

Mucoepidermoid Carcinoma of Palate: A Case Report

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The most common types of salivary gland tumors are the pleomorphic adenoma and the mucoepidermoid carcinoma (MEC). MEC mainly occurs in the parotid gland; intraorally MEC appears as asymptomatic swellings in minor salivary glands, most commonly occurs on palate. It shows a variety of biological behaviors and variable natural history. Clinical, radiological and histopathological findings of palatal MEC in a young woman presented here. Surgical resection was done. Follow-up of one and half year did not show any recurrence.

Keywords: Carcinoma, Mucoepidermoid, Palate, Salivary glands

INTRODUCTION

Mucoepidermoid carcinoma (MEC) is most common malignant salivary gland tumor, first described as a separate pathologic entity by Stewart *et al.* in 1945. As its name suggests, MEC is composed of a mixture of cells, including mucus-producing, epidermoid or squamous and intermediate types.¹ The peak age of occurrence of MEC was in the older age group like sixth decade of life, with a mean of 44.5 years.² MEC was most common in the parotid gland (44.1%), whereas 25% of patients had tumors in the minor salivary glands. Low, intermediate, and high-grade neoplasms accounted for 61.7%, 26.5%, and 11.8% of tumors, respectively.³ MEC shows a variety of biological behaviors, and the high-grade MEC is a highly aggressive tumor, while low-grade counterpart shows a more benign nature. The main treatment modality in the treatment of MEC, like in most types of salivary gland malignancies, is surgical resection, and post-operative radiotherapy seems to be efficient.¹ MEC tumors (53%) occur in major glands; the parotid gland is affected most frequently (45%), followed by the minor salivary glands of the palate. Also, the percentage of benign tumors occurring in the palate was higher than that of malignant tumors.² The size of the salivary gland is indirectly proportional to the incidence of malignancy of that gland. The smaller glands present increased risk of malignancy. Minor salivary gland neoplasms affecting the soft palate account for approximately 2% of all head and neck mucosal malignancies.³ Histologically, MEC is classified into three types of malignancy-low, intermediate, and high grade using five histopathological features namely intracystic component, neural invasion, necrosis, mitosis and anaplasia. MEC is a highly aggressive tumor, its low-grade counterpart

usually demonstrates a more benign nature. The main therapeutic method in the treatment of MEC, like in most types of salivary gland malignancies, is surgical resection and post-operative radiotherapy seem to be efficient.²

CASE REPORT

A 33-year-old female patient visited our department of oral medicine and radiology with the chief complaint of swelling in the palate since 8 years. Swelling was small in size when she noticed and is gradually increasing in size. It is not associated with pain and any discharge. She was known the diabetic and on medication. Her past dental history revealed that the patient had undergone extraction of right maxillary first molar (i.e., 16) 8 years ago. Family history was not significant. Patient was in good physical condition. Extra-oral examination was unremarkable. On intraoral examination, a circular shaped swelling measuring about 1.5 cm × 0.5 cm seen on the right part of the palate slightly right to the midline. It extended anteriorly to mesial of the second premolar and posteriorly to mid of the second molar. Borders are distinct and smooth. No secondary changes seen. On palpation of the lesion all inspectory findings were confirmed, swelling was non-tender, soft to firm in consistency with regular smooth borders. Provisional diagnosis of residual cyst with differential diagnosis of adenoma of minor salivary gland arrived. Histopathology of the specimen shows tumor composed of squamous cells, intermediate cells and mucin-secreting cells (Grade II). Computed tomography scans of sagittal, coronal and reconstruction images showed no involvement of hard tissues. Patient was surgically treated under general anesthesia; tumor was surgically resected by partial

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maxillectomy and reconstructed with temporal myofacial flap. Later functional rehabilitation prosthesis given and patient was recalled for follow-up (Figures 1-4).

