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Mucoepidermoid Carcinoma

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Abstract: ***Salivary gland tumors are clinically diverse group of neoplasms, of which pleomorphic adenoma and mucoepidermoid carcinoma (MEC) are most common benign and malignant tumors, respectively. Besides the major salivary glands, these tumors can affect the minor salivary gland tissues in the posterior part of the hard palate. Minor salivary gland tumor accounts for about 15% of all the salivary gland neoplasm, of which MEC accounts to about 35.9%. MEC appears as asymptomatic swellings and shows a variety of biological behaviors and variable natural history.***

Keywords: Epidermoid cells, Intermediate cells, mucous cells

1. Introduction

Mucoepidermoid carcinoma is a malignant epithelial tumor, first studied and described as a separate entity by Stewart et al. in 1945. [1] As the name implies, the tumor is composed of both mucus - secreting cells and epidermoid type cells in varying proportions. Columnar and clear cells are also seen, and often demonstrate prominent cystic growth. It is the most common malignant neoplasm observed in major and minor salivary glands. [3] [6] [7] [8] Mucoepidermoid carcinoma represents 29% - 34% of malignant tumors originating in both major and minor salivary glands. This carcinoma of salivary glands accounts for 5% of all salivary gland tumors. The parotid gland is the most common site of occurrence. [9] Intraorally, mucoepidermoid carcinoma shows a strong predilection for the palate. [2]

2. Etiology

Etiology of MEC is not known but prior exposure to ionizing radiation can be considered as a contributing factor since cases of MEC have been recorded after radiation therapy for thyroid carcinoma or leukemia. Tobacco either in chewing or smoking form has not been implicated as a causative factor of MEC. [10]

3. Clinical Features

MEC is believed to arise from pluripotent reserve cells of excretory ducts that are capable of differentiating into squamous, columnar, and mucous cells. [10]

MEC occurs with a slight female predilection. It occurs primarily in the third or fifth decades of life, with an average age of 47 years, but can occur in virtually all decades. It is the most common malignant salivary gland tumor in children. [1]

The most common site of its occurrence is parotid gland followed by the palate, retromolar area, and buccal mucosa. Mucoepidermoid Carcinoma of the lower lip is of rare occurrence. [11]Among minor salivary glands, the tumor shows predilection to the hard and soft palate. MEC of the hard palate presents as a slow - growing, persistent, painless swelling which is soft in consistency. However, pain and pus discharge may be seen in lesion with secondary infection. Ulceration, resorption of underlying bone, numbness of adjacent teeth, tooth mobility, root resorption, and indurated/firm mass are the symptoms of advanced disease.

Late diagnosis causes extensive spread, with possibility of perforation of the hard palate and invasion into maxillary antrum or nasal cavity. [2]

Histopathological Features

Histologically, mucoepidermoid carcinoma have been categorized into one of three histopathologically based on the amount of cyst formation, degree of cytologic atypia, relative numbers of mucous, epidermoid and intermediate cells.

Low- grade tumors show prominent cyst formation, minimal cellular atypia and high proportion of mucous cells.

High - grade tumors consist of solid islands of epidermoid and intermediate cells. They also demonstrate considerable pleomorphism and mitotic activity. Mucous producing cells infrequent, difficult to distinguish from squamous cell carcinoma.
Intermediate grade fall between low and high grade. Cyst formation occurs but less prominent than low grade. All 3 major cell types will be present, but intermediate cells predominate. Cellular atypia may or may not be present. [1] [10]

