

## CASE REPORT

### Mucoepidermoid carcinoma of a Minor Salivary Gland- A Case Report

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#### ABSTRACT:

The tumors of the salivary gland account for less than 3% of the head and neck tumors. It has been estimated that about 1–5% of all salivary gland tumors develops in children and adolescents. Mucoepidermoid carcinoma (MEC) is the epithelial salivary gland neoplasm of the oral cavity. The salivary glands may present with a diverse range of lesions presenting a challenge to even the most experienced clinician and pathologist. MEC at times misleads the clinician because of its atypical location and innocent appearance. The purpose of this article is to report a case of mucoepidermoid carcinoma of minor salivary gland in a 39 year old male patient.

**Key words:** Adenoma, squamous cell, intermediate cell, mucous cell, soft palate, minor salivary gland.

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#### INTRODUCTION:

Mucoepidermoid carcinoma (MEC) is one of the most common malignant salivary gland tumors (SGT) which accounts for almost roughly around one- third of the epithelial malignancies in the salivary glands.<sup>1</sup>In case of minor salivary glands alone, the prevalence of occurrence is shown to be between 46% and 56%.<sup>2-4</sup> The palate is accounted to be the most common site to affect.<sup>4,5</sup> Histologically the tumor is comprised of cystic, solid, or mixed (cystic and solid) growth patterns and comprises primarily varying proportions of three cell types: mucous, epidermoid (or squamoid), and intermediate cells from one tumor to another. These cell types resemble those of the excretory ducts of salivary glands.<sup>6</sup> occasionally presence of clear cells in the tumor is the common finding, which is considered as one of the variant misleads the clinician because of its atypical location and innocent appearance.<sup>6</sup>

So as the result of above mentioned features and due to the main reason for diagnostic dilemma often misleads the pathologists to encounter in interpreting, also in differentiating benign from malignant cases due to its clinical presentation and appearance. In this present article we are presenting a case of mucoepidermoid carcinoma arising from the minor salivary gland involving hard and soft palate of 39 year old male patient.

#### CASE REPORT

A 39-year-old male patient reported to a private institution, outpatient department of Bangalore institute of dental sciences with a chief complaint of difficulty in swallowing due to ulcer in the palate since 2 months. (Fig-1) The history revealed, the ulcer was insidious in onset and developed small ulcer on the palate which gradually increased to the present size. The lesion was associated with continuous pain and tenderness which

aggravated on mastication and interfered with speech. There was no history with regards to medical illness, hospitalization or dental procedures. Personal history revealed the habit of smoking since 15 years, 2 packets of cigarettes per day. The general health and systemic condition was in normal limits.

On intra-oral examination, a well defined ulceroproliferative lesion measuring about 2x2cm, was seen on the right posterior part of hard palate which was crossing the midline, and extending to the soft palate. (Fig-1) The mucosa surrounding the lesion appeared to be erythematous and covered with pseudomembranous slough. On palpation the lesion was tender with no signs of bleeding and discharge. The lesion was well defined with firm, everted and indurated margins. Based on the history and clinical findings a provisional diagnosis of squamous cell carcinoma was given.

The radiographical examination was performed, paranasal sinus (PNS) (Fig 2) and computer tomography (CT) Scan (Fig 3) revealed an infiltrative ulcerative lesion on the hard palate.

The lesion was surgically excised by reflecting the mucoperiosteum along with palatal flap, leading to a bony depression of 1cm. The specimen was totally enucleated and sent to Oral Pathology laboratory for histopathological examination.

On gross examination the excised specimen was non encapsulated, firm in consistency, greyish red in color and measured 2.2 x 1.8cm in size. The entire tissue was subjected to routine tissue processing technique. The paraffin embedded sections of 4 µm thick were made, cut and stained with hematoxylin and eosin.

The histopathological examination revealed well circumscribed encapsulated (Fig-4) highly cellular lesional tissue showing glandular epithelium and tumour islands dispersed in the connective tissue, comprised of mucous cells, intermediate cells and epidermoid cells and focal areas of clear cells. Multiple cystic spaces filled with mucin was observed along with mucous secreting cells. The tumor cell seemed to be infiltrating deep into connective tissue and found even at the deepest margin of the section. (Fig- 4) the surrounding connective tissue in the section exhibited minor salivary gland tissue, muscles and numerous blood vessels with extravasated RBC's.



