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Mucoepidermoid carcinoma of the palate: A case series

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ABSTRACT:
Salivary gland tumours accounts for almost 5% of head and neck malignancies. Minor salivary gland tumours constitute 10–15% of all salivary gland neoplasms and are usually malignant. The second most common minor salivary gland tumour (12–40% globally) is mucoepidermoid carcinoma. Mucoepidermoid carcinoma is usually found in the parotid gland. However, the palate is a frequent site when it occurs in the minor glands. Here we are presenting three cases of mucoepidermoid carcinoma, all of which was present in the palate.

KEYWORDS:
Mucoepidermoid carcinoma(MEC), Minor salivary gland neoplasms, palate, necrosis, intermediate cells, epidermoid cells.

I. INTRODUCTION:

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. Minor salivary gland tumor accounts for about 15% of all the salivary gland neoplasm, of which MEC accounts to about 35.9%[1]. About two-third of MEC arise within the parotid gland, and one-third develops within the minor salivary glands. When it develops in minor salivary glands, it can be located on the palate, retromolar area, floor of the mouth, buccal mucosa, lips, and tongue[2]

Mucoepidermoid carcinoma (MEC)is a malignant salivary gland tumor that arises from the pluripotent cells of the excretory duct. It was first reported by Massao and Berger in 1942 and first described as a separate pathological entity by Stewart et al. in 1945[3] MEC occurs most frequently in adults. Females are more commonly affected than males, in a ratio of 3:2. It occurs more commonly in the third to sixth decade of life

The MEC in minor salivary glands are usually slowly developing lesions which are asymptomatic with a history lasting from 1½ to 10 years. The most common complaint is a painless swelling in the mouth (60%). Clinically, MEC may manifest as a lesion of color ranging from blue to red or purple. Histopathologically, it is classified into three grades;low, intermediate and high, with low grade (48%) being more common than high grade (38.7%) and intermediate grade (13.3%) least common[4].These three histopathological grades are based on degree of cytological atypia, amount of cyst formation, and relative numbers of mucous, epidermoid and intermediate cells[4].The tumor of low-grade malignancy usually appears as a slowly enlarging painless mass which simulatespleomorphic adenoma. Because of their tendency to develop cystic areas, these intraoral lesions may bear close clinical resemblance to the mucous retention phenomenon or mucocele. Low-grade MEC at times misleads the clinician because of its atypical location and innocent appearance[5]

Case no:1

A 49year old lady reported to the OPD with a swelling on the left side of the palate. According to the patient, swelling was present for about 13 years. She noticed increase in size of the swelling for the past 4-5 months. Patient had no othercomplaint, except for the increase in the size of the swelling. On examination a swelling of size 3x 2.5x1 cm, from 24 to 27 regionextending over the edentulous alveolar crest of 26 noted. Swelling was smooth, cystic in consistency, had a bluish hue,not crossing the midline. OPG revealed bony erosion in the region of 26. CBCT showeddestruction of the palatal cortical plate [Figure 1.1]. Histopathology showed sheets of epidermoid cells interspersed with mucous cells. Multiple cystic spaces also noted. Hyalinisation of the stroma seen in manyareas[Figure:1.2].Based on histopathologicfindings, diagnosis of Mucoepidermoid carcinoma was given.

Patient was referred to RCC for further treatment where she underwent wide excision of the lesion and is undergoing regular followup.

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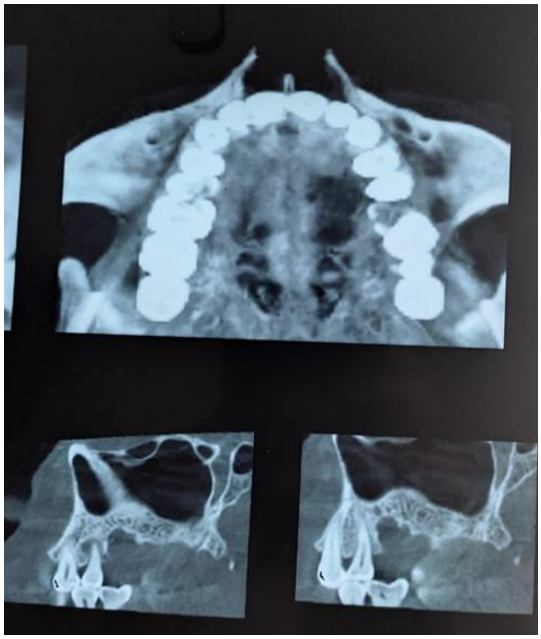

Figure: 1.1
CBCT showing destruction of the palatal cortical plate.

