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Case Report

MUCOEPIDERMOID CARCINOMA OF PAROTID GLAND IN A CLEFT PATIENT: CASE REPORT

Priyesh N Kesharwani[1]., Rahul Tiwari[2]., Arun Ramaiah[3]., Abhishek Jairaj[4]., Raj Kumar Tiwari[5] and Heena Tiwari[6]

[1]Private Practitioner & Consultant, Thane, Mumbai, Maharashtra
[2] OMFS & Dentistry, JMMCH & RI, Thrissur, Kerala
[3]Cleft & Craniofacial Centre, St. Thomas Hospital, Malakkara, Pathanamthitta, Chengannur, Kerala
[4]Faculty of Dentistry, AIMST University, Semeling Kedah Malaysia
[5]Department of Oral and Maxillofacial Surgery, Meenakshi Ammal Dental College, Chennai, T.N., India
[6]PGDHHM, Government Dental Surgeon, CHC Makdi, Kondagaon, C.G

A R T I C L E I N F O

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A B S T R A C T

Mucoepidermoid carcinoma (MEC) is the most common malignant neoplasm of the major salivary glands, accounting for 15.5% of all cases, benign and malignant. The aim of this article is to report a case of MEC in a 21-years-old male patient who presented with a painless firm fluctuant swelling in right preauricular area. The lesion was thoroughly examined preoperatively, and investigations were carried out. Fine-needle aspiration cytology was done for the lesion and report suggested tumor of the parotid gland. MRI scan was done for confirmation. Superficial parotidectomy procedure was done, taking care not to injure the divisions of the facial nerve with submental flap reconstruction. Post recovery was uneventful with no defect of facial nerve functions. The histologic picture confirmed that the tumor was MEC of parotid gland. Through the literature reviews of MEC the discussions on prevalence, origin, diagnosis, histological finding, investigation and the modes of treatment are made.

INTRODUCTION

Salivary gland cancer starts in one of the salivary glands. It's not just one disease. There are actually several different salivary glands found inside and near your mouth. Many types of cancer and benign (non-cancerous) tumors can develop in these glands.The 2 main types of salivary glands are the major salivary glands and minor salivary glands. There are 3 sets of major salivary glands on each side of the face: The parotid glands, the largest salivary glands, are just in front of the ears. (Fig.1) About 7 out of 10 salivary gland tumors start here. Most of these tumors are benign (not cancer), but the parotid glands still are where most malignant (cancerous) salivary gland tumors start. The submandibular glands are smaller and are below the jaw. They secrete saliva under the tongue. About 1 to 2 out of 10 tumors start in these glands, and about half of these tumors are cancer. The sublingual glands, which are the smallest, are under the floor of the mouth and below either side of the tongue. Tumors starting in these glands are rare.There are also several hundred minor salivary glands that are too small to see without a microscope.

Corresponding author:* **Priyesh N Kesharwani
Private Practitioner & Consultant, Thane, Mumbai, Maharashtra

These glands are under the lining of the lips and tongue; in the roof of the mouth; and inside the cheeks, nose, sinuses, and larynx (voice box). Tumors in these glands are uncommon, but they are more often cancerous than benign. Cancers of the minor salivary glands most often start in the roof of the mouth. Mucoepidermoid carcinomas are the most common type of salivary gland cancer. Most start in the parotid glands. They develop less often in the submandibular glands or in minor salivary glands inside the mouth. These cancers are usually low grade, but they can also be intermediate or high grade. Mucoepidermoid carcinoma is the most common type of minor salivary gland malignancy in adults. Mucoepidermoid carcinoma can also be found in other organs, such as bronchi, lacrimal sac [1] and thyroid gland. Mucicarmine staining is one stain used by pathologist for detection.[2] Occurs in adults, with peak incidence from 20-40 years of age. A causal link with cytomegalovirus (CMV) has been strongly implicated in a 2011 research.[3] Presents as painless, slow-growing mass that is firm or hard. Most appear clinically as mixed tumors.This tumor is not encapsulated and is characterized by squamous cells, mucus-secreting cells, and intermediate cells.[4] Mucoepidermoid carcinomas of the salivary and bronchial glands are characterized by a recurrent t(11;19)(q21;p13) chromosomal translocation resulting in a