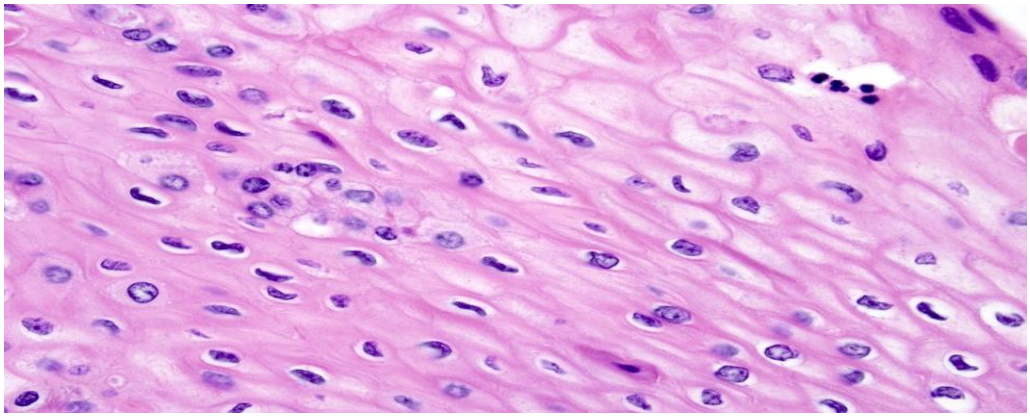

Figure 1: Epidermoid Cells

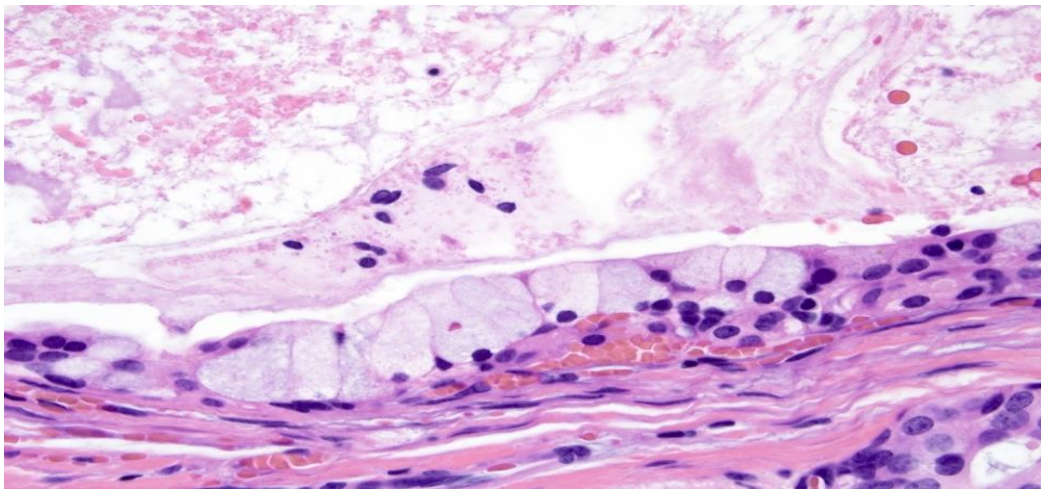

Figure 2: Mucous Cells

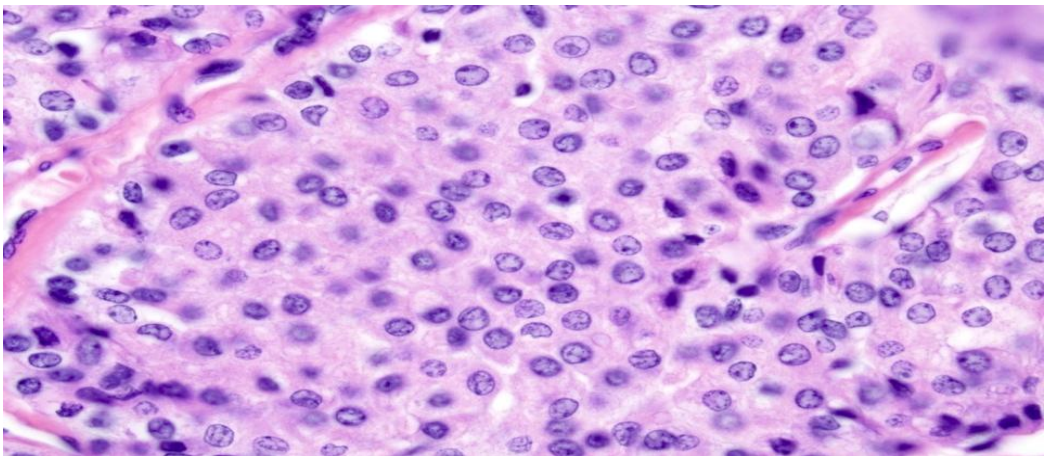

Figure 3: Intermediate Cells

Management

Moraes *et al*. suggested that low to intermediate - grade MECs originating from intraoral minor salivary glands can be managed by wide local surgical excision that ensures tumor - free surgical margins.

If there is no evidence of bony involvement the tumor should be dissected down to the periosteum. If there is any evidence of periosteal involvement or bone erosion, removal of the involving bone is indicated. High - grade tumors require more aggressive surgical approach with postoperative radiotherapy and chemotherapy. [4]

Low - to intermediate - grade MECs originating from intraoral minor salivary glands has a very low recurrence rate (<10%) and a high survival rate (90%). Low and intermediate grade MECs have an indolent clinical course and a rare chance for metastasis. Radical neck dissection is indicated if clinical evidence of metastasis. Prognosis depends on grade and stage of tumor. [5]

A close clinical follow - up should be for lifetime because low and intermediate grade MEC in this age group can recur many years later.

4. Conclusion

General physicians and dental practitioners may be the first health - care provider to examine the patients with palatal lesions, presenting as non - healing ulcer or swelling. Detailed knowledge of MEC will lead to its early detection and prompt treatment, thus reducing postoperative morbidity and better prognosis of patients.

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