

## Mucoepidermoid carcinoma of palate - a rare entity

Anuna Laila Mathew,<sup>1</sup>  
 Biju Baby Joseph,<sup>2</sup>  
 Deepa Muraleedharan Sarojini,<sup>2</sup>  
 Preeja Premkumar,<sup>2</sup>  
 Sunil Sukumaran Nair<sup>3</sup>

<sup>1</sup>Department of Oral Medicine and Radiology, Pushpagiri College of Dental Sciences, Perumthuruthy, Thiruvalla, Kerala; <sup>2</sup>Department of Oral Medicine and Radiology, Azeezia College of Dental Sciences and Research, Kollam; <sup>3</sup>Department of Oral Pathology, Pushpagiri College of Dental Sciences, Perumthuruthy, Kerala, India

### Abstract

Mucoepidermoid carcinomas (MEC) of minor salivary gland origin are rare in children and adolescents. A 17-year young male, reported with a painless swelling in the left posterior area of the hard palate since 6 months. Several clinical, radiographic, and histopathological investigations were carried out. Incisional biopsy confirmed the diagnosis of lesion as low grade MEC of the palate following which a wide surgical excision with adjacent free margins was carried out. This case report highlights the need for considering malignant lesions in the differential diagnosis of palatal swellings even in younger age groups.

### Introduction

Mucoepidermoid carcinoma (MEC) is an epithelial salivary gland neoplasm. MEC was first reported by Massao and Berger in 1942 as a distinct pathologic entity. About 5% of these occur in younger age group usually less than 18 years with female predominance.<sup>1,2</sup> It is composed of mucus, squamous, and intermediate type of cells.<sup>3</sup> Histologically, it is classified into low, intermediate, and high grade.<sup>3</sup>

About two-third of MEC arise within the parotid gland, and one-third develops within the minor salivary glands. When it develops in minor salivary glands, it can be located on the palate, retromolar area, floor of the mouth, buccal mucosa, lips, and tongue. It most frequently occurs in the fifth and sixth decades of life. Although uncommon, it is the main malignant salivary gland tumor in adolescent.<sup>3</sup>

### Case Report

A young male of 17 years, reported to our department with the chief complaint of a swelling on the palate since 6 months. Swelling was initially small in size and has slowly increased in size. No h/o any toothache, pain, altered taste, sensation, numbness, pus discharge, bleeding from nose, trauma, extraction or weight loss. Medical history was non contributory.

Intraoral examination revealed a single dome shaped 3×2 cm swelling on the palatal aspect of 25, 26, and 27. Surface was smooth with an ulcer of 0.5 cm on the poster inferior aspect. Centre of the swelling was blue in colour, edge well defined with no pulsation. On palpation there was no rise in temperature, tenderness, or pulsation. Swelling was firm consistency in the periphery and soft and fluctuant in the centre Figure 1.

Based on the history and clinical examination differential diagnosis of benign minor salivary gland tumor, mucoepidermoid carcinoma, hemangioma were made.

Intraoral periapical radiograph revealed a well-defined radiolucency in the apical aspect of 26 Figure 2. Ultrasound revealed a solid mass lesion with few hypo echoic area within suggestive of necrosis possibility of a minor salivary gland tumor. Complete hemogram showed that all the parameters were within the normal range. FNAC was done aspiration was a 2 mL of pink colored viscous fluid mixed with blood to rule out hemangioma

Cytology report was low-grade mucoepidermoid carcinoma or mucous cyst (Figure 3).

Incisional biopsy was done, on histopathology examination, H and E staining showed three groups of cells, namely large mucous cells with an empty cytoplasm and peripherally placed nucleus, intermediate cells with basaloid nucleus, and epidermoid cells with eosinophilic cytoplasm suggestive of intermediate-grade MEC, following which a wide surgical excision with adjacent free margins was carried out. Postoperative healing was uneventful. Patient was followed up for an year and no recurrence reported.

### Discussion and Conclusions

It has been estimated that about 1-5% of all salivary gland tumors develops in children and adolescents.<sup>2,3</sup> The percentage of benign tumors occurring in the palate is higher than that of malignant tumors.<sup>4,5</sup> Most of the malignant neoplasms of the

Correspondence: Anuna Laila Mathew, Department of Oral Medicine and Radiology, Pushpagiri College of Dental Sciences, Perumthuruthy, Thiruvalla, Kerala, India. Tel.: +91.8547431225. E-mail: drmathewdan@yahoo.co.in

Key words: Palate; mucoepidermoid carcinoma; malignant; minor salivary gland.

Received for publication: 20 July 2017.  
 Revision received: 11 September 2017.  
 Accepted for publication: 15 September 2017.

This work is licensed under a Creative Commons Attribution NonCommercial 4.0 License (CC BY-NC 4.0).

©Copyright A.L. Mathew et al., 2017  
 Licensee PAGEPress, Italy  
 Clinics and Practice 2017; 7:1009  
 doi:10.4081/cp.2017.1009

salivary gland in children and adolescents occur in the parotid gland. Only a few cases are reported in minor salivary glands.

MEC is believed to arise from pluripotent reserve cells of excretory ducts that are capable of differentiating into squamous, columnar, and mucous cells.<sup>6,7</sup> It occurs commonly in parotid glands and minor salivary gland is the second most common site. It accounts for <3% of all head to neck tumors with a female predilection.<sup>7,8</sup> MECs are generally found between 10 and 16 years. Clinically, the majority of palatal MEC appears as firm, painless swellings, it mimic mucoceles or vascular lesions.

