Mucoepidermoid Tumor of Parotid Gland with Multiple distant Metastases: A Case Report

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ABSTRACT

Tumours of salivary glands are uncommon and comprise of about 2%–4% of all head and neck tumours. About 75%–80% of these tumours are benign and include pleomorphic adenoma, monomorphic adenoma, oncocytoma and papillary cystadenoma lymphomatosum. Mucoepidermoid carcinoma is the most common malignant tumour of salivary glands, representing 5–10% of all salivary gland tumours although known to be metastatic to local lymph nodes, distant metastases are rare (especially, with low and intermediate grade tumours). Histologic grade and the expression of various mucin glycoproteins are useful prognostic indicators. We present a case of mucoepidermoid carcinoma of parotid gland origin with distant metastases which is an uncommon occurrence with intermediate grade tumours.

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INTRODUCTION

Mucoepidermoid carcinoma (MEC), arises from pluripotent reserve cells of excretory ducts that are capable of differentiating into squamous, columnar, and mucous cells.[1,2] Although MEC accounts for <10% of all tumours of the salivary gland, it constitutes approximately 30% of all malignant tumours.[3] Among them, MEC occurs most frequently in the parotid gland. Stewart et al.[4] introduced the term mucoepidermoid to define distinct salivary gland tumour, characterized by a mixed pattern of two main cell types, epidermoid and mucus-producing cells. However, a third cell type, intermediate cell, which is not mucous or fully epidermoid, is often present. Subsequent metastases of few of the previously benign tumours have led to all mucoepidermoid tumours being considered carcinoma.[5] In view of the relative rarity of (salivary / MEC) tumours and remarkable variability in their biological behavior, opinions differ about appropriate classification, grading, and treatment.[6-9] This tumour rarely metastasizes to distant organs. We present a case of parotid gland mucoepidermoid carcinoma with hepatic and brain metastases.

The Case

A 24 year old woman presented with left sided neck swelling with pain in the neck for 6 months. She denied weight loss, fever, chills, dysphagia, dysphonia, facial numbness or paresis. The physi-

cal examination revealed a 4 cm by 3 cm fixed mass with rubbery consistency at the angle of the mandible on left side, without palpable lymphadenopathy. The neurological examination was negative for involvement of the cranial nerves. Initial CT scan of the neck revealed a parotid mass (3 × 2.3 × 2.7 cm) involving the superficial-deep part of the gland with slight displacement of the retromandibular vein and no substantial regional lymphadenopathy. Fine needle aspiration cytology (FNAC) was done from the mass which revealed epidermoid and mucous secreting cells. Subsequently, the patient underwent excision of the involved parotid gland (total parotidectomy). The pathology report was diagnostic of an intermediate grade mucoepidermoid carcinoma of the salivary gland with clear surgical resection margins; the pathological stage was pT2pN0pMx. As the surgical margins were clear, patient was advised regular follow up.

After about one year of follow up, the patient developed headache, a small swelling over left side of vertex and abdominal pain. CT scan of the head and neck with screening of chest and abdomen was done. CT scan of the brain revealed a large heterogeneous extra-axial mass along the left parietal convexity causing partial destruction of left parietal bone, invasion