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# MUCOEPIDERMOID CARCINOMA- A CLINICAL CASE REPORT

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**Abstract:**

Mucoepidermoid carcinoma (MEC) is the commonest malignant salivary gland tumour affecting the parotid gland in adults and children. Typically, mucoepidermoid carcinomas (MECs) are found in the tracheobronchial, lacrimal, and salivary glands. The purpose of this case report is to discuss the clinical manifestation, diagnosis, and treatment plan of MEC of the parotid gland. A 53 years old male came to the Outpatient Department with chief complaint of swelling in the left side of the face. The primary course of treatment for this tumour has been surgical resection. FNAC of the lesion confirmed the diagnosis of Pleomorphic adenoma following which a wide surgical excision with adjacent free margins was carried out. This case report highlights the need for proper diagnosis and treatment plan in the cases of malignant tumors as it can lead to morbidity and mortality.

**Keywords:** Mucoepidermoid carcinoma, Pleomorphic adenoma, Parotid gland

## INTRODUCTION

In 1945, Stewart et al. conducted the first investigation and characterization of mucoepidermoid carcinoma, a malignant epithelial tumour. Mucous-secreting cells and epidermis-moid type cells are present in the tumour in different quantities, as the term suggests. Notable cell types include columnar and transparent cells, which frequently exhibit prominent cystic development.[1]

In most cases, salivary, lacrimal, and tracheobronchial glands are home to muco-epidermoid carcinomas (MECs). Major and minor salivary glands can give rise to malignant tumours, of which 29–34% are mucoepidermoid carcinomas on average. About 5% of all salivary gland tumours are this type of cancer.

The mean age of patients with MEC is 48 years (range 12-82 years) with peaks in the fifth and sixth decades of life, although it may occur at any age. In children and adolescents, there is a peak incidence in the second decade It most frequently occurs in the parotid gland. Strong preference for the palate is demonstrated by mucoepidermoid carcinoma when viewed intraorally.[2]

Mucoepidermoid carcinomas are divided into three grades based on histology: low, middle, and high. Multiple well-circumscribed squamous nests comprising numerous clear cells are a frequent nesting pattern developed by low grade malignancies. Less cystic and more likely to generate extensive squamous cell sheets, intermediate-grade tumours also frequently have a more pronounced intermediate cell population. Higher degrees of atypia are present in primarily solid high-grade tumours.

## CASE REPORT:

A 53 years old male came to the Outpatient Department with chief complaint of swelling in the left side of the face for past 6months duration. The swelling was gradually increased in size for the past two months and patient also had a complaint of occasional pain in left ear. There was no history of bleeding and discomfort in the swelling region. Patient had past history of Bell's palsy 4 years back and patient had underwent treatment after 2 years. Also had history of trauma in a road traffic accident before 30 years and underwent surgery in abdomen above umbilicus. Patient was a known smoker and smokes one pack per day for past 6 years and discontinued the habit before 6 months. Clinical examination shows Facial asymmetry, normal TMJ movements and mouth opening within physiological limits. On Extra Oral examination, swelling present on the left side of the face in the angle of mandible measuring 3*3 cm on inspection. Solitary painless swelling was seen that extends from left tragus superiorly,2 cm from line drawn vertically from left lateral canthus anteriorly,1cm below left angle of mandible, posteriorly up to left mastoid process. On facial examination, patient had absence of wrinkles on forehead and unable to close his left eye, obliteration of nasolabial fold on left side of face, mouth deviated towards right side, difficulty in smiling, lifting of earlobe was seen and no sign of drooling of saliva with normal skin texture and no colour change was present. On palpation, swelling was non- tender, warmth, hard in consistency, absence of compressibility and flexibility and fixed to underlying tissue. On Hard tissue examination, decayed tooth present in 18,17,12,22,36,46 and root stumps in 26,27,37,48.