DISCUSSION

Epithelial salivary gland neoplasms are rare to occur in adults and children, accounting for less than 3% of all head and neck tumors.¹ Epithelial malignancies originating in the minor salivary glands account for approximately 15% of all salivary gland neoplasms.² When MEC arises in minor salivary glands it can be located on the palate, in the retro molar area, the floor of the mouth, the buccal mucosa, the lips and the tongue.³ MEC of the oral cavity originates in the ductal epithelium of the major salivary glands or minor

salivary glands. Affected minor glands are most frequently located in the palate, followed by the lower lip as the second most common site of minor salivary glands. There have been occasional case reports of primary cutaneous MECs considered to originate in sweat glands and also in the vermillion border of the lower lip, where there are no salivary glands.⁴ MEC of salivary glands is believed to originate from pluripotent reserve cells of excretory ducts that have potential to differentiating into squamous, columnar, and mucous cells.¹ MECs have a slight female predilection and are uncommon in the first decade of life. MECs have a great predilection for the hard palate or soft palate or both soft and hard palates.⁴ Clinically, the most of palatal MECs appears as firm swellings and may resemble mucoceles or vascular lesions. The mucosa overlying palatal tumors can be papillary, and the cortical bone may show superficial erosion. The lesions usually are painless; however, symptoms include pain, dysphagia, paresthesia, and bleeding.⁵ Intraosseous carcinoma originating in the jaw bones was described as a central epidermoid carcinoma by Loos in 1913. Later, Pindborg coined the term primary intraosseous carcinoma (PIOC) in the first edition of the World Health Organization classification for the histopathological typing of the odontogenic malignancies. Central MEC cases should be followed-up for a longer period due to the possibility of late recurrence or regional metastasis.⁶ Central MEC commonly occurs in the fourth to fifth decade of life and have slight female predilection and common the occurrence in maxilla compared with mandible. Variability of radiographic features of PIOC and its resemblance to peri-apical lesions and radicular cysts and other odontogenic cysts and tumors, PIOC should be taken in consideration in the differential diagnosis of radiolucent lesions of jaws. In the case of periapical lesions dental caries or trauma will be present while radicular cyst will show a sclerotic border. Malignant tumors of odontogenic epithelial origin, like ameloblastic carcinoma, clear cell

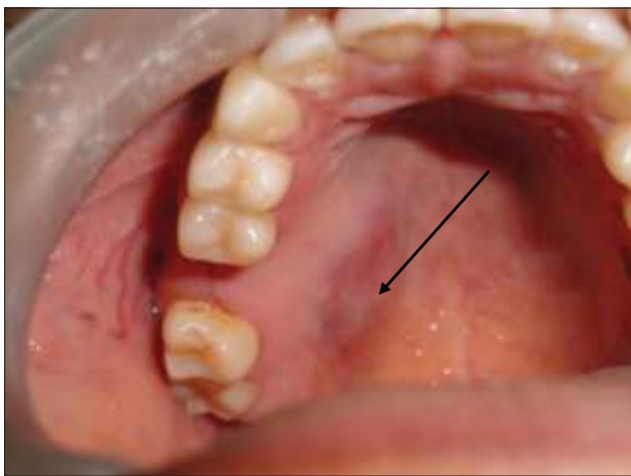


Figure 1: Pre-operative image showing, lesion located at the right side of the posterior palate

