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REVIEW ARTICLE

A CASE REORT OF MUCOEPIDERMOID CARCINOMA AND DETAILED DESCRIPTION

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ABSTRACT

Mucoepidermoid carcinoma is the malignant epithelial salivary gland tumor. Mucoepidermoid carcinoma shows a diverse behavior histopathologically. It resembles histopathologically with number of lesions, making a difficulty in diagnosis, merely on the basis of histopathology. As mucoepidermoid carcinoma most commonly occurs in parotid gland still this pathology shows grades, where high grade is an aggressive form and low grade favors initial malignancy. Thus a detailed histopathological study is must. The aim of this paper is to present a case report of a 26 year male patient who came with the complaint of painless swelling at the periauricular area, which was increasing in size gradually and was of soft consistency. The excision was done and sent to the pathology laboratory. Histopathology report was suggestive of various types of cells such as epidermoid cells, mucous secreting cells, intermediate cells, clear cells along with cystic spaces and mucin spillage. The final diagnosis was Low grade variant of Mucoepidermoid carcinoma of parotid gland.

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INTRODUCTION

Mucoepidermoidcarcinoma (MEC) was first described by Volkmann (OluwoleFadare *et al*., 1985). It was coined as mucoepidermoid carcinoma by Stewart in 1945 *et al*. It has miscellany in its histomorphological behavior. MEC shows blend of many cells such as maternal cells, intermediate cells, epidermoid cells, prickle cells, mucous secreting cells and clear cells. (Batsaki, 1979) But for the diagnosis purpose cells which are of high importance are epidermoid cells, intermediate cells and mucous secreting cells. (Ellis *et al*., 1991)

Case report

A male patient of 26 year came with complain of swelling in the right periauricular area since one and half year. Swelling was of peanut size and which grew to present size i.e. 2cm x 2cm x 3cm in size. Swelling was hard in consistency which was not fixed to underlying structures. Ono pain and pus discharge was there. The excisional biopsy was done and sent to the pathology laboratory. (Figure 1 and 2)

Histopathology report

A partially capsulated lesion was seen. Normal salivary gland tissue was evident suggestive of salivary gland origin. The epithelial islands are arranged in sheets, cords and islands. Epidermoid cells were squamous in shape with hyper chromatic nuclei and bizarre appearance of nuclei, mucus cells were seen with homogenous eosinophilic cytoplasm and peripherally placed hyperchromatic nuclei, few polygonal cells with clear cytoplasm and centrally placed nuclei were observed which were suggestive of clear cells. Epithelial cells were pleomorphic as epidermoid cells, clear cells, intermediate cells and mucus cells were seen. Eosinophilic coagulum and abundant cystic spaces were seen. (Figure 3 to 7)

Overall picture is suggestive of "Mucoepidermoid carcinoma".

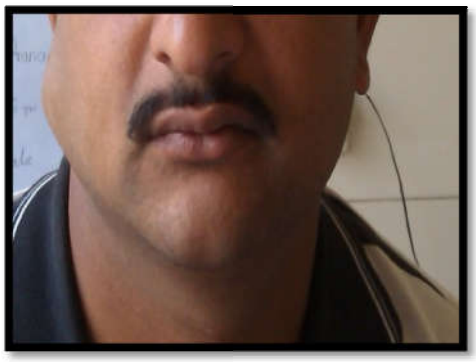

Fig. 1. Front profile-clinical photograph

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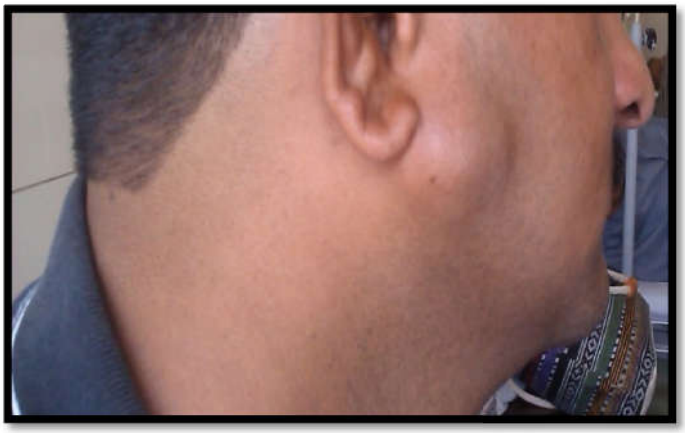

