

# Mucoepidermoid carcinoma mimicking a mucocele: a case report highlighting the importance of microscopic analysis of oral lesions

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• **Conflicts of interest:** none declared.

## ABSTRACT

**Objective:** the aim of this paper is to report a case of palatal Mucoepidermoid carcinoma (MEC) mimicking a mucocele, to highlight the main differential diagnoses, and to point out the need of a biopsy to establish the diagnosis even in a suspicion of benign reactive lesions. **Case report:** a female was referred to a stomatologist for evaluation of a palate swelling noticed about two months earlier. Physical exam revealed a painless translucent submucosal nodule, with an erythematous halo, in the right soft palate. Considering the clinical appearance, diagnostic hypothesis included mucocele and pleomorphic adenoma. An incisional biopsy was performed. Histological analysis of the specimen showed definitive diagnosis of low grade MEC. The case was managed through a complete surgical excision. Currently, she has been followed up without any signs of recurrence. **Conclusion:** early diagnosis of MEC may guide an adequate therapeutic management and, consequently, promote a favorable prognosis.

**Keywords:** Mouth neoplasms; Mucoepidermoid carcinoma; Mucocele.

## Introduction

Mucoepidermoid carcinoma (MEC) was first described by Stewart *et al.*<sup>1</sup> in 1945 and was named “mucoepidermoid tumor” because, at that time, it was not clear whether it had a benign or a malignant nature. MEC is the most common malignant neoplasm of both major and minor salivary glands.<sup>2</sup> In the intraoral minor salivary glands, it mainly develops in the hard palate, usually affecting patients in the fifth decade of life, with a slight predilection for women.<sup>3</sup>

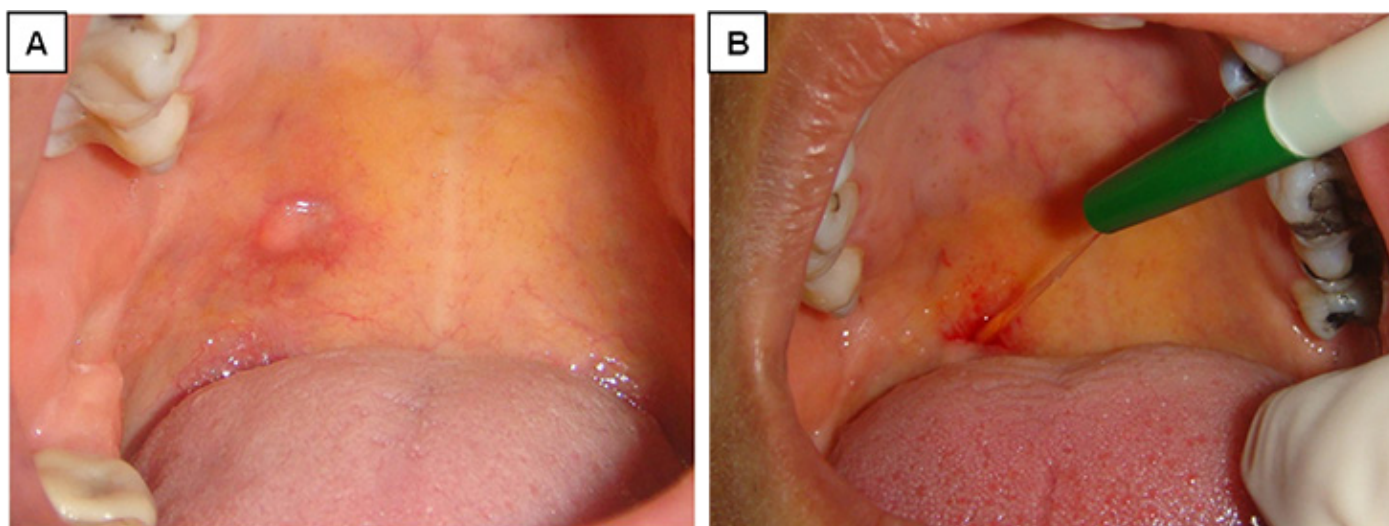
The most common clinical presentation of intraoral MEC is a submucosal sessile nodule that may have a normal mucosa, a bluish color or an ulcerated surface. Following the distribution of palatal salivary glands, all the lesions are off midline.<sup>4</sup> MEC diagnosis is based on the microscopic analysis. It is characterized by a combination of the following cell types – mucous, intermediate and squamous – which can be arranged in islands, nests and cystic formations. MEC has been classified into three grades of malignancy (low, intermediate and high), and this subdivision is useful in establishing tumor treatment and prognosis. Early diagnosis is a determinant factor for proper management and better prognosis.<sup>3</sup>

Thus, the aim of this paper is to report a case of palatal MEC that clinically resembled a mucocele, to discuss the main clinical and histological differential diagnosis and to emphasize that even when the clinician has a strong suspicion of a benign reactive lesion, it is mandatory to perform a biopsy

