



LOW GRADE MUCOEPIDERMOID CARCINOMA OF PALATE TREATED WITH TEMPORALIS MYOFASCIAL FLAP REPAIR - A CASE REPORT

Maxillofacial Surgery

Munka Sumedha*	Post graduate Trainee, Department of Oral & Maxillofacial Surgery, Regional Dental College & Hospital, Guwahati, Assam. *Corresponding Author
Debnath Subhas Ch	MDS (OMFS), Ph.D, Department of Oral & Maxillofacial Surgery, Regional Dental College & Hospital, Guwahati, Assam.
Rabha Prasanta Kr.	MDS (OMFS), Department of Oral & Maxillofacial Surgery, Regional Dental College & Hospital, Guwahati, Assam.
Nath Tanmoy	MDS (OMFS), Department of Oral & Maxillofacial Surgery, Regional Dental College & Hospital, Guwahati, Assam.

ABSTRACT

Mucoepidermoid carcinoma (MEC) is a malignant salivary gland tumor that arises from the pluripotent cells of the excretory duct. It constitutes <10% of all tumors of salivary glands, it is one of the most common (approximately 30%) of all malignant tumors of the salivary glands. It can be classified histologically, into low, intermediate, and high grade and is composed of mucus, squamous, and intermediate types of cells. Most frequently seen in parotid gland, followed by minor salivary glands. Treatment of MEC depends upon the extent and aggressiveness of the lesion. Here we present a case of low grade mucoepidermoid carcinoma which involved both hard and soft palate also with palpable lymph node which was treated with wide local excision and left infrastructural maxillectomy followed by repair with temporalis myofascial flap.

KEYWORDS

Mucoepidermoid Carcinoma; Maxillectomy; Palate; Salivary Gland Neoplasm; Temporalis Myofascial Flap.

INTRODUCTION:

Mucoepidermoid carcinoma (MEC) which was first reported by Massao and Berger in 1942 is a malignant salivary gland tumor that arises from the pluripotent cells of the excretory duct. It was first described as a separate pathological entity by Stewart et al. in 1945.[1] The World Health Organization (WHO) classified it as a malignant neoplasm and named it as MEC in 1990.[2] Although it constitutes <10% of all tumors of salivary glands, it is one of the most common (approximately 30%) of all malignant tumors of the salivary glands.[3] It can be classified histologically, into low, intermediate, and high grade and is composed of mucus, squamous, and intermediate types of cells.[4] It occurs most commonly in the third to sixth decades of life with female predominance in a ratio of 3:2. Most frequently seen in parotid gland, followed by minor salivary glands. When involving the minor salivary glands it occurs in regions of hard palate & soft palate (28%), retromolar region (23%), floor of mouth (14%), buccal mucosa (11%) and lower lip (9%).[5] Treatment of MEC depends upon the extent and aggressiveness of the lesion. When the lesion extends to the maxillary sinus or the nasal cavity it needs extensive resection surgeries following reconstruction.[6] One such option for the reconstruction of the palatal defects is the temporalis muscle flap.

Palate defects caused by tumor resection greatly alters the speech and swallowing patterns in a patient besides the cosmetic defects. It leads to hypernasal speech, nasal regurgitation of ingested foods and liquids, along with increased risk of aspiration.[7] Although microvascular free flap reconstruction is one of the advanced method for palatal reconstruction, it involves additional surgical site and often requires a two team approach. Palate defects can be reconstruction with a temporalis myofascial (TM) flap which is a relatively easier procedure since it is a regional flap in close proximity to the defect site. Also it may be performed by a single surgeon without microvascular training. It is effective for most patients, and good outcomes have been demonstrated[8]

Here, we report a case of Low grade Mucoepidermoid Carcinoma of palate in a 23 year old female patient who was treated with surgical excision of maxilla, followed by repair with temporalis muscle flap.

Case Report:

A 23 year old female patient reported with a chief complaint of swelling in the upper left side of the palate since three months. The swelling was initially small in size and gradually increased. It was associated with mild pain intermittently and no discharge. On examination 2.5 x 3 cm approx. swelling with distended mucosa and bluish discolouration seen in the left hard and soft palate crossing the

midline and 2 cm medially to the alveolus. (Fig 1) The swelling was non tender and soft on palpation.



Fig 1: Clinical presentation of the disease: Swelling present in the left hard & extending to the soft palate, crossing the midline.

Fine needle aspiration cytology from the swelling reveals cellular smears which shows sheets of epithelial cells along with small streams of cells within the mucous. Cells have increased nuclear cytoplasmic ratio with moderate to scanty bluish cytoplasm, enlarged nuclei with prominent nucleoli. Background is dirty with the presence of mucous and debris, which are suggestive of low grade mucoepidermoid carcinoma.