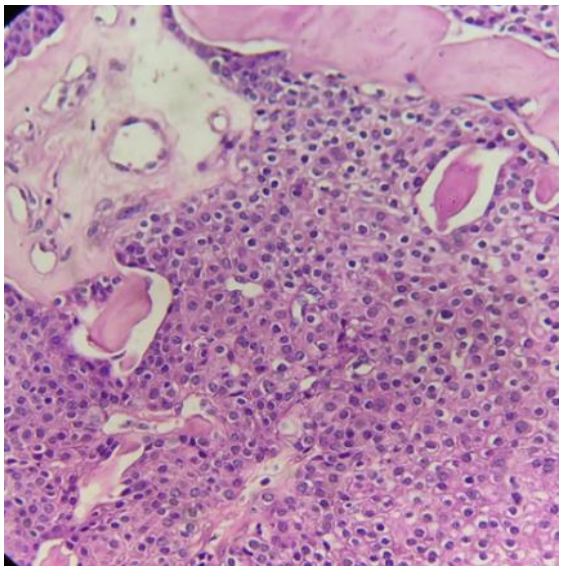

Figure: 1.2
Histopathology showing sheets of epidermoid cells interspersed with mucous cells. Hyalinisation of the stroma seen in many areas

Case no: 2

31year old male patient reported with a swelling on the palate of one month duration.He had pain on touching the swelling.On examination a small well-defined swelling of 2x2cm noted on the right half of palate, medial to 16. It was firm, tender and immovable.No induration noted. [Figure2:1] Radiograph appeared normal. Histopathology revealed cystic spaces lined by mucous cells, epidermoid cells and goblet cells [Figure 2:2]. Cystic spaces were occupied by solid collection of mucous cells, intermediate cells and epidermoid cells. Epidermoid cells were the predominant population. Numerous duct like spaces with eosinophilic substance within the lumen also seen. Areas of necrosis seen in some cystic spaces. Histopathology confirmed the diagnosis of mucoepidermoid carcinoma. This patient was referred from RCC.So patient went back to RCC. Underwent wide surgical excision and is under follow up. No recurrence till date.

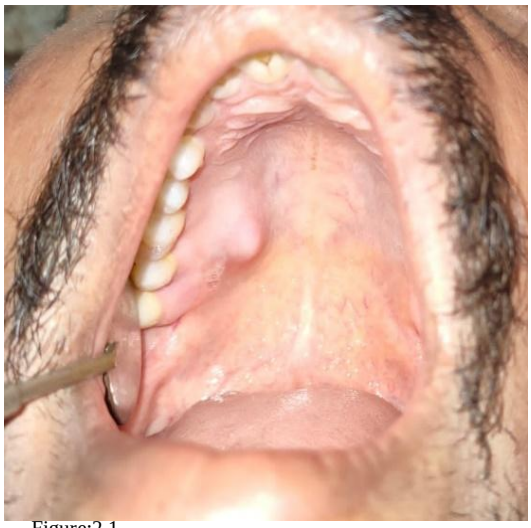

Figure:2.1 Swelling on the right half of palate

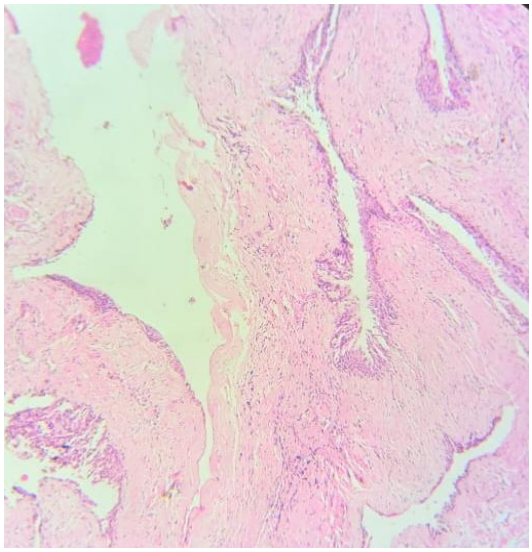

Figure 2:2 Cystic spaces lined by mucous cells, epidermoid cells and goblet cells

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Case no: 3

39 years old male patient reported with a complaint of growth inside the mouth for 2 months. There was no pain or difficulty in swallowing. It was noticed by the dentist on routine dental checkup.