MECT1-MAML2 fusion gene.[5] The CREB-binding domain of the CREB coactivator MECT1 (also known as CRTC1, TORC1 or WAMTP1) is fused to the transactivation domain of the Notch coactivator MAML2.[6] A possible association with papillomavirus has been reported.[7] Generally, there is a good prognosis for low-grade tumors, and a poor prognosis for high-grade tumors, however recent research have found reoccurring low grade tumors also have a poor prognosis.[8] Surgery is the recommended treatment for localized resectable disease.[9] When the tumour is incompletely resected (positive margins) post-operative radiotherapy gives local control comparable to a complete resection (clear margins).[10] Sometimes when surgery is not possible due to extent of disease or if a patient is too frail for surgery, or declines surgery, palliative radiotherapy may be helpful. There has been a report of a case where low dose radiotherapy achieve disease response and control for more than 4 years.[11] In patients with metastatic disease, chemotherapy response tends to be low (27% partial response rate) and short lived.[12]

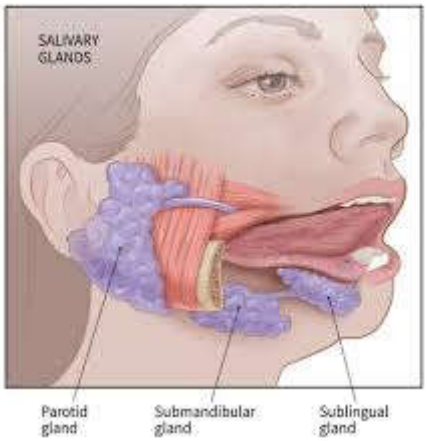

Figure 1 Descriptions of major salivary glands.

Case Report

A 21-year young patient presented with a painless swelling on the right preauricular region since 1 year. The lesion was properly examined clinically and required investigation were performed on physical examination a firm 4X4 cm mass was palpated on the right preauricular region with no lymphadenopathy with intact facial nerve functioning. Hematological investigation was in normal limits. Patient was a known case of cleft palate. Magnetic resonance imaging neck for parotid gland was done using STIR, T_2 coronal, T_2 sagittal T_1-T_2 and fat suppressed axial sequence with post contrast T_1 sequences. Right parotid gland appears bulky with evidence of heterogenous signal involving superficial parotid gland. Irregular enhancing compound is seen in anterior and superior part of lesion, measures 2.2 antero-posterior X 1.6 medio-lateral X 2.2 craniolateral cm with evidence of large cystic component, entire lesion measures 3.5 anteroposterior X 2.3mediolateral X 4.1 craniocaudal cm (Fig2). Cystic component shows mild peripheral enhancement and appear reaching up to sub cutaneous skin surface. Minimal enhancing soft tissue in right mastoid air cells likely mild inflammation. Entire lesion appears posterior to retromandibular vein. Post contrast study shows no significant abnormal enhancement involving facial nerve in canalicular, tympanic or stylomastoid component, mildly enlarged enhancing lymph nodes in bilateral canal Ib, II, III, IV region, largest in the level II measures 1.2 anterioposteriorly X 1.4 mediolaterally cm without necrosis. Left parotid, both submandibular gland, tongue proper, posterior 1/3rd of tongue, epiglottis, base of skull and recovered no abnormal enhancing lesion. Fine needle aspiration cytology reported right parotid mass yielded 5mm pus like fluid, smears shows sheets of polymorphs without granulomas or epithelial cells. Biopsy showed multiple cystic spaces lined with immature squamous epithelium intercepted with tall mucous secreting epithelial cells. The tumor tissue is not infiltrating into surrounding deep soft tissue. Low grade malignant parotid gland right side suggestive of mucoepidermoid carcinoma was reported with surgical staging T2 N0 M0. Parotidectomy with total nerve sparing was planned under general anesthesia. Nil sis trunk incision just in front of tragus extending posteriorly to the tumor adherent to the skin was made. Flaps were raised till anterior border of parotid and part of masseter muscle posteriorly till sternomastoid insertion and mastoid process. Cartilaginous portion of external acoustic canal was identified. The cystic portion of tumor was adherent to it. While dissection the cartilaginous portion of external auditory canal was injured inadvertently. The stylomastoid foramen was dissected but facial nerve trunk could not be identified. Retrograde facial nerve dissection from lower buccal branch was done. zygomatic, temporal, buccal, marginal mandibular, cervical branch were identified (Fig.3) All salivary gland tissue was dissected and total parotidectomy was done. for ease of facial nerve dissection, the upper portion of superficial lobe of parotid was divided from the tumor bearing portion of parotid. The cervical branch was passing through the tumor hence it was sacrificed. Level IIa and IIb was dissected and send for frozen section examination which was negative for metastasis hence further neck dissection was not done. hemostasis was achieved and reconstruction with submental flap was done. final histopathology reportedlow grade mucoepidermoid carcinoma with no perineural invasion or lymphovascular emboli. Island of tumor cells are seen surrounded by desmoplastic stroma (Fig 4). Frozen section reported four reactive lymph nosed in IIa and IIb. Patient was on regular follow up with no presenting complaints.

