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Mucoepidermoid Carcinoma of Parotid

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Short Communication

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Abbreviations: MEC: Mucoepidermoid Carcinoma; AFIP: Armed Forces Institute of Pathology.

Short Communication

Mucoepidermoid carcinoma (MEC) is the most common malignant salivary gland tumour comprising approximately 30% of all salivary gland malignancies. It has slight predilection for females in their third to seventh decade of life. Most common site for occurrence in 50% cases is parotid amongst the major salivary glands and palate in minor salivary glands. These lesions usually present as painless swelling associated with discomfort and pressure. WHO describes MEC as a "malignant glandular epithelial neoplasm characterized by mucous, intermediate and epidermoid cells, with columnar, clear cell and oncocytoid features". The proportion of different cell types and their architectural configuration (including cyst formation) varies in and between tumours. They can have multicystic to solid component, the proportion of which plays an important role in deciding the grade of tumour. The cystic spaces are lined by mucous cells which are large, with pale foamy cytoplasm and peripherally displaced nuclei, constituting less than 10% of the tumour. Intermediate type cells are found admixed with epidermoid cells or mucous cells. The intermediate cells range from small basal cells with scanty basophilic cytoplasm to larger and more oval cells with more abundant pale eosinophilic cytoplasm that appears to merge into epidermoid or mucous cells. Clear, columnar and/or oncocytic cell populations may be present and occasionally are prominent [1-3].

MEC is frequently associated with a t (11; 19) (q14-21; p12-13) translocation that creates a CRTC1-MAML2 fusion gene. The CRTC1/3-MAML2 fusion is highly specific for MEC. The t (11;19) translocation is occasionally the sole cytogenetic alteration in MEC salivary gland tumors and is also detected in non-salivary gland MEC–like tumors throughout the body, suggesting that the acquired CRTC1-MAML2 fusion is an early core event in MEC pathogenesis.

Many histopathological grading systems have been proposed to grade MEC but none is universally accepted. The Armed Forces Institute of Pathology (AFIP) grading system is a quantitative system [4-5].

Criteria used are as follows:

1. Intracystic component less than 20%- 2
2. Neural invasion – 2
3. Necrosis – 3
4. 4 or more mitoses – 3
5. Anaplasia -4

Grade

1. Low grade 0-4
2. Intermediate grade 5-6
3. High grade 7 or more

In the present case, the patient is a male in his fourth decade of life who presented with the complaint of a painless swelling in right parotid region. MRI T2 weighted images were performed which revealed a soft tissue mass lesion involving the superficial lobe of right parotid gland with ill-defined borders. The patient underwent incisional biopsy and the tissue was submitted for histopathological examination. The haematoxylin & eosin stained sections revealed infiltrative tumor composed of solid and cystic areas comprising of squamoid cells, mucous cells and intermediate type cells. No perineural invasion or necrosis was identified. The final diagnosis of Mucoepidermoid carcinoma- intermediate grade was made. The score according to AFIP grading system was 5 (Intracystic component less than 20%- 2 and 4 or more mitoses – 3). The patient was planned for PET-CT which showed no distant metastases. The patient had been advised for radical nerve sparing parotidectomy. Most patients have a favourable outcome. In the submandibular gland low-

grade tumours tend to behave more aggressively compared to similar grade tumors in minor salivary glands or parotid gland (Figure 1A, 1B) (Figure 2A, 2B).

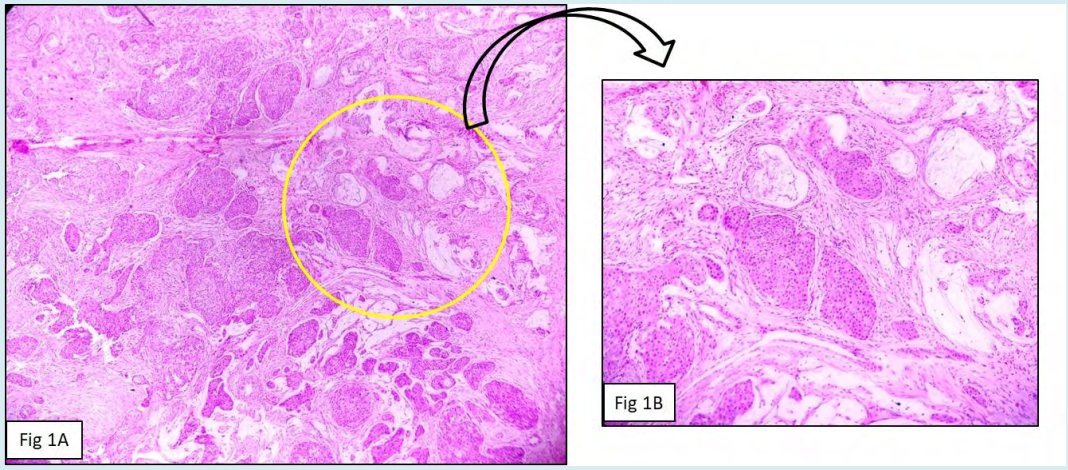

Figure 1: A. Photomicrograph showing solid cystic tumor. (HE-40x); B: Photomicrograph showing tumor composed of cystic areas with mucous cells, nests of squamoid.

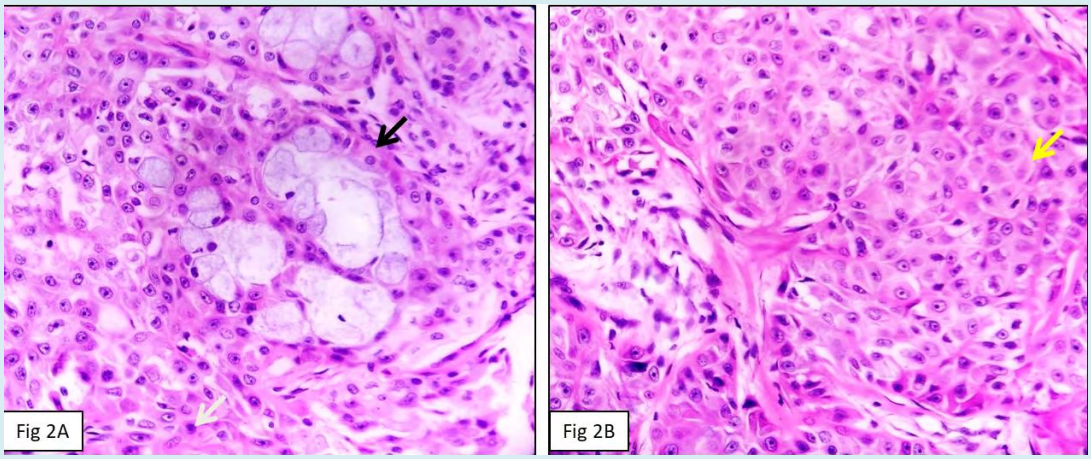

Figure 2: A: Photomicrograph showing cluster of mucin producing mucous cells with foamy cytoplasm (black arrow) admixed with intermediate type cells (white arrow). (HE-400x); B: Photomicrograph showing nests of squamoid cells (yellow arrow). (HE-400x).

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