**FIGURE 1:** FACIAL PALSY

**FIGURE 2:** OBLITERATION OF EAR LOBE

Fine needle Aspiration Cytology revealed pleomorphic adenoma of left parotid gland.
MRI Reveals malignant left parotid tumour with perineural spread – possibly PLEOMORPHIC ADENOMA OF LEFT PAROTID GLAND

HISTOPATHOLOGICALLY, cytosmears studied from left parotid swelling were moderately cellular, showing epithelial like cells in monolayered sheets and poorly cohesive clusters with discernible called myoepithelialcells. Background shows scattered ovoid and spindled out myoepithelial cells along with cyst macrophages and proteinaceous secretion.
Total parotidectomy of the left parotid gland was done and sentfor excisional biopsy. The post-surgical course was uneventful.
On histopathological examination, Sections studied shows salivary gland which harbors a malignant tumour composed of epithelial cells arranged in sheets and nests. Most of them are polygonal in nature having moderate amount of eosinophilic cytoplasm, prominent nucleoli and squamoid differentiation. However squamous pearls were not identified, there was also elongated hyperchromatic cells arranged in clusters in between squamoid cells. Rarely vague glandular differentiation with mucoid secretion seen. There was perineural and vascular invasion noticed. Rarely chondroid area observed amidst tumour cells. Nodes which were seen adjacent to tumour were free from tumour. One of the margins was involved by the tumour. Features suggestive of High grade Mucoepidermoid carcinoma on left Parotid gland.

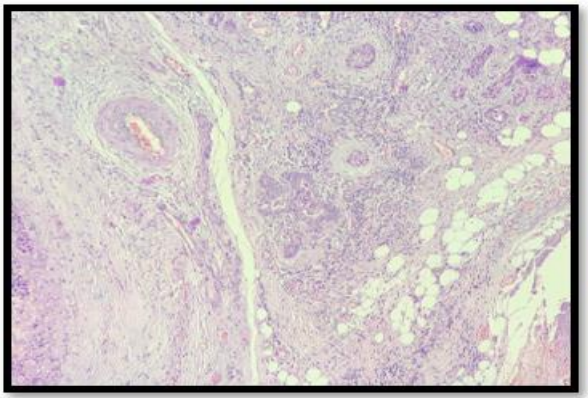

**FIGURE:3A(4X)**

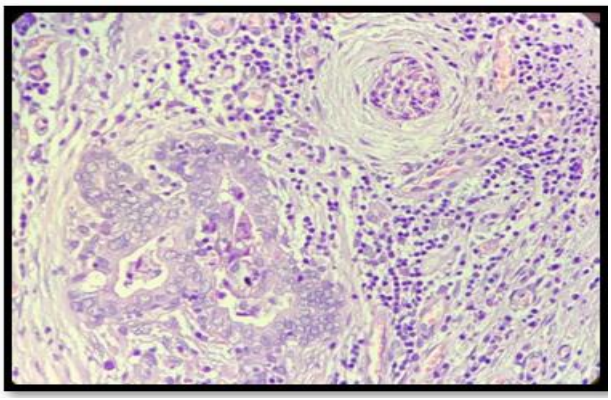

**FIGURE:3B(40X)**

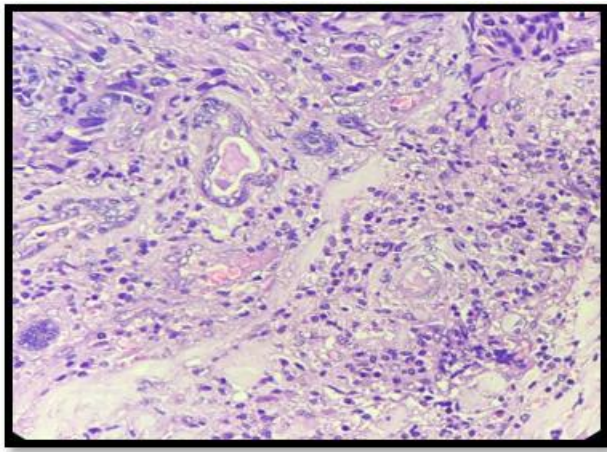

**FIGURE:3C(10X)**

**Figure 3A,3B,3C** - Malignant tumour composed of epithelial cells arranged in sheets and nests, the cells were polygonal in nature having moderate amount of eosinophilic cytoplasm, prominent nucleoli and Squamoid differentiation.There is perineural and vascular invasion noticed.