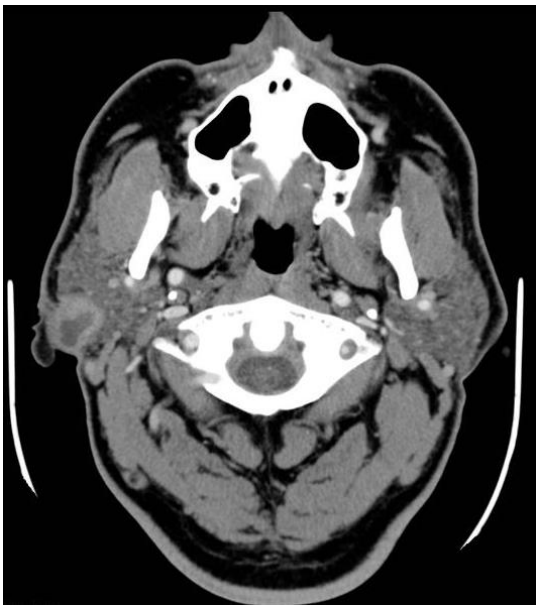

Figure 2 MRI Scan.

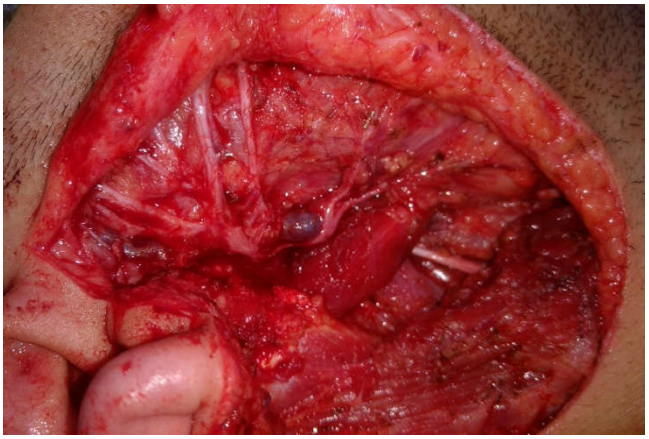

Figure 3 Spared branches of Facial Nerve

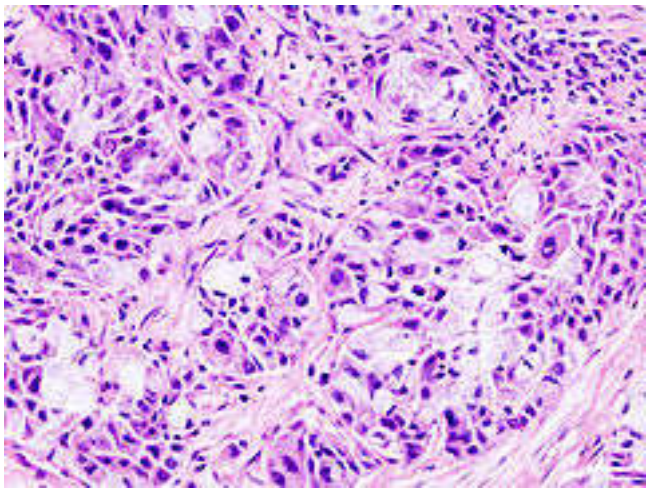

Figure 4 Histopathology Picture

CONCLUSION

Mucoepidermoid carcinoma can present widelydiverse biological behaviors based on the myriad of histological characteristics. MEC is a unique carcinomaas it demonstrates a broad spectrum of aggressiveness from indolent tumors that are cured by surgery alone toaggressive neoplasms that are prone to local invasion, recurrence, and metastasis. Parotid MEC appears tobe a highly curable disease. Whatever the treatment modality, MEC patients should be closely followed-upfor life to rule out late recurrence.