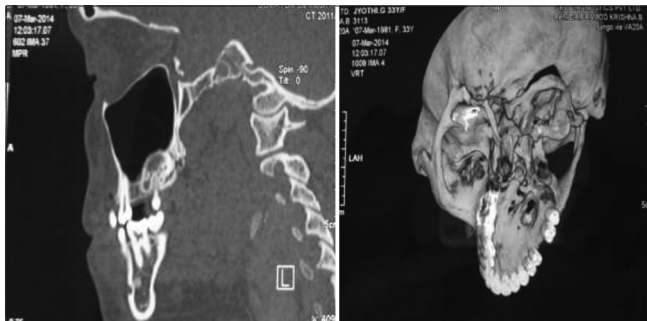


Figure 2: Sagittal view and 3D reconstruction shows nothing significant

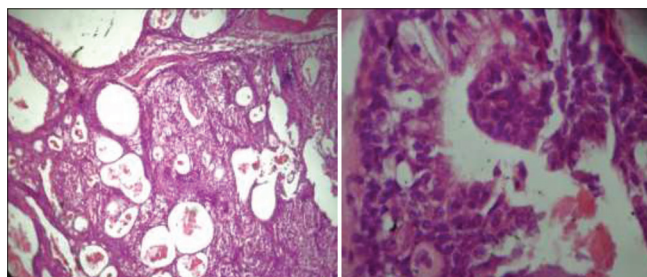


Figure 3: Histopathology images shows tumor composed of mucin secreting cells

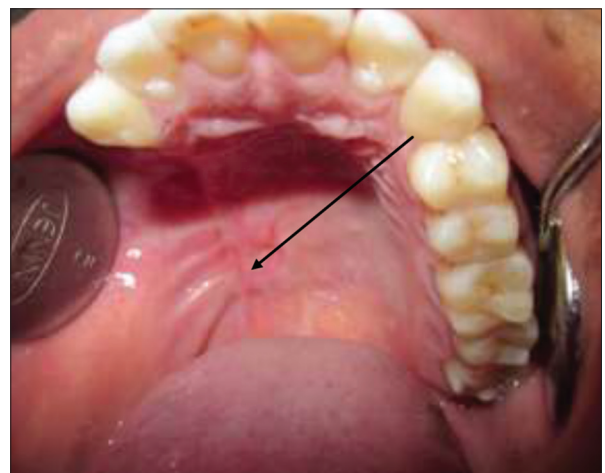


Figure 4: Post-operative image showing complete healing after the subtotal maxillectomy

odontogenic carcinoma, odontogenic ghost cell carcinoma, and malignant counterpart of calcifying epithelial odontogenic tumor should be taken in consideration in the differential diagnosis and squamous cell carcinoma of mucosal origin, acanthomatous ameloblastoma, squamous odontogenic tumor, and pindborg's tumor also should be ruled out.⁷ The radiographic features are usually a well-circumscribed unilocular or multilocular radiolucency in the mandibular posterior region, involving the molar and ramus region. The periphery of the lesion is mostly well-defined, corticated and often crenated or undulating in nature, which is similar to a benign odontogenic tumor. The multilocular lesion has an internal structure that mimic a soap bubble or honeycomb appearance.⁸ Auclair *et al.* (1992) studied the grading criteria of MECs presenting 143 cases of MECs of minor salivary glands. The clinical features suggesting aggressive nature are short duration, presence of clinical symptoms and location of the tumor in the tongue and the floor of the mouth. The treatment of choice for low-grade MECs is complete surgical resection of the tumor with free surgical margins.¹ For the most of the cases of mucoepidermoid cases, the surgical management of palatal minor salivary gland tumors has been the traditional option of treatment. Wide local excision and enucleation have been done for benign tumors, and wide local excision, if not hemimaxillectomy, has been the most common technique for malignant lesions. Surgical defects will be reconstructed with local pedicled flaps for benign tumors. according to Beckhardt *et al.*, benign tumors should be widely excised with a cuff of normal, healthy tissue and handled carefully to avoid tumor spillage-enucleation may not be sufficient. When the tumor appeared to invade grossly or nearer to the bone of the palate, the bone was resected or widely removed with a drill. Malignant lesions should be removed completely in one setting with an adequate margin of normal tissue, due to higher rates of recurrence in lesions with positive margins. According to Truitt *et al.* there are transoral procedures for excising tumors of the palate, includes palatectomy, alveolectomy, and the infrastructure maxillectomy. According to Moore *et al.* it is advisable to perform primary reconstruction of the palatomaxillary defect. Palatomaxillary obturators have been the standard ones for reconstruction in this palatal region, but they have numerous disadvantages. In addition to being insensate, obturators are often uncomfortable and ill-fitting, particularly in the soft palate, making them not ideal for palatal reconstruction. The potential for sensate reconstruction of such defects has been stressed by Urken, due to the complex functions of the palate that includes speech and swallowing. Improvements in reconstructive techniques have led to the introduction of a host of local pedicled flaps for palatomaxillary reconstruction, are tongue flaps, uvular flaps, the palatal island flap, buccal flaps, temporalis myofascial flaps, submental flaps, and

free tissue transfer.⁹ The role of chemotherapy in the management of MEC is not defined completely. However, it is usually reserved for patients with progressive local or metastatic disease that is not suitable to surgical treatment or radiation therapy. Many of the authors have tried to correlate clinical and pathologic aspects of salivary gland MEC with prognosis of the same. Factors such as tumor grade, neural invasion, lymph node metastasis, extension of soft tissue, and microscopic residual disease have shown a correlation with recurrence rates and survival factors. Grade appears to be the most important prognostic indicator. Although the relationship between the type of surgical treatment and survival rates are not known, it is clear that local and regional recurrence is most common to occur in patients with positive margins.¹⁰

CONCLUSION

Swellings in the palatal region resemble dental abscess and cyst, which can lead to unnecessary treatment and delay in diagnosis of true disease; hence, these kinds of swellings must be considered carefully and interdisciplinary approach will bring to a successful treatment.

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