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## Mucoepidermoid carcinoma of the palate with calcifications: A rare entity

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### Abstract

Mucoepidermoid carcinoma (MEC) is the most common tumour of salivary gland. Intraorally MEC is found on the palate. In salivary gland tumours calcifications are rare and they present in high grade variety tumours. 22 year old male patient visited department of Oral Medicine and Radiology with a complaint of ulcer on the palate. Incisional biopsy and surgical excision of was performed. Calcifications was present radiographically and histologically which confirmed the diagnosis. The purpose of this case report was to emphasize on the clinical, radiographic features, diagnosis of MEC.

**Keywords:** Mucoepidermoid carcinoma, calcification, salivary gland tumour, palate

### 1. Introduction

Mucoepidermoid Carcinoma (MEC) is the most common malignant salivary gland neoplasm. It comprises mixture of cells which includes mucus-producing, epidermoid or squamous and Intermediate types <sup>[1]</sup>. First case of mucoepidermoid carcinoma was reported by Schilling in 1921 <sup>[2]</sup>. The term MEC was coined Stewart and his associates in 1945 <sup>[1, 2]</sup>. MEC frequently occurs in parotid region and palate is the second most common site for occurrence. MEC rarely shows calcification <sup>[3]</sup>. The main treatment modality of MEC is surgical resection, and post-operative radiotherapy is also efficient <sup>[3]</sup>. We report a case of mucoepidermoid carcinoma of the palate with calcifications which was present on CT scan and confirmed by the histologic sections.

### 2. Case history

A male patient aged 22 years visited the department with a complaint of growth in the left side of palate since 3 months. The swelling was initially small in size and gradually increased. History revealed same kind of swelling 2 years back in the same region for which he had taken treatment. After the treatment swelling reduced in size. (Data was not there to support the nature of swelling). No history of secondary changes and associated symptoms was noted. There was no difficulty in mastication and speech. Swelling was associated with pain which was mild intermittent none radiating.

Past medical dental and family history was noncontributory. On inspection dome shaped swelling was present on the left side of the palate, measuring 3x2 cms. Extending antero posteriorly vertical line drawn from palatal side of 24 to junction between the hard and soft palate. Medially swelling extended to mid palatal suture and did not cross midline. Overlying mucosa of the swelling appeared normal except for the central portion which appeared slightly erythematous. (Figure1) On palpation inspeactory features was confirmed. The swelling was tender on palpation and firm in consistency with well-defined margins. It was fixed to the underlying tissues. Based on clinical examination and history minor salivary gland tumor of the palate was given. Pleomorphic adenoma and adenoid cystic carcinoma was included in the differential diagnosis. Various investigations were carried out like hematological, OPG (Orthopantomograph), CT scan FNAC and incisional biopsy. OPG showed slight radiopacification above the root of 26, 27. (Figure2) CT showed expansile osteolytic lesion seen in the hard palate with adjacent soft tissue component. Erosion of the palate was seen in the nasal wall. Ossification was noted within the lesion and mild scalloping of medial wall of left maxillary sinus. (Figure 3)

Microscopy section shows infiltrating neoplasm composed of predominantly mucin secretion

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arranged in glandular pattern with cytoplasmic mucin and round nucleus with vesicular chromatin, few squamous cells are seen infiltrating the muscle fibers with areas of extensive calcification and lymphocytic and plasma cells infiltration, no evidence of increase mitosis. (Figure 4)

Based on histopathology Mucoepidermoid carcinoma of the palate with calcifications was given. Surgical excision and palatal reconstruction was done.

### 3. Discussion

Mucoepidermoid carcinoma of the oral cavity arises from the ductal epithelium of the major salivary glands or minor salivary gland [4]. Most commonly affected site is palate followed by lower lip [3]. Intraoral MEC appear as firm swelling. About 5% of Mucoepidermoid carcinoma occurs in younger age group less than 18 years. MEC has slight female predilection [1, 5]. In our case swelling was on the palate which is common site for intraoral MECs and age of the patient which is common for MECs.

Histologic gradings based on the amount of the cystic component and the presence of mucous cells, being classified as low, intermediate or high-grade tumors depending on the ratio of epidermal cells to mucous cells. Microscopically several types of cells are seen like mucous- secreting cells, epidermoid cells, intermediate cells, clear cells. Conventional MECs is the most frequent type, which occurs followed by the clear cell subtype [6].

