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Students' Corner
Case Report

Mucoepidermoid Carcinoma of the base of tongue

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Abstract

Mucoepidermoid carcinomas are thought to arise from the reserve cells of salivary gland ducts. Minor salivary glands are located all around the oral cavity and base of the tongue; however few cases of MEC of the base of the tongue have been reported in literature and no guidelines are available for its management. Here we would like to present the case of a 71 year old male with mucoepidermoid carcinoma of the base of the tongue successfully treated with surgical excision and neck dissection. Regular clinical follow up showed no signs of recurrence at 9 months post excision.

Keywords: Mucoepidermoid carcinoma, Reserve cells, Salivary gland ducts.

Introduction

Mucoepidermoid carcinomas (MECs) representing a major portion of salivary gland tumours are thought to arise from the reserve cells of their excretory ducts. Unlike other tumours MECs display a unique cytology of three distinct cell lines namely epidermoid cells, mucous cells and poorly differentiated intermediate cells in varying proportions. Minor salivary glands are located all around the oral cavity and base of the tongue; however few cases of MEC of the base of the tongue have been reported in literature though treatment guidelines are unavailable. Here we would like to present the case of a 71 year old male with a histologically verified mucoepidermoid carcinoma of the base of the tongue successfully treated with surgical excision and neck dissection.

Case Report

A 71-year-old male, hypertensive, diabetic patient presented to our outpatient clinic, with a primary complaint of a mass at the posterior aspect of the tongue. According to the patient he was in his usual state of health when the mass appeared at the base of his tongue six months ago and gradually increased in size over this time; however the mass did not impede swallowing and was not associated with any bleeding, pain or discharge. There was no history of weight loss. He was an ex-smoker, who was addicted to chewing paan (A traditional South East Asian mouth freshener containing areca nuts, lime and tobacco wrapped in Betel leaf). On examination a small non tender lesion of about 2x2 cm was identified on the left posterior aspect of the tongue. He was advised computed tomography (CT) scan with contrast and biopsy of the lesion.

CT scan showed an enhancing soft tissue lesion at left base of the tongue entering into the tonsillar fossa measuring 27.9 x 24.3 mm in greatest dimension (Figure-1). Multiple subcentimeter lymph nodes were also noticed along the ipsilateral internal jugular vein. Biopsy sampling showed invasive foci of dysplastic squamous epithelium into the submucosa with neoplastic cells having indistinct cellular boundaries and pleomorphic nuclei with keratinization by the

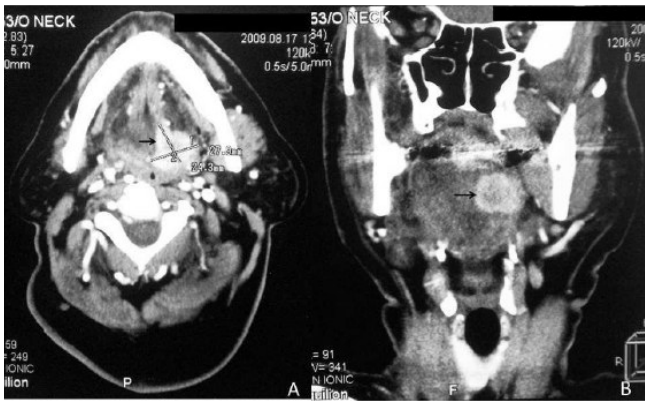

Figure-1: Axial (A) and Coronal (B) CT scan with contrast showing a soft tissue enhancing lesion at the base of tongue.

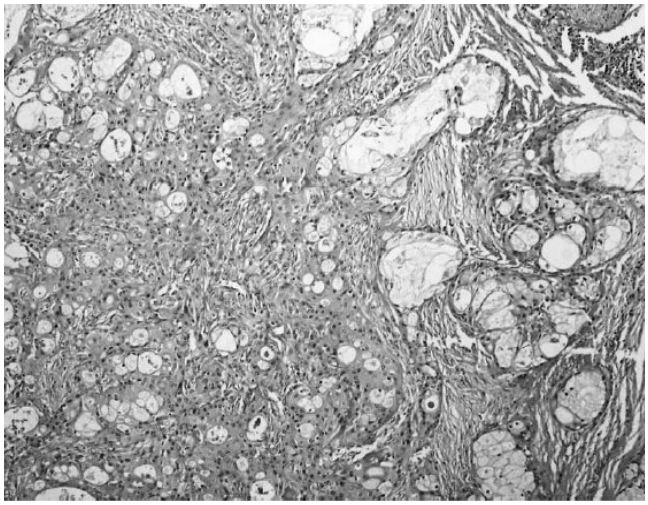

Figure-2: H&E staining of the excised tumor at 10x showing three distinct cell lines; epidermoid cells, mucous cells and intermediate cells.