Patient was prepared for surgery under general anesthesia and under all aseptic and antiseptic conditions, left submandibular incision with lip split was given. Left level I -III were excised. Primary disease was marked and mucosa was incised with free margin (1.5cm). Palatal bone and left lateral wall of maxilla was cut. (Fig 2) Pterygomaxillary dysjunction was done with pterygoid chisel and primary disease was removed.



Fig 2: Markings showing extent of infrastructural maxillectomy.

Modified Alkayat Bramley incision was given in the left temporal region. Subgaleal flap was elevated till the inferior border of the zygomatic arch. Temporalis muscle was incised at the superior temporal line and muscle was elevated from pericranium. (Fig 3)



Fig 3: Temporalis myofascial flap elevated.

Temporalis muscle was tunneled under the zygoma to cover the left Class II (d) defect of the maxilla.(Fig 4, Fig 5)

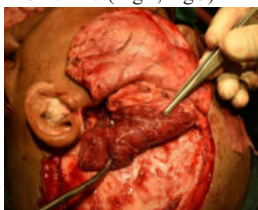


Fig 4: Tunnelling of the flap below the zygomatic arch intraorally.



Fig 5: Tunnelling of the flap intraorally successful.

It was sutured with 2-0 round body suture. (Fig 6)



Fig 6: Suturing of the flap in place.

Hemostasis achieved. Closed wound suction drain placed in left temporal and left neck region. Intraoral and extraoral closure done with 2-0 vicryl round body, reverse cutting silk and skin stapler. No complications seen during the entire procedure. Resected specimen sent for histopathological examination. (Fig 7)



Fig 7: Resected specimen.

Post op HPE report reveals tumor is composed of solid and cystic areas. It is composed of sheets of squamous cells along with cystic spaces lined by mucinous epithelium. Tumor islands are separated by fibrocollagenous tissues. Perineural invasion is seen. No lymphovascular invasion seen. Consistent with mucoepidermoid carcinoma, grade 2, hard palate. Patient received further adjuvant therapy and is doing well with a review of more than 1.5 years. (Fig 8)



Fig 8: Post operating healing after 1.5 years.

DISCUSSION:

Low-grade mucoepidermoid carcinomas occurring in the palate

requires a soft tissue palatal excision with peripheral margins of 1-cm and anatomical barrier margins.[9] Unless radiographs, scans, or direct observation indicate tumor extension into it, the palatal bone does not require excision. Prophylactic neck dissection or postoperative radiotherapy or is not indicated unless involved. The treatment is the same for lesions in other oral mucosal sites, such as the retromolar area. The 5-year survival rate for individuals with low-grade mucoepidermoid carcinoma of the oral mucosa treated in this fashion is about 95%.[9] Mucoepidermoid tumors are the one malignancy for which histologic grading and clinical behavior characteristics correlate and are somewhat predictive of biologic behavior. Treatment decisions are therefore based on histologic grading. Low-grade mucoepidermoid carcinomas like that of a pleomorphic adenoma, will possess an infiltrative growth pattern and a very slow growth rate. They metastasize infrequently and only late in their course. Whereas high-grade mucoepidermoid carcinomas behave like poorly differentiated squamous cell carcinomas with rapid infiltrative growth and metastasis.[10]

The temporalis muscle flap is a robust flap. It has excellent healing and functional outcomes and remains a viable alternative in palate defect repair despite the advent of microvascular flaps. It has low rates of necrosis since is a very well vascularized flap. It can fill large and even bilateral palate defects and offers good functional outcomes for speech and swallowing. It can be harvested using various small and big incisions. For cases which requires only some strip of muscle or fascia to be taken to close any defect, small incisions are adequate, but in the above mentioned case the post maxillectomy defect created was Brown's Class II d defect[12]. So in order to have a proper coverage of a defect, almost the entire temporalis muscle was harvested using a big incision. Besides this, the incision used to harvest this flap can also be used to access additional tissue for reconstruction, including the temporo parietal fascia, periosteum over the bone of the temporal fossa, and calvarial bone. Most importantly, a single surgeon can perform a resection and the reconstruction in a single operative field. It can be used to fill unilateral defects up to 6 cm in length and bilateral defects up to 4 cm encompassing all regions of the palate (pre-maxilla with hard and soft palate).[7] Abubaker and Abouzgia reported closing palate defects up to 6 x 5 cm in size encompassing both the hard and soft palate, with no complications.[11] Guidelines proposed by Brown and Shaw describe that the TM flap can be used for: vertical maxillary defects, as long as they do not encompass orbits/nasal bones; horizontal palatal defects less than or equal to one-half the width of the palate; or a combination of the two.[12] In the above discussed case we presented a case of low grade mucoepidermoid carcinoma which involved both hard and soft palate also with palpable lymph node which was treated with wide local excision and left infrastructural maxillectomy followed by repair with temporalis myofascial flap. The patient recieved adjuvant CT-RT and with a follow up of 1.5years is doing well. Thus, temporalis flap can be considered as one of the versatile options to treat palatal defects.

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