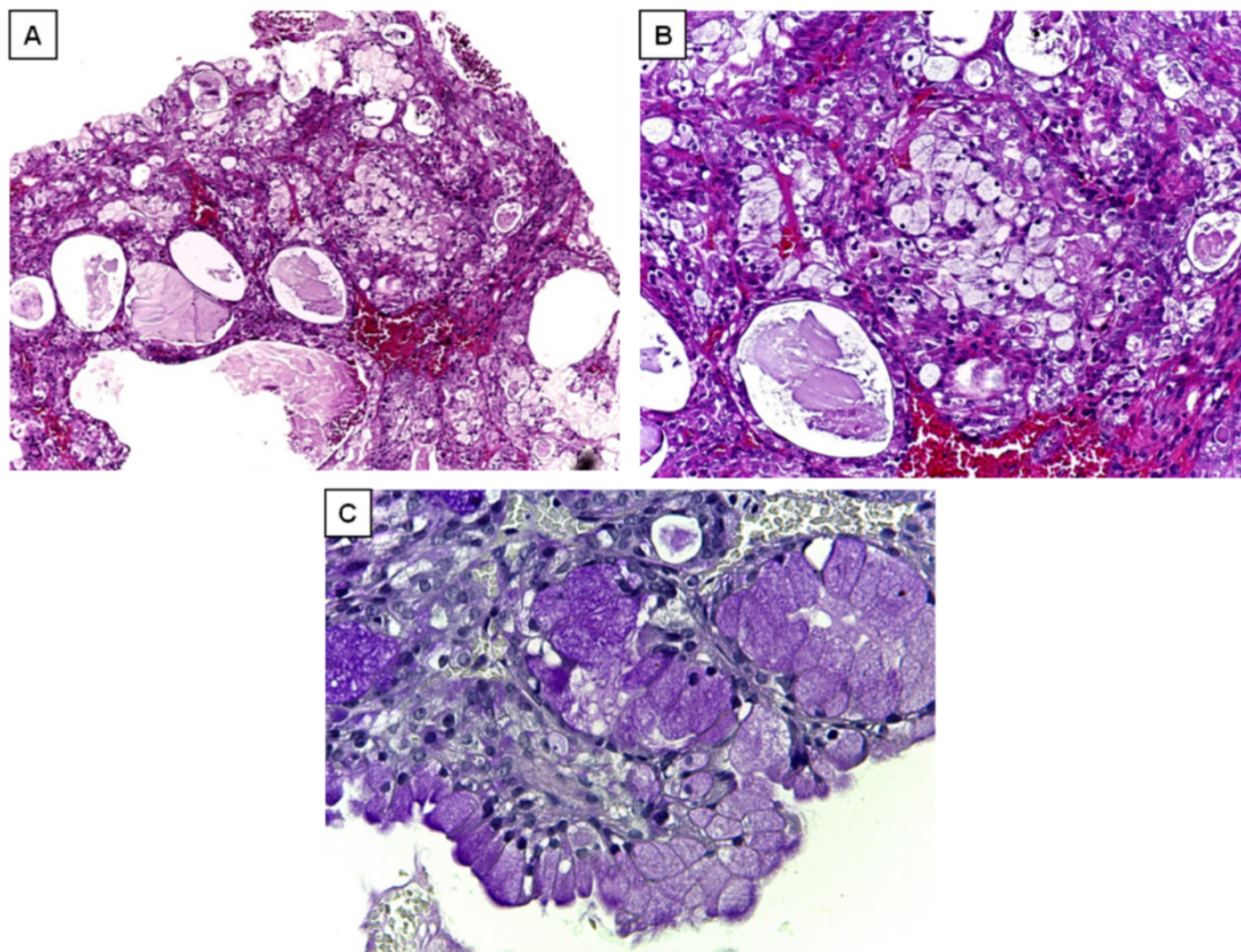
to confirm the diagnosis and to guide a proper treatment.

## Case Report

A 49-year-old female was referred to a stomatologist at an Army Dental Service for evaluation of a palate swelling noticed about two months earlier. Physical exam revealed a painless translucent submucosal nodule, with an erythematous halo, measuring about 1 cm in diameter, in the right soft palate (Figure 1A). Patient reported that the lesion eventually released saliva. Considering the clinical appearance, site and evolution, diagnostic hypothesis included mucocele and pleomorphic adenoma. An incisional biopsy was performed under local anesthesia and during the procedure the mucous content of the lesion similar to saliva was noticed (Figure 1B). Histological analysis of the specimen showed a lining of parakeratinized squamous epithelium associated with a proliferation of mucous, intermediate and squamous cells arranged in solid nests and mucinous cystic areas lined by columnar cells (Figure 2A and B). Therefore, MEC was the main diagnostic hypothesis, without discarding the possibility of a mucus retention cyst and other salivary gland neoplasm containing clear cells, such as clear cell carcinoma, mucinous adenocarcinoma and acinic cell carcinoma. PAS with diastase reaction revealed intracytoplasmic mucin leading to definitive diagnosis of low grade MEC (Figure 2C). The patient was referred for an Army General Hospital and was managed through a complete surgical excision. Currently, she is being followed up 6 years at without any signs of recurrence or regional metastasis.