Figure 1: Clinical presentation of the ulceroproliferative lesion on the right side of the hard palate measuring 2cm x 2cm in size

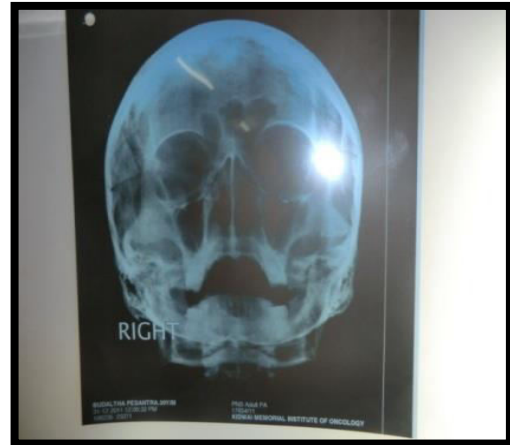


Figure 2: Paranasal sinus (PNS) revealed an infiltrative ulcerative lesion on the hard palate.



Figure 3: Computer tomography (CT) Scan revealed an infiltrative lesion on the hard palate.

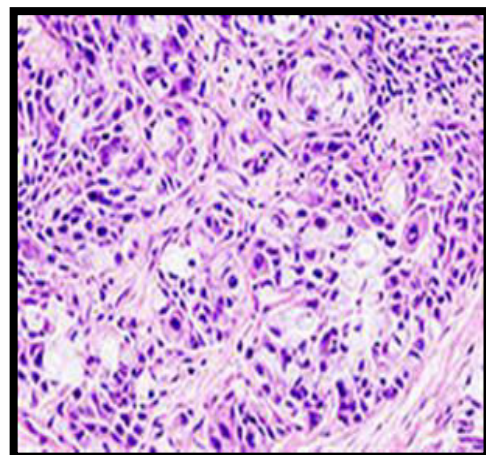


Figure 4: (H and E , 10 x), Photomicrograph of encapsulated highly cellular lesional tissue showing glandular epithelium and tumour islands dispersed in the connective tissue, comprised of mucous cells, intermediate cells and epidermoid cells

## DISCUSSION

Tumors of minor salivary glands make up 9% to 23% of all tumors.<sup>7</sup> Hicks and Flaitz,<sup>8</sup> stated that epithelial salivary gland neoplasms are rare and accounts <3% of all head and neck tumors both in adults and children.<sup>9</sup> Mucoepidermoid carcinoma is a malignant epithelial tumor observed and represents 29-34% of malignancies of the entire major and minor salivary glands tumor.<sup>10</sup>

MEC is one of the most common salivary gland tumor occurring in children, 5% of these tumors occur in patients younger than 18-year-old with females mostly affected.<sup>11</sup> According to Baker and Malone, malignancy seen in salivary gland tumors is 50% in children and 15–25% in adults.<sup>12</sup> The most common location of this tumor is parotid gland, accounting for about 60–70% of cases, followed by the minor salivary glands. MEC is about 1.5 times more prevalent in female as compared to males and is commonly seen in the third to sixth decades of life. Among minor salivary glands, the tumor shows a predilection to the hard and soft palate.<sup>10,13</sup>

The tumor normally presents as a slowly enlarging, painless mass which seldom exceeds 5cm in diameter. It is not completely encapsulated and often contains cysts which filled with a viscid mucoid material. But the intermediate grade MEC grows rapidly and patient may complain of trismus, drainage from ears, dysphagia, numbness and ulceration. The present case also presented as ulcer though other symptoms were not noted. High grade MEC's are not encapsulated, but intends to infiltrate the surrounded tissue.<sup>10</sup> These tumor presents clinically as ulceration causing resorption of the underlying bone, tooth mobility, root resorption. Advanced disease and late diagnosis cause extensive spread, with the possibility of perforation of the hard palate and invasion into maxillary antrum or nasal cavity.<sup>13</sup> So the present case also presented with the same features involving the hard and soft palate, presenting as persistent slow-growing ulcer, localized only to the palatal mucosa.