When a compressible palatal mass is observed in an adolescent, reactive and neoplastic lesions should be included in the differential diagnosis. A fluctuant light blue mass in an intraoral salivary gland bearing area, MEC and mucocele should also be considered.<sup>8-10</sup>

Histologically, mucoepidermoid carcinoma have been categorized into one of three histopathologically based on the amount of cyst formation, degree of cytologic atypia, relative numbers of mucous, epidermoid and intermediate cells.

Low-grade tumors show prominent cyst formation, minimal cellular atypia and high proportion of mucous cells. High-grade tumors consist of solid islands of epidermoid and intermediate cells. They also demonstrate considerable pleomorphism and mitotic activity. Mucous producing cells infrequent, difficult to distinguish from squamous cell carcinoma.<sup>11,12</sup>

Intermediate grade fall between low and high grade. Cyst formation occurs but less prominent than low grade. All 3 major cell type will be present, but intermediate cells



Figure 1. Swelling in the left posterior area of the hard palate.



Figure 2. Intra oral periapical view.

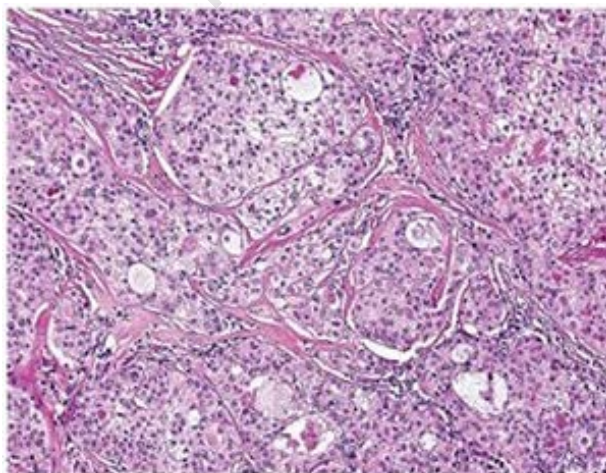


Figure 3. Cytology report showing low-grade mucoepidermoid carcinoma or mucous cyst.

predominate. Cellular atypia may or may not be present.

Moraes *et al.* suggested that low to intermediate-grade MECs originating from intraoral minor salivary glands can be managed by wide local surgical excision that ensures tumor-free surgical margins.<sup>9,11,12</sup>

If there is no evidence of bony involvement the tumor should be dissected down to the periosteum. If there is any evidence of periosteal involvement or bone erosion, removal of the involving bone is indicated. High-grade tumors require more aggressive surgical approach with postoperative radiotherapy and chemotherapy.

Low- to intermediate-grade MECs originating from intraoral minor salivary glands has a very low recurrence rate (<10%) and a high survival rate (90%).<sup>10</sup> Low and intermediate grade MECs have an indolent clinical course and a rare chance for metastasis. Radical neck dissection is indicated if clinical evidence of metastasis. Prognosis depends on grade and stage of tumor.<sup>11,12</sup>

A close clinical follow-up should be for lifetime because low and intermediate-grade MEC in this age group can recur many years later.

## References

1. Hicks J, Flaitz C. Mucoepidermoid carcinoma of salivary glands in children and adolescents: assessment of proliferation markers. *Oral Oncol* 2000;36: 454-60.
2. Luna MA, Batsakis JG, El-Naggar AK. Salivary gland tumors in children. *Ann Otol Rhinol Laryngol* 1991;100:869-71.
3. Neville BW, Damm D, Allen CM, Bouquot JE. Salivary gland pathology. *Oral and Maxillofacial Pathol* 2009;495-7.
4. Rajendran R. Tumors of the salivary gland. In: Rajendran R, Sivapathasundharam B, ed. *Shafer's Textbook of Oral Pathology*. India: Elsevier; 2009. pp 219-53.
5. Moshy J, Owibomaingere S, Mwakyoma H. Intraoral minor salivary glands neoplasms; the pattern and management. *Prof Med J* 2010;17:483-9.
6. Lee WH, Yoon JH. Mucoepidermoid carcinoma of the hard palate: a rare cause of hypervascular tumor. *Yonsei Med J* 2003;44:723-6.
7. Da Cruz Perez DE, Pires FR, Lopes MA, et al. Adenoid cystic carcinoma and mucoepidermoid carcinoma of the maxillary sinus: report of a 44-year experience of 25 cases from a single institution. *J Oral Maxillofac Surg*

- 2006;64:1592-7.
8. Flaitz CM. Mucoepidermoid carcinoma of the palate in a child. *Pediatr Dent* 2000;22:292-3.
  9. Munhoz Ede A, Cardoso CL, Tjioe KC, et al. Atypical clinical manifestation of mucoepidermoid carcinoma in the palate. *Gen Dent* 2009;57:e51-3.
  10. Ritwik P, Cordell KG, Brannon RB. Minor salivary gland mucoepidermoid carcinoma in children and adolescents: a case series and review of the literature. *J Med Case Rep* 2012;6:182.
  11. Moraes P, Pereira C, Almeida O, et al. Paediatric intraoral mucoepidermoid carcinoma mimicking a bone lesion. *Int J Paediatr Dent* 2007;17:151-4.
  12. April MM, Brodsky LS, Cunningham MJ, et al. Mucoepidermoid carcinoma in a 10-year-old girl. *Head Neck* 1997;19:431-5.

Non commercial use only