Fig. 2. Lateral profile-clinical photograph

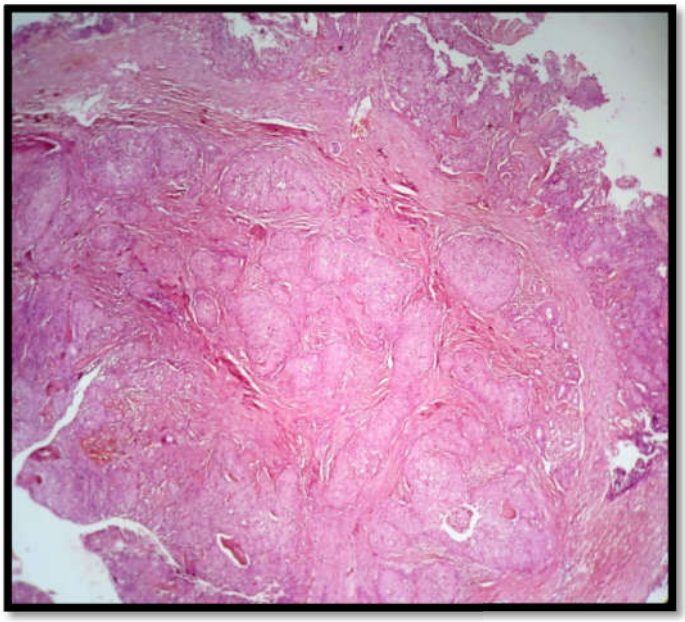

Fig. 3. Partially encapsulated lesion with epithelial islands

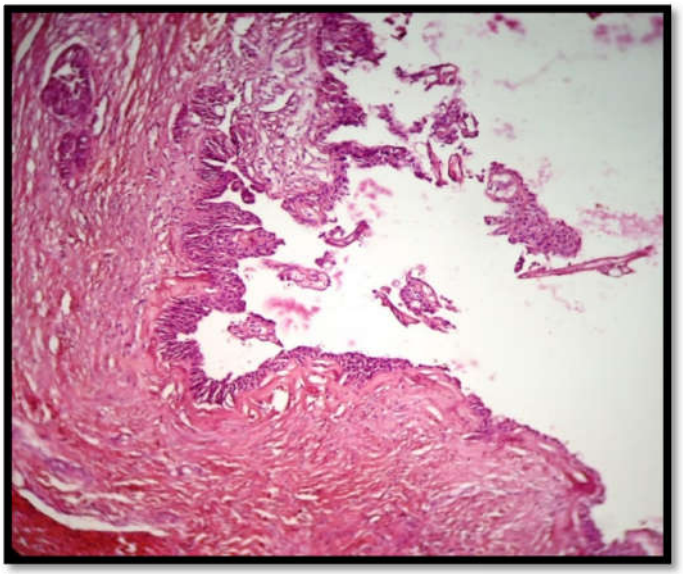

Fig. 4. Epithelial islands and dense connective tissue

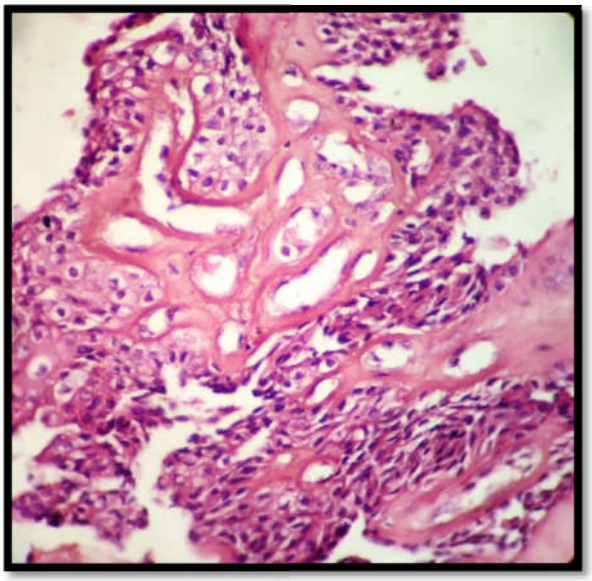

Fig. 5. Cystic spaces, epidermoid cells are evident

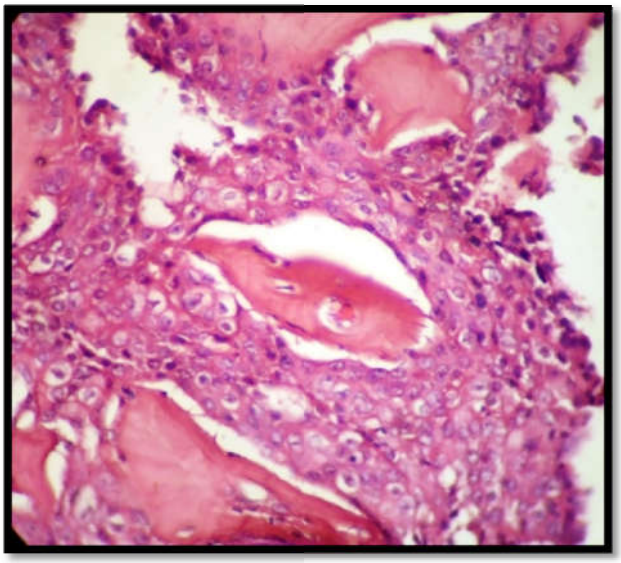

Fig. 6. Eosinophilic coagulum

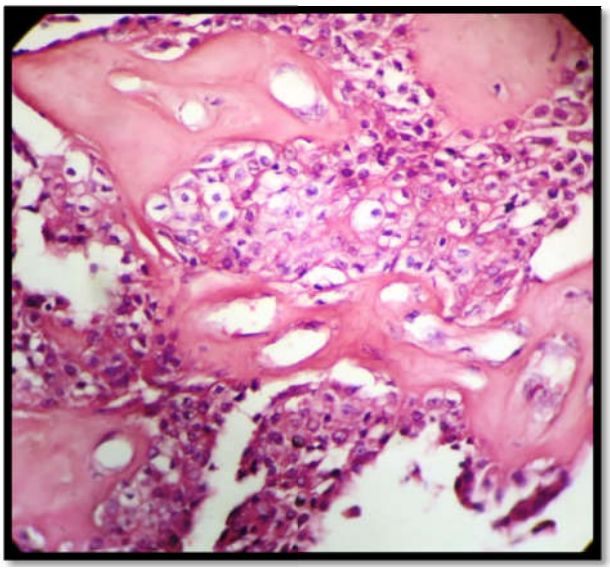

Fig. 7. Clear cells and mucous cells with cystic spaces

DISCUSSION

MEC occurs in second to eighth decade of life, the younfest diagnosis of MEC in nine month to highest diagnosis is 90 years. Localization if in case of major salivary gland, occurrence in parotid gland is about 47% and in minor salivary gland most common site is hard palate. Few of the MEC occurrences is also noted in cheeks, floor of the mouth retromolar area. Females are slightly more predominant than male in case of MEC. Symptoms seen are painless swilling with history of about 1 year. These swellings are well circumscribed and movable. Pain facialnerve paralyses all are common in high grade tumors (Irving Dardiclk, 1996). MEC is derived from the reserve cells of excretory duct. As cells of salivary gland unit are arised from surface epithelium they have the capacity to turn into squamous and to keratinize. Under various stimuli these cells can undergo squamous metaplasia or mucous meataplasia. Grading system also depend on this differentiation where if mucous cells are differentiated more than squamous it goes in the favor of low grade MEC and if squamous cell overcome the mucous cells its high-grade MEC (Batsaki, 1979). MEC is graded under three grades low grade, intermediate and high grade. Grading system is basically dependent on Histologic parameters such as cystic spaces, mucinous cells, mitoses, cytology, biologicalpotential of infiltration, recurrence rate, and metastasis and five year cure rate.