tumour cells. PAS Alcian blue highlighted mucin in the tumour cells indicating a low grade mucoepidermoid carcinoma. He was electively admitted for partial glossectomy, neck dissection, pectoralis major flap reconstruction and tracheostomy.

A left posterior partial glossectomy was performed using lateral mandibulotomy approach and removing a 3x2 cm mass from the base of tongue including the lateral border; however the lesion was not involving the left anterior pillar. Buccal mucosa and mandible were also spared as frozen section histopathology showed clear resection margins. Unilateral neck dissection was performed and multiple sub centimeter lymph nodes were cleared from levels I-V, preserving the sternocleidomastoid muscle and the spinal accessory nerve. Pectoralis major flap was raised and tunneled through the neck to fill the defect.

Histopathological studies showed a slightly raised nodular lesion with intact overlying mucosa measuring 2 x 1.6 x 1.8 cm, with no lymphatic or vascular invasion and clear margins ranging from 5 to 10mm (anterior pilar: 5 mm, anterior margin: 7 mm, posterior margin: 10 mm and deep resection margin: 5 mm from the tumour). The lesion exhibited three distinct cell lines; epidermoid cells, mucous cells and intermediate cells (Figure-2). All 39 lymph nodes from levels I-V were negative for metastasis.

He was advised to remain under observation according to an active schedule. Head and Neck follow up showed no signs of recurrence 9 months after surgical excision.

Discussion

Although rarely reported at the base of the tongue, MECs account for approximately 35% of all malignancies of the salivary glands.[1] MEC usually presents as a painless, fixed, slowly growing mass.[1] Unlike other tumours they display a unique cytology of three distinct cellular lines epidermoid cells, mucous cells and poorly differentiated intermediate cells in varying proportions; based on the proportion of these cell lines, MEC's display a wide morphological spectrum, making diagnosis rather difficult. The diagnosis of MEC relies on histopathological and immunohistochemical demonstration of the three morphologically distinct cell lines.

Histologically MEC may be classified as high, low or intermediate grade. High-grade tumours primarily consist of poorly differentiated epithelial and intermediate cells with evidence of cytologic atypia, high mitotic frequencies and areas of necrosis. In contrast low-grade tumours primarily show well differentiated goblet and epithelial cells.[1] Various methods of classifying MECs histologically have been put forward as indicators of prognosis; however studies have also linked the expression of GLUT-1 with the aggressiveness of the tumour indicating its use as a prognostic marker.[2] Studies have also shown that increased expression of bFGF correlated with moderately and poorly differentiated mucoepidermoid carcinoma, whereas increased TGF-beta1 expression was found in well-differentiated MECs.[3]

Even though women are more affected then men (3:2), a study carried out on the immunohistochemical properties of MECs found no receptors for estrogen and progesterone on MECs indicating that they did not play a role in tumorgenesis.[4]

Due to the rarity of the condition no treatment guidelines are currently available, individual reports range from local excision with CO2 laser and selective neck dissection,[5] to surgical excision and radiation therapy.[6] In our case we surgically removed the primary lesion and performed an ipsilateral selective neck dissection, and upto our most recent follow up the patient has no signs of residual disease.

No adjuvant therapy was offered to our patient due to the low histological grade and clear resection margins;

however patients may be considered for adjuvant therapy if either of the 2 conditions are not met.

Although recurrence is rare, cases of recurrence have been reported 15 years after initial excision,[7] indicating the requirement of long term follow up. In fact due to the unpredictability of the disease some studies advocate lifelong follow up regardless of treatment modality.[8]

Conclusion

MECs are rare tumours of the salivary glands. No specific guidelines have been evolved for the management of these tumours but surgical excision is mandatory along with a long term follow up.

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