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MUCOEPIDERMOID CARCINOMA OF THE HARD PALATE: A CASE REPORT

Oral Pathology

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ABSTRACT

Salivary gland neoplasms are a part of clinically diverse group of tumors, of which pleomorphic adenoma and mucoepidermoid carcinoma (MEC) are the most common benign and malignant tumors, respectively. Minor salivary gland tumor accounts for about 15% of all the salivary gland neoplasm. MEC appears as an asymptomatic swelling initially with varied biological behavior and variable history. This article reports a case of mucoepidermoid carcinoma involving the hard palate. The lesion was treated by wide surgical excision with a regular follow-up and no recurrence was noted.

KEYWORDS

Mucoepidermoid carcinoma, Salivary gland neoplasm, Surgical excision

INTRODUCTION

Mucoepidermoid carcinoma (MEC) is a malignant salivary gland tumor that arises from the pluripotent cells of excretory duct. It was first reported by Massao and Berger in 1942 and was described as a separate pathological entity by Stewart et al. in 1945. [1] The WHO in 1990 classified it as a malignant neoplasm and hence named it as Mucoepidermoid Carcinoma.[2]

Salivary gland tumors represent a heterogeneous group of neoplasms with complex pathologic characteristics and distinct biological behavior. They account for 3% to 10% of all head and neck tumors. [3] The annual incidence of malignant tumors of the salivary glands is estimated to be between 0.4 and 2.6 cases per 100,000 population.[4] The evaluation and management of minor salivary gland malignancy is an intellectually stimulating discipline because of the tremendous diversity of histological subtypes, each with its own biological behavior, and the wide range of tumor locations, each with its own nuances in terms of diagnosis, treatment, and prognosis. [5]

CASE REPORT:

A 58-year-old male reported to our center with a painless swelling on the palate since 3 years. The patient was a known diabetic and was on oral hypoglycaemic agents. Extra oral examination was insignificant and lymph nodes were not palpable. The swelling was moderately painful and had gradually increased over 3–4 months with concomitant pus discharge.

On intraoral examination, a swelling was noted in the hard palate on the left, not crossing the midline, approximately 3 cm × 2 cm in size with an unbreached overlying mucosa (Figure 1a). On palpation, the lesion was non tender and firm in consistency with regular smooth borders and no discharge on compression. The patient was completely edentulous and a denture wearer since 3 years. On radiographic evaluation (Computed Tomography), a well defined radiopaque densification could be seen along the hard palate on the left. (Figure 1b) A surgical treatment plan of excision biopsy keeping a 2mm margin was devised. The lesion was surgically excised using electrocautery. (Fig 2a) A single tissue bit measuring 3 cm × 3 cm × 1cm, oval in shape, brownish-white in color and firm in consistency with a smooth surface was excised and sent for histopathological examination. (Fig 2b) The denuded area of palate was allowed to heal with due post operative dressing and prosthesis.

Microscopically, large cystic spaces with foci of prominent cellular areas consisting of heterogeneous cellular population could be seen. It was mainly composed of mucous, few epidermoid, intermediate and clear cells. Large mucous-pooled cystic areas lined by mucous cells were appreciated as well. (figure 3) Few hemorrhagic areas and adjacent large foci of normal mucous acini were evident. The cystic spaces and cellular component were surrounded by thick fibrocapsular tissue and covered by parakeratinized stratified squamous epithelium. The features were suggestive of low to intermediate grade of Mucoepidermoid Carcinoma (MEC) with tumor free borders.

The patient was recalled for religious follow ups, further radiographic investigations with no evidence of recurrence.