A) Low grade complies many cystic spaces macrocysts as wll as macrocysts, many mucinous cells, few mitotic figures, bland cytology, locally infiltrative, slow growing, 0-6% of recurrence, very rare metastasis and 92% of five year cure rate.

B) Intermediate grade MEC contains some cystic spaces, some mucinous cells, few mitoses, some atypia, intermediateinfiltration, 20-39% of recurrence, in some cases 20% of lymphnode metastasis, and 70-83% of five year cure rate.

C) High grade MEC contains few cysts and mucinous cells, significant pleomorphism, many mitoses, high infiltration, rapidly growing capacity, 61-78% of recurrence, metastasis is common 44-72% commonly lymph node and 33% of distant meatstasis. 22-42% of five year cure rate (Cheuk, 2nd edition).

MEC comprise cells like maternal cells, intermediate cells, epidermoidcells, prickle cells, mucinous cells, clear cells and columnar cells. Maternal cells which are round to oval small of the size of lymphocytes, with basophilic scanty cytoplasm with round and small nuclei and these cells maternal cells are the progenitor cells for all the cells present in MEC. Intermediate cells are little larger than maternal cells with scanty eosinophilic cytoplasm, small and darkly stained nuclei. Intermediate cells have the capacity to differentiate in to epidermoid cells, prickle cells, clear and mucinous cells. Epidermoid cells resemble the cells in squamous cells because of intermediate brideges and they are arrangedtogether in sheets and nests. Clear cells show variability in size and shape distic outlines and hydropic cytoplasm and centrally placed pyknotic nuclei. Columnar cells are similar to the cells found in the major secretory ducts of salivary gland. These cells get transformed in to the mucous cells. Mucous cells are large balloon shaped cells with foamy or reticular cytoplasm slightly basophilic cells where the nuclei are situated at the periphery and boundaries are distinct.Stains for mucicarmine periodic acid Schiff stain (PAS) or Sudan IV stains. (Batsaki, 1979)

Molecular genetics

The infrequent genetic loss observed at chromosome 9p21, 8q, 5p, 16q and 12p. newer studies have showed t(11:19) (q21:p12) resulted in the identification of fusion transcript resulting from the binding of exon-1 of a novel gene of an unknown function, the mucoepidermoidtranslocated gene (MEC-1), at 19p13 region with exon 2-5 of a novel member of the mastermind like gene family (MAML2) at 11q 21 region. This transcript activates the notch target genes (Goode and El-Naggar, 2005).

Immunohistochemistry

Cells in the tumor show positivity for cytokeratin. There is variability in staining of EMA (Epithelial Membrane Antigen), Carcinoembryogenic Antigen (CEA) actin and S-100 protein. (Cheuk 2nd edition)

Variants

Clear cell variant of MEC, focal spindle cell and oncocytic metaplasia seen in MEC, Sclerosing MEC (Cheuk 2nd edition), Pigmented MEC (Takeda *et al*., 2006), Central MEC (Sepúlveda, Ilson *et al*., 2014).

Differential diagnosis

Necrotizingsialometaplasia can be excluded as it shows normal glandular structure, squamous cell nests and lack of cystic spaces and intermediate cells. Cystadenoma and cystadenocarcinoma shows a typical papillary component and epidermoid component of MEC is not seen. Metastatic squamous cell carcinoma component sows absence of cells in intercellular mucin where high grade MEC has few mucocytes and positive staining for mucin Rarely pleopmorphic adenoma as it contains mucinous areas and shows mucinous metaplasia, but it can be excluded as MEC doesn't have myoepithelial component in a myxoidstroma. (Gnepp, Douglas, 2009)

In our case the all histopathological features resembledto the all above mentioned histopathologiacalcrieteria, all types of cells which are must for MEC diagnosis were seen. Though MEC is a salivary gland tumor frequently found its diagnosis and grading shows a great importance our case was of low grade and associated with parotid gland. Thus all together detailed information of hiatopathological grading and morphology of cells should be known in depth.

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