References

1. Williams, Joanna D; Agrawal, Amit; Wakely, Paul E (2003). "Mucoepidermoid carcinoma of the lacrimal sac". *Annals of Diagnostic Pathology*. 7 (1): 31-4. doi:10.1053/adpa.2003.50005. PMID 12616472.
2. Baloch, Zubair W; Solomon, Alyson C; Livolsi, Virginia A (2000). "Primary Mucoepidermoid Carcinoma and Sclerosing Mucoepidermoid Carcinoma with Eosinophilia of the Thyroid Gland: A Report of Nine Cases". *Modern Pathology*. 13 (7): 802-7. doi:10.1038/modpathol.3880140. PMID 10912941.
3. Melnick, Michael; Sedghizadeh, Parish P; Allen, Carl M; Jaskoll, Tina (2012). "Human cytomegalovirus and mucoepidermoid carcinoma of salivary glands: Cell-specific localization of active viral and oncogenic signaling proteins is confirmatory of a causal relationship". *Experimental and Molecular Pathology*. 92 (1): 118-25. doi:10.1016/j.yexmp.2011.10.011. PMID 22101257.
4. Chenevert, Jacinthe; Barnes, Leon E; Chiosea, Simion I (2011). "Mucoepidermoid carcinoma: A five-decade journey". *VirchowsArchiv*. 458 (2): 133-40. doi:10.1007/s00428-011-1040-y. PMID 21243374.
5. Chiosea, Simion I; Dacic, Sanja; Nikiforova, Marina N; Seethala, Raja R (2012). "Prospective testing of mucoepidermoid carcinoma for the MAML2 translocation: Clinical Implications". *The Laryngoscope*. 122 (8): 1690-4. doi:10.1002/lary.22419. PMID 22833306.
6. Behboudi, Afrouz; Enlund, Fredrik; Winnes, Marta; Andrén, Ywonne; Nordkvist, Anders; Leivo, Ilmo; Flaberg, Emilie; Szekely, Laszlo; Mäkitie, Antti; Grenman, Reidar; Mark, Joachim; Stenman, Göran (2006). "Molecular classification of mucoepidermoid carcinomas-Prognostic significance of the MECT1-MAML2 fusion oncogene". *Genes, Chromosomes and Cancer*. 45 (5): 470–81. doi:10.1002/gcc.20306. PMID 16444749.
7. Isayeva, Tatyana; Said-Al-Naief, Nasser; Ren, Zhiyong; Li, Rong; Gnepp, Douglas; Brandwein-Gensler, Margaret (2012). "Salivary Mucoepidermoid Carcinoma: Demonstration of Transcriptionally Active Human Papillomavirus 16/18". *Head and Neck Pathology*. 7 (2): 135-48. doi:10.1007/s12105-012-0411-2. PMC 3642267 Freely accessible. PMID 23233027.
8. Rubin, Arielle; Davis, John; Jreije, Karim; Wu, Henry; Oppenheimer, Randy (2017). "Case Report: Recurrent Mucoepidermoid Carcinoma of the Tongue in Adult Female Patient with Lung Cancer". *Clinical Medicine Insights: Ear, Nose and Throat.* 10: 1179550617720462. doi:10.1177/1179550617720462. PMC 5513522 Freely accessible. PMID 28757800.
9. Verma, Jonathan; Teh, Bin S; Paulino, Arnold C (2011). "Characteristics and outcome of radiation and chemotherapy-related mucoepidermoid carcinoma of the salivary glands". *Pediatric Blood & Cancer*. 57 (7): 1137-41. doi:10.1002/pbc.22978. PMID 21280198.
10. Hosokawa, Y; Shirato, H; Kagei, K; Hashimoto, S; Nishioka, T; Tei, K; Ono, M; Ohmori, K; Kaneko, M; Miyasaka, K; Nakamura, M (January 1999). "Role of radiotherapy for mucoepidermoid carcinoma of salivary gland". *Oral oncology*. 35 (1): 105-11. PMID 10211318.
11. Vulpe, H; Giuliani, M; Goldstein, D; Perez-Ordonez, B; Dawson, LA; Hope, A (29 October 2013). "Long term control of a maxillary sinus mucoepidermoid carcinoma with low dose radiation therapy: a case report". *Radiation oncology (London, England).* 8: 251. doi:10.1186/1748-717X-8-251. PMID 24165756.
12. Licitra, L; Cavina, R; Grandi, C; Palma, SD; Guzzo, M; Demicheli, R; Molinari, R (August 1996). "Cisplatin, doxorubicin and cyclophosphamide in advanced salivary gland carcinoma. A phase II trial of 22 patients". Annals of oncology: official *journal of the European Society for Medical Oncology*. 7 (6): 640-2. PMID 8879381.