**Figure 1.** Clinical presentation. A) A translucent submucosal nodule with an erythematous halo on the right side of the soft palate; B) that released saliva during the biopsy



**Figure 2.** Microscopic presentation. A) A submucosal solid proliferation associated with cystic spaces (hematoxylin and eosin, x10). B) High power view highlighting nests of clear cells surrounded by squamous and some intermediate cells. It is worth noticing that the cystic cavities are also surrounded by squamous cells (hematoxylin and eosin, x40). C) PAS reaction revealing the intracytoplasmic mucin of the mucous cells (PAS with diastase, x40)

## Discussion

Diagnosis of a salivary gland neoplasm is sometimes considered a challenge due to the existence of about 30 different histological types.<sup>3</sup> They represent between 3 and 10% of head and neck tumors.<sup>2,4</sup> Benign salivary gland tumors are more common in women, and malignant neoplasms show a slight predilection for men.<sup>2</sup> Major salivary glands are involved in 54.6% of the cases, and the parotid is the most affected. In minor salivary glands, the main involved site is the palate, but floor of the mouth, lips and also, the jaw, may eventually be affected.<sup>2,3</sup>

Salivary gland neoplasms, including MEC<sup>5,6</sup> should be included in the main differential diagnosis of palatal swellings. Some clinical features may guide clinicians to a more accurate provisional diagnosis and it is important to take in account that they are lateral to midline. Intraoral MEC may be fluctuant and have a bluish surface. Fluctuance reflects the tendency of the low grade lesions to form large mucin-filled cavities. Bluish surface is attributed in part to the cystic spaces that frequently contain mucous and/or bleeding products or to the tumor-associated vascular ectasia<sup>4</sup>. Though, in the present case, there was no telangiectatic surface, but a conspicuous erythematous halo and a translucent surface closely resembling a superficial mucocele.

MEC has been histologically classified as low, intermediate or high grade tumors according to its cell typing, arrangement and differentiation. Low-grade tumors are well differentiated and are primarily composed of mucous-secreting and squamous epithelial cells. High-grade tumors are poorly differentiated, and they are primarily composed of squamous epithelial and intermediated cells. Histological features of the intermediated-grade tumors fall in between

low and high grades.<sup>3</sup> The present MEC presented a great number of mucous cells and cystic spaces; thus, it was classified as a low-grade tumor.

Minor salivary gland MEC is usually treated by surgical excision, with a safety margin. Associated neck dissection and postsurgical radiotherapy are indicated in clinically and microscopically high-grade cases.<sup>7</sup> The present patient was treated only by surgical excision.

Factors related to MEC prognosis include older age, size of the primary tumor, presence of regional metastasis, fixation of tumors to adjacent tissues and histological grade.<sup>7</sup> In the present case, the whole picture contributed to a good prognosis – small low-grade tumor with no metastasis. It is important to highlight that some of these favorable prognostic indicators were probably the result of an early diagnosis. Clinical appearance was strongly suggestive of mucocele, except for its location. Because of that, a benign salivary gland tumor was included as differential diagnosis. It is well-known that dentists frequently discard oral mucosal or jaw specimens derived from lesions clinically compatible with benign reactive diseases, such as mucoceles, pyogenic granulomas or periapical granulomas. In this context, we should reinforce that, in view of the present report, all oral tissues removed must be submitted to histological analysis.

## Conclusion

It is necessary to guide and inform dentists about MEC possible clinical presentations and the importance of including it in the clinical differential diagnosis of palatal nodules. Early diagnosis will guide an adequate therapeutic management decision and promote a favorable prognosis to patients diagnosed with MEC.

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## Mini Curriculum and Author's Contribution

1. Tamires Thadeu Coelho – DDS and MSc. Contribution: data interpretation; preparation of the manuscript; writing of the manuscript.
2. Adrielle Ferreira Gouvêa – DDS and PhD. Contribution: effective scientific and intellectual contribution in the study.
3. Ademar Takahama Jr. – DDS and PhD. Contribution: effective scientific and intellectual contribution in the study.
4. Danielle Resende Camasca – DDS and PhD. Contribution: effective scientific and intellectual contribution in the study.
5. Silvia Paula de Oliveira – DDS and PhD. Contribution: effective scientific and intellectual contribution in the study.
6. Rebeca Souza Azevedo – DDS and PhD. Contribution: effective scientific and intellectual contribution in the study; data interpretation; preparation of the manuscript.

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