On examination an oval shaped swelling was found on the soft palate near the midline. It was firm, nontender and cystic in consistency. Overlying mucosa appeared normal. Histopathology showed tumor cells proliferating in the form of islands, sheets and clusters. Most of the islands hadatypical mucous cells and intermediate cells with some epidermoid cells. Numerous clear cells were also seen. Patient underwent surgical excision at RCC and is under follow up

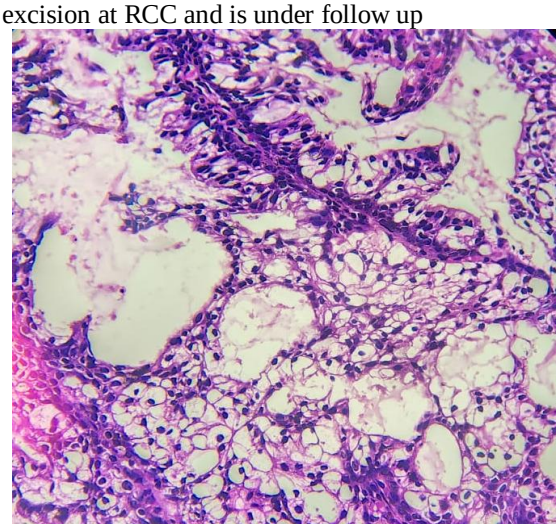

Figure:3.1
Atypical mucous cells and intermediate cells with some epidermoid cells

II. DISCUSSION:

Salivary gland neoplasms account for approximately 5% of head and neck neoplasms, but fewer than 1% of malignancies in all body sites. However, despite their rarity, these carcinomas represent a highly diverse range of histological subtypes. Of these, mucoepidermoid carcinoma (MEC) is the most common, representing 30% to 40% of all salivary gland malignancies and up to 50% of parotid malignancies. MEC shows a wide, nearly uniform age distribution, with diminution in paediatric and geriatric life[7].Females were more affected (54.5%) and the average age was 48.8 years[8]. In our case series, one female and two male patients were included. Here we included only the palatal lesions. The patients in this case series belongs to 4th and 5th decade. Histologically, MECs are classified into low, intermediate, and high grade. Low grade tumors commonly develop a nesting pattern with multiple well circumscribed squamous nests containing numerous clear cells. Intermediate grade tumors are less cystic and show a greater tendency to form large sheets of squamous cells and often have a more prominent intermediate cell population. High grade tumors are predominantly solid, with greater degrees of atypia[9]. In one of our cases, predominant cell population was epidermoid cells. There were cystic spaces as well.

Auclair et al[10] studied the grading criteria of minor salivary glands MECs. The histopathological features that indicated high-grade behaviour were:

- an intra-cystic component of< 20% (+ 2 points)
- four or more mitotic figures per 10 high power field (+ 3 points)
- neural invasion (+ 2 points)
- necrosis (+3 points)
- cellular anaplasia (+ 4 points).

According to this grading scale, tumours with a:

- score of 0-4 were considered low-grade
- scores 5-6 were considered intermediate (between low grade and high-grade)
- scores≥7 indicated highly aggressivebehaviour.

None of our cases shown neural invasion. In one case tumour islands were seen in close proximity to peripheral nerves and blood vessels. Areas of necrosis noted in one case. Mitotic figures were also few in number in these cases. Duct like spaces noted in all cases, with some of them having eosinophilic coagulum.

The standard treatment for all grades of MEC is surgical resection[11]. The treatment of choice for MECs of minor salivary glands with low to intermediate-grade iswide local excision, if it can be achieved, with adequate tumour-free margins. High grade tumours require more aggressive surgery with or without postoperative radiotherapy and chemotherapy. Management of the neck and the need to assess it during long-term follow-up of MEC has been emphasised[12].

III. CONCLUSION:

MEC is a rare tumour of salivary glands, palatal lesions are even rarer. Low and intermediate grade tumours have a favourable outcome compared to high grade MECs. High grade cases have a tendency to recur and metastasise. So early diagnosis and prompt treatment is required to decrease the morbidity and mortality rates. Surgical excision is the first line treatment. Adjunct radiotherapy and chemotherapyare done in cases with positive resection margins.

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