**Differential diagnosis**: Pleomorphic adenoma, Cystadenoma, Squamous cell carcinoma, Necrotizing Sialometaplasia and Clear cell tumour.

**DISCUSSION:**

Mucoepidermoid Carcinoma (MEC) is the most common malignant salivary gland tumour, accounting for 10-15% of all salivary gland neoplasms and 30% of all salivary malignancies. Tumour stage and grade have historically been important predictors of survival, noting that some high-grade mucoepidermoid carcinomas were equivocally classified as squamous cell carcinoma or as unspecified adenocarcinoma in the past. Prior to 1990, MEC represented an average of 27% of all malignant salivary tumours, whereas in studies conducted after 1990, MEC represented 45%, a twofold increase.[1]
The parotid and minor salivary glands in adults are typically affected by MEC, the most common malignant salivary gland tumour. Despite making up 30% of all salivary gland malignancies, it only makes up 10% of salivary gland tumours and less than 5% of head and neck cancers. About 50–60% of these tumours start in the major salivary glands; the parotid gland accounts for more than 80% of these tumours, followed by the submandibular gland (8–13%), the sublingual gland (2-4%), and the minor salivary glands (mostly the palate) for the remaining fraction.6- The tongue, the retromolar region,

and the buccal mucosa are other locations.The fifth decade of life has the highest prevalence of MEC, with a little female preponderance. It is more common in individuals in their fourth to sixth decades of age. A painless lump that gradually grows over several years and mimics a pleomorphic adenoma or other benign tumour is the most frequent presenting symptom. Usually in conjunction with high-grade tumours, pain or facial nerve palsy may manifest.[7]
MEC occurs most commonly in the parotid salivary but may affect other major or minor salivary glands and even originate from within bone.
A high-grade MEC tumour is identified when the epidermoid element predominates because the tumour's histological appearance may be similar to that of squamous cell carcinoma upon histological evaluation. Histologically, the MEC of the minor salivary glands is made up of three main cell types: mucous cells, squamous epidermoid cells, and poorly differentiated intermediate cells that can eventually become either epidermoid or mucous producing cells.
Alternatively, a low-grade MEC tumour is defined as the existence of mucin-producing cells within a mostly cystic structure. Less cystic and more prone to forming vast, asymmetrical nests or sheets of squamous cells, intermediate-grade tumours frequently feature a more predominant population of intermediate cells. If the epidermoid element predominates, the histologic appearance of the tumour may closely resemble squamous cell carcinoma on histologic examination, thus classifying it as a high-grade MEC tumour. Instead, the presence of mucin-producing cells in a predominantly cystic architecture is considered a low-grade MEC tumour. Interstitial tumours are less cystic and have a greater tendency to form large, more irregular nests or scaly plaques and often have a more prominent population of interstitial cells.The preferred course of treatment for minor salivary gland MECs with low to intermediate-grade is radical surgery performed alone, if possible, and involving a large local excision intraorally with sufficient margins free of tumours.[2] All the characteristic histopathological features of muco epidermoid carcinoma such as chondromyxoid stroma , arrangement of cells in sheets and nests, perineural invasion were exhibited in this case hence we came to the diagnosis of muco epidermoid carcinoma
More aggressive surgery is necessary for high-grade tumours, either with or without postoperative radiation and chemotherapy. An Intraoral approach as well as transmandibular and/or transcervical approaches are used in the surgical management of base of the tongue neoplasms. Trans mandibular techniques offer the benefit of excellent surgical site exposure; nevertheless, they can also lead to issues include the creation of extraoral scars, damage to joint components, and more traumatic access, which can result in high rates of morbidity and poor cosmetic and functional outcomes. Nonetheless, given that recurrences can take years to manifest, several experts suggested lifetime monitoring.

**CONCLUSION:**

Nevertheless, close clinical follow-up should be for lifetime because low and intermediate-grade MEC can recur many years after initial removal and also at risk of developing a secondary malignancy following the treatment.

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