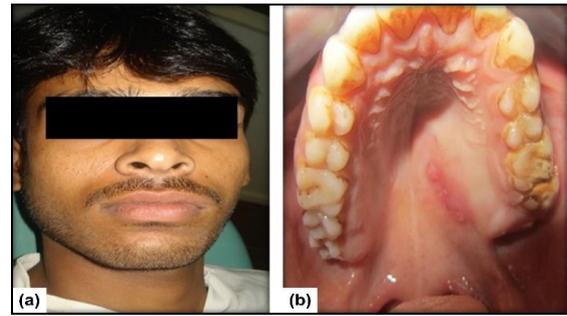
Calcifications are rare findings in salivary gland tumors and common in inflammatory salivary gland disorders. Yoon *et al.* proposed calcification is a common process in a wide variety of diseases states and mineralized tissue or bone formation as a component of the tumour, dystrophic calcification occurs within the areas of tumour necrosis, calcium is deposited within the tumour as a result of a secretory function of the tumour cells and metastatic calcification occurs as a result of hypercalcemia [7, 8].

These calcifications are concentric in nature and more seen in intra-luminal ducts and cysts. Five cases of calcification affecting the MECs were found in the minor salivary tumours till date and one case reported in parotid gland. These observations indicate that calcifications frequently develop in tumours affecting mucous salivary glands, emphasizing the hypothesis that calcifications may initiate from precipitation of salivary gland mucous secretion [6, 7, 8].

The mucous secretions formed from major and minor salivary glands are different. This could be another factor that describes calcifications have a tendency to develop in minor salivary gland tumors. There is a strong tendency that they occur as dystrophic calcification affecting the mucin component which are secreted by malignant cells [6, 7]. In present case there was dystrophic calcification in the palate. The clinical features of each differ and are important in the final determination of grade. If the tumor is in the palate, a CT scan or MRI scan with coronal views is needed to assess for sinus, nasal, or palatal bone invasion.

Treatment for MECs is surgical resection with adequate removal of normal margins of tissue [7]. Since recurrence rate is high in positive margins. If tumor invades bone, reconstruction has to be planned. For high grade tumors radiotherapy is given. The recurrence rate for MEC is around 25%. The low grade tumours have a recurrence rate of 10% and high grade tumors have 75% [3].

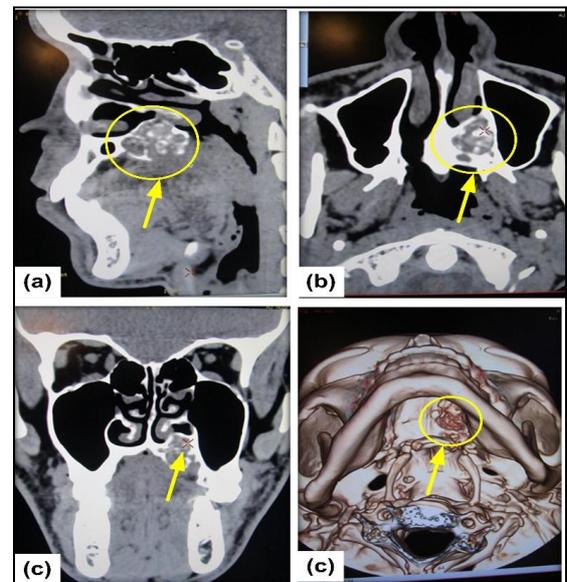
### 3.1 Figures



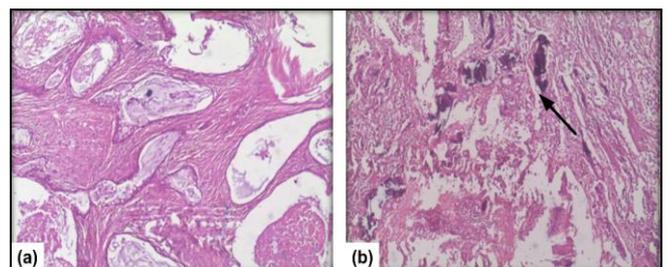
**Fig 1:** Intraoral palatal swelling with erythematous area on the left side of the palate



**Fig 2:** OPG showing opacification on the left maxillary sinus



**Fig 3:** Expansile osteolytic lesion of the palate with ossification seen (a) sagittal view of CT (b) axial view (c) coronal view (d) 3D reconstruction



**Fig 4:** Low power (10x) (a) showing mucin secreting cells arranged in glandular pattern (b) dispersed areas of calcification.

#### 4. Conclusion

A case of MEC with calcification was presented as it rare and needs to be considered in differential diagnosis of salivary gland tumour.

Apparently, the presence of calcifications in MECs was thought to be aggressive, after various research studies and review of literature we can conclude that MECs with calcification is not associated with poor outcomes so we can conclude that calcification doesn't play any role in its prognosis and treatment.

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**6. Source of support:** Nil

**7. Conflict of interest:** Nil

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