DISCUSSION

Mucoepidermoid carcinoma is the most prevalent malignant tumor among all the salivary gland neoplasms. It is commonly seen in the third to sixth decade of life with a female prediliction. The most common site of occurrence is the parotid gland.[6] The palate is the most common location for benign and malignant minor salivary gland neoplasms, with approximately 50% of the tumors representing malignant disease.[3] Salivary tissue is located within the submucosa and therefore most palatal salivary gland malignancies begin as a nonpainful, slowly enlarging, submucosal mass. Eventually, ulceration, bony invasion, resorption of underlying bone, numbness of adjacent teeth, tooth mobility, root resorption and nerve involvement may occur. Pain is an ominous sign since it is associated with perineural invasion and should be considered to indicate malignancy until proved otherwise.[7]

Possibility of perforation of the hard palate and invasion into maxillary

antrum or nasal cavity exists. Etiology of MEC is unknown but prior exposure to ionizing radiation can be a contributing factor since there have been evidences of the disease post radiation therapy for thyroid carcinoma or leukemia. Tobacco, in any form, has not been implicated as a causative factor for the same.[8]

Histopathologically, the tumors are regarded as low, intermediate and high grade. A low-grade MEC presents as a slow-growing swelling with a characteristic size of < 3cm. The neoplasm shows predominance of mucous-secreting cells. They are partially encapsulated and contain cystic spaces filled with mucin, lined by mucus-secreting, intermediate, and epidermoid cells, whereas the high-grade tumors predominantly consist of epithelial cells, with few mucinous cells. These are rapid-growing tumors and have a tendency of local tissue invasion in early stages. In long-standing cases, distant metastasis to lungs is observed with an unfavorable prognosis.[6]

Treatment of mucoepidermoid carcinoma depends upon its extent of its spread. When the tumor is confined to the palatal mucosa with intact periosteum, wide excision of lesion along with underlying mucoperiosteum is advised.[9] When the tumor infiltrates the periosteum with erosion of underlying bone, excision of lesion along with the underlying bone is indicated. If the lesion is restricted to the alveolar region, alveolectomy is performed. This consists of removal of the affected alveolus and a limited portion of the maxilla. Failure to detect lesion in its early stage leads to involvement of overlying maxillary sinus and the nasal cavity, requiring more extensive surgeries. The latter requires an extraoral approach and need for further reconstructive surgery for the oral defect.[9]

The most common malignancy of the palate is adenoid cystic carcinoma, closely followed by mucoepidermoid carcinoma. MRI is of value in delineating the extent of deep and larger tumors. Treatment principles for palatal minor salivary gland malignancy involves surgery and, in specific circumstances, this may include neck dissection or postoperative radiation Despite advances, the benefit of chemotherapy for salivary malignancy remains questionable. A standard approach to treat the primary site with postoperative radiation regardless of margin status should be followed.[7]

CONCLUSION

Malignant salivary gland tumors of the head and neck region may occur at a variety of anatomic sites and varied histopathologic diagnosis. General physicians and dental practitioners may be the first line of health-care providers to deal with such kind of presentations. Detailed knowledge of the disease shall be useful in early detection and prompt treatment resulting in a better prognosis and diminished postoperative morbidity.[9]

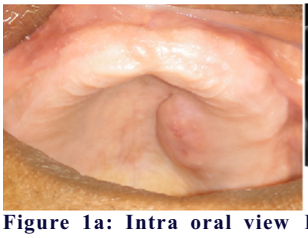

Figure 1a: Intra oral view showing a swelling in the left posterior area of the hard palate, not crossing the midline, approximately 1.5 cm × 2 cm in size.

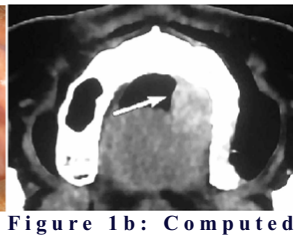

Figure 1b: Computed Tomograph shows a radiopaque densification along the hard palate on the left.

Figure 2a: Excision biopsy keeping a 2mm margin

Figure 2b: The excised specimen

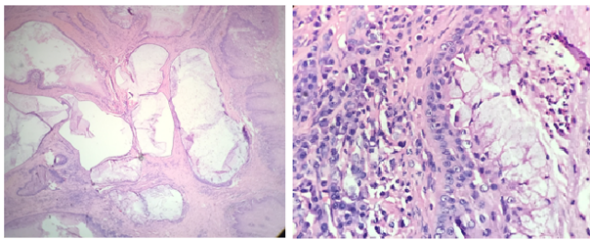

Figure3: Histopathological slide suggesting mucoepidermoid carcinoma
3a: Mucous filled cystic spaces
3b: Mucous, epidermoid and intermediate cells

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