Histologically these tumors show a predominance of mucous secreting cells. Mucous cells are of various shapes and have abundant pale foamy cytoplasm that stains positively for mucin stains. The epidermoid cells have squamoid features with polygonal shape, intercellular bridges and rarely keratinization. Intermediate cells are the population of cells which are important in recognizing MEC's they are smaller in size and more basaloid and highly proliferative.<sup>10,14</sup> They are partially encapsulated and contain cystic spaces filled with mucin, lined by mucous secreting, intermediate, and epidermoid cells. An intermediate grade tumor comprises solid as well as cystic areas with more predominance of solid areas. It contains a large amount of intermediate cells that can give rise to both mucous and epidermoid cells. The high-grade tumors predominantly consist of epithelial cells as the predominant cell, with very few mucinous cells.<sup>13</sup> High-grade MECs that have a greater tendency to recur and to metastasize compared with Low - and intermediate-grade, which are having favorable outcome. Treatment outcome of these tumors is influenced by

clinical stage and histological tumor grade. Radical surgery is used for all high-grade MECs or low/intermediate-grade tumors that are large and involve the bone. In patients with positive surgical margins or for high-grade tumors radiotherapy could be combined with surgery.<sup>15</sup>

## CONCLUSION

Mucoepidermoid carcinoma has to be considered as one of the clinical and histopathological differential diagnosis for palatal swellings and the lesion must be subjected to appropriate examination to confirm the diagnosis. Pathologists should be aware of a variety of variants and histological presentations so as to give an accurate diagnosis. Low- and intermediate-grade MECs does not recur after adequate surgical excision. However possibility of recurrence in high grade MEC's, due to inadequate surgery and the implantation of tumor cells as a consequence of rupturing of the capsule, need to be kept in mind. Long term follow up of the patients is mandatory and crucial for planning a decent treatment modality for patients' health and prognosis.

## REFERENCES :

1. Ferlito A, Recher G, Bottin R. Mucoepidermoid carcinoma of the larynx. A clinicopathological study of 11 cases with review of the literature. *ORL J Otorhinolaryngol Relat Spec* 1981;43:280-99
2. Venkata V, Irulandy P. The frequency and distribution pattern of minor salivary gland tumors in a government dental teaching hospital, Chennai, India. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 2011;111:e32-9.
3. Pires FR, Pringle GA, de Almeida OP, Chen SY. Intra-oral minor salivary gland tumors: A clinicopathological study of 546 cases. *Oral Oncol* 2007;43:463-70.
4. Yih WY, Kratochvil FJ, Stewart JC. Intraoral minor salivary gland neoplasms: Review of 213 cases. *J Oral Maxillofac Surg* 2005;63:805-10.
5. Waldron CA, el-Mofty SK, Gnepp DR. Tumors of the intraoral minor salivary glands: A demographic and histologic study of 426 cases. *Oral Surg Oral Med Oral Pathol* 1988;66:323-33.
6. Ellis GL, Auclair PL. Atlas of Tumor Pathology: Tumors of the Salivary Gland. Series 3 Fascicle 17. Washington, DC: Armed Forces Institute of Pathology; 1996. p. 155-75.
7. Nayak S, Muhamood M, Jose M, Y.K Prasanth, Moothedath M – Myoepithelial cell predominant pleomorphic adenoma of a minor salivary gland – A case report. *International journal of research in Health and Allied sciences*. May-June 2019; 5(3):5-8.
8. Hicksand J, Flaitz C. Mucoepidermoid carcinoma of salivary glands in children and adolescents: Assessment of proliferation markers. *OralOncology* 2000;36:454-60.
9. Munhoz Ede A, Cardoso CL, Tjioe KC, Sant'ana E, Consolaro A, Damante JH, et al . Atypical clinical manifestation of mucoepidermoid carcinoma in the palate. *Gen Dent* 2009;57:51-3
10. Rajendran R, Sivapathasundharam B. Shafer's text book of oral pathology. 5th ed. Elsevier publication; 2006. Chapter 3, salivary gland tumors; Pg 309-17
11. Neville BW, Damm DD, Allen CM, Bouquot JE, editors. *Oral and maxillofacial pathology* 3rd edition. Philadelphia: WB Saunders; 2009. Page 473-80

12. Jarde SJ, Das S, Armugm SN. Chatterjee A and Babu C. Mucoepidermoid carcinoma of the palate: A rare case report. *J Indian Soc Periodontol.* 2016 Mar-Apr; 20(2): 203–206
13. Baker SR, Malone B. Salivary gland malignancies in children. *Cancer* 1985;55:1730-6
14. Thakur P, Gadipelly S, Pavan, Batchu K, Kothia P. Mucoepidermoid Carcinoma of Palate – A Case Report and Review of Literature. *Indian J Dent Adv* 2018; 10(4): 197-200
15. Triantafillidou1 K, Dimitrakopoulos J, Iordanidis F, Koufogiannis D. Mucoepidermoid carcinoma of minor salivary glands: a clinical study of 16 cases and review of the literature. *Oral Diseases* (2006) 12, 364–370.