of the gingiva, others seem to fuse with or originate from the mucosal epithelium, the former present in the current case report[7].

Phillipsen et al.[3] in 2001 reviewed 160 cases of PA and observed that this tumor usually exhibit as a painless, sessile, firm growth with a smooth surface. In the majority of the cases there is no radiological evidence of the bone involvement[3]. The PA is more common in men (65%) and the mean age at the time of diagnosis is 52.1 years old. Although our case occurred in the posterior maxilla of a woman, the mandible is the most common site for PA accounting for 70.9% of the cases[3]. The differential diagnosis should include soft tissue tumors such as peripheral giant cell granuloma, peripheral odontogenic fibroma, peripheral ossifying fibroma, papilloma and pyogenic granuloma[3-4].

Authors believe that PA totally lacks the persistent growth of intraosseous ameloblastoma. It is less aggressive than the intraosseous ameloblastoma and the term PA can be potentially dangerous because the diagnosis may lead to unnecessary aggressive treatment[11]. Although the recurrence rate of the PA is much lower (16%, 19%)[12-13] than the intraosseous ameloblastoma, long-term follow up is required. In addition, recurrent lesion has been reported as an ameloblastic carcinoma[14]. Our case has nine months of follow-up and the patient is free of disease.

Although the current case had clinical appearance of reactive hyperplastic lesions, the microscopic examination revealed the diagnosis of PA. Therefore, it is important to include peripheral ameloblastoma as a differential diagnosis of nodular lesions of gingiva and alveolar mucosa.

Acknowledgements

The authors would like to thank FAPEMIG (CDS 895/05) and CNPq (301736/2004-9; 502978/2004-0) for financial support. RS Gomez and RA Mesquita are research fellows of CNPq.

References

1. Stanley HR Jr. , Krogh HW. Peripheral ameloblastoma of the gengiva. Report of a case. Oral Surg Oral Med Oral Pathol. 1959; 12: 760-5.
2. Mintz S, Anavi Y, Sabes WR. Peripheral ameloblastoma of the gengiva. A case report. J Periodontol. 1990; 61: 649-52.
3. Philipsen HP, Reichart PA, Nikai H, Takata T,Kudo Y. Peripheral ameloblastoma: biological profile based on 160 cases from the literature. Oral Oncol. 2001; 37: 17-27.
4. Nauta JM, Panders AK, Schoots CJF, Verney A, Roodenburg JLN. Peripheral ameloblastoma. A case report and review of the literature. Int J Oral Maxillofac Surg. 1992; 21: 40-4.
5. Gardner DG. Some current concepts on the pathology of ameloblastomas. Oral Surg Oral Med Oral Pathol. 1996; 82: 660-9.
6. Wettan HI, Patella PA, Freedman PD. Peripheral ameloblastoma: review of the literature and report of recurrence as severe dysplasia. J Oral Maxillofac Surg. 2001; 59: 811-5.
7. Barnes L, Eveson JW, Reichart P, Sidransky D, editors. The World Health Organization Classification of Tumours. Pathology and genetics. Head and neck tumours. . Lyon: IARC Press; 2005. p.285.
8. Lin SC, Lieu CM, Hahn LJ, Kwan HW. Peripheral ameloblastoma with metastasis. Int J Oral Maxillofac Surg. 1987; 16: 202-6.
9. Gurol M, Burkes EJ Jr. Peripheral ameloblastoma. J Periodontol. 1995; 66: 1065-8.
10. Perdigao PF, Gomez RS, Pimenta FJ, De Marco L. Ameloblastin gene (AMBN) mutations associated with epithelial odontogenic tumors. Oral Oncol. 2004; 40: 841-6.
11. Gardner DG. Peripheral ameloblastoma. A study of 21 cases, including 5 reported as basal cell carcinoma of the gingival. Cancer. 1977; 39: 1625-33.
12. Buchner A, Sciubba JJ. Peripheral epithelial odontogenic tumors: a review. Oral Surg Oral Med Oral Pathol. 1987; 63: 688-97.
13. Nauta JM, Panders AK, Schoots CJF, Vermey A, Roodenburg JLN. Peripheral ameloblastoma: a case report and review of literature. J Oral Maxillofac Surg. 1992; 21: 40-4.
14. Baden E, Doyle JL, Petriella V. Malignant transformation of peripheral amloblastoma. Oral Surg Oral Med Oral Pathol. 1993; 75: 214-9.