Unusual Presentation of a Huge Mucoepidermoid Carcinoma – A Case Report

Abstract: Amongst all the carcinoma, malignant neoplasm of major salivary glands, Mucoepidermoid carcinomas holds the most common malignant neoplasm comprising of approximately 15.5% of all the cases. It most commonly involves the parotid gland. It usually occurs in middle- aged people with slightly female predilection. Mandible is more commonly involved as compared to the maxilla. Treatment modalities mainly depends on the severity and grade of the tumor as well as the adequacy of resection. The purpose of this case report is to emphasize the clinical features, radiographic features, diagnosis and the treatment modalities of Mucoepidermoid carcinoma.

Key-words: MEC, Parotid gland, Malignant neoplasm

Introduction:

The term "Mucoepidermoid carcinoma" was coined by Stewart et al in the year 1945. This salivary gland neoplasm comprises of 2 different types of cells including Epidermoid and mucus producing cells. Often a third type of cell ie; Intermediate cell is also present which is neither epidermoid nor mucus type.[1,2] MEC comprises of 30% of all salivary gland tumors. It commonly involves the parotid gland. Apart from Parotid gland, it also occurs in the palate. Most of the cases of MEC involves the major salivary glands. Parotid gland is the site for approximately 80% of cases,Submandibular gland for 8-23% of cases and sublingual gland for 2-4% of the cases.[3,4,5,6] It usually occurs in 4th decade of life with slight female predilection. Treatment method and prognosis of the lesion depends on various factors such as location of the lesion, clinical stage, histologic grade as well as the severity of the lesion.[7,8]

Case report:

A 40-year-old male patient reported to our clinic with a chief complaint of pain and swelling in the left pre-auricular region for 6 months. The patient mentioned that he noticed pain for the first time in the left pre-auricular area, 6 months back. He has taken analgesics at that time on his own. He also mentioned that he noticed a small growth in the left pre-auricular area 3 months ago which was small pea-sized at that time. He didn't consult any oral physician at that time as that growth was painless in the beginning. Then he noticed a gradual increase in the size of the growth and attained the present size. The patient's medical history and family history were not relevant. As per his statement, he had a habit of chewing smokeless tobacco (Khaini) and smoking bidi for 15

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Received : 6 April, 2024, **Published :** 31 Dec., 2024

Access this article online

Website: www.ujds.in

Quick Response Code

DOI: https://doi.org/10.21276/ujds.2024.10.4.11

How to cite this article: Arpan Manna. (2024). Unusual Presentation of a Huge Mucoepidermoid Carcinoma – A Case Report. UNIVERSITY JOURNAL OF DENTAL SCIENCES, 10(4).

years with a frequency of 10 times/ day. A general clinical examination revealed restricted mouth opening. On extra-oral examination, an exophytic growth was seen in the left pre-auricular area, measuring approximately 77x50mm and extending in the left parotid space (Fig 1.a & 1.b). On palpation, the growth was non-tender, non- fluctuant and hard in consistency. Multiple tender lymph nodes were noted on the right side of the face and neck region. On palpation, submandibular and cervical lymph nodes were palpable and tender (approx. 4cm in diameter) and were bony hard in consistency and fixed to the skin.

The intraoral examination revealed a ulcero- proliferative growth on the left alveolus involving the floor of the mouth, measuring approximately 3x4 cm and was erythematous along with a white keratotic appearance.

For investigation, CT scan and FNAC were advised. After correlating all the clinical findings and habit history, the provisional diagnosis was made as "Malignancy of the Parotid gland". CECT neck with face with 3D reconstruction scan revealed a large heterogeneously enhancing ulceroproliferative mass lesion in the left masticator space involving the gingivobuccal sulcus. There is gross erosion of the alveolar process of the mandible on the left side. Symphysis menti was also eroded. The lesion showed intraoral extension with loss of fat plane with a base of the tongue and lateral border of the tongue on left side. Anteriorly, the lesion had extended into the buccal space with the involvement of the left masseter and temporalis muscle. The central area of degeneration with ulceration and he has densities are seen within the mass lesion. The lesions measure approx. 9 × 8 cm. Enlarges right-sided level II, level I b lymph nodes are seen (Fig. 2.a, 2.b & 2.c). FNAC from left parotid swelling revealed Low- grade Mucoepidermoid Carcinoma of left Parotid gland.

The mucous membrane shows a high number of malignant epithelial cells and small groups and clusters with the tendency of mucin formation. Individual cells are showing mild to moderate vacuolated cytoplasm and enlarged hypochondric nuclei with prominent nucleoli. (Fig. 3.a, 3.b & 3.c) Information was suggestive of low-grade mucoepidermoid carcinoma of the left parotid gland.

The final diagnosis of "Low-grade Mucoepidermoid carcinoma" was confirmed based on the biopsy report.

Fig 1. a. & b. An exophytic growth in the left pre- auricular area, measuring approximately 77x50mm extending in the left parotid space.

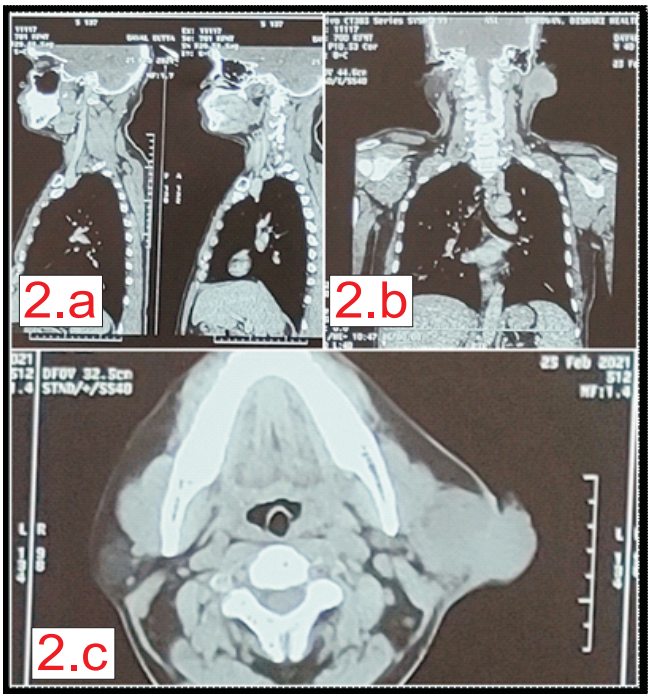

Fig 2. a., b., & c. Sagittal, coronal and axial sections show a large heterogeneously enhancing ulceroproliferative mass lesion in the left masticator space involving the gingivobuccal sulcus.

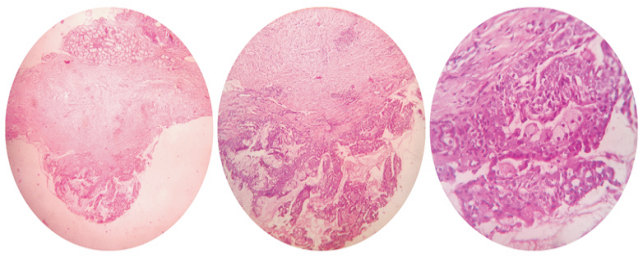

Fig. 3.a Low-grade-mucoepidermoid-carcinoma showing glandular-spaces-with-mucous-secreting-cells.

Discussion:

The most common malignant carcinoma of the salivary gland is said to be the MEC. The parotid gland is the most commonly affected among all the major salivary glands. The most common intraoral site of involvement is the posterior palate. MEC usually occurs in adults with a slight female predilection.[9,10,11,12,13]

The pathogenesis of MEC is not exactly known but many theories are given on its origin in certain literature. Some of the literature suggests its origin from a) ectopic entrapment of salivary gland tissue remnants within the bone, b) Transformation of mucus cells found in odontogenic cysts c) Maxillary sinuses or submucosal and mucosal glands with intraosseous extension.[14] Classification of MEC is done on the basis of the degree of cyst formation, the proportion of cell types and the presence or absence of cytomorphologic atypia as low-grade, intermediate grade and high-grade. Low-grade MEC represents as highly differentiated neoplasm with a predominance of macro and microcystins. The presence of intermediate and mucin-producing cell is seen. Cellular atypia is minimum. In the Intermediate grade, the presence of intermediate cells are seen in dominance. Mucin-producing cells and islands of epidermoid cells are also seen. High-grade MEC represents as a poorly differentiated neoplasm with a predominance of Intermediate and Epidermoid cells in solid blocks. Mucin-producing cells are also present along with nuclear pleomorphism and mitotic activity.[15]

The diagnosis of MEC can be done under the following criteria- 1) Radiological evidence of bone destruction 2) Presence of intact cortical plate 3) Histological confirmation 4) Positive mucin staining 5) Absence of primary lesion in the salivary gland. 6) exclusion of an odontogenic tumor. [16,17] The aggressiveness and biological behaviour of MEC can be measured by "Cell proliferation" which proves to be the most important criterion. The grade of malignant behaviour of MEC is seen to be increasing with increasing proliferating cell nuclear antigen expression. On the other hand, mucin expression patterns also play an important role in diagnosis and prognosis purposes. Cell surface of MEC contains mucins. MUC-1 is said to be related to aggressive tumors and shows a poor prognosis while MUC-4 shows greater cellular differentiation and a better prognosis.[18,19,20]

Treatment of MEC depends upon the severity of the lesion. The most common treatment plan includes surgical resection along with adequate removal of normal margins of surrounding tissues. Normal margins should be removed as the recurrence rate is much higher with positive margins. If bone is invaded by the tumour, reconstruction must be planned as a part of treatment. Radiotherapy is suggested for high-grade tumours. MEC shows a higher recurrence rate with high-grade tumours. The recurrence rate for high-grade tumours is 75% and that of low-grade tumours is 10%.[21,5]

Conclusion:

MEC can be present with various diverse characteristic features because of its wide range of biologic behavior based on histology. MEC presents as a unique tumor as it shows characteristics ranging from small tumors that can be treated by surgery alone to large aggressive neoplasms that shows invasion, metastasis as well as recurrence. The patients of MEC should be followed- up properly in order to decrease the cases of recurrence, despite of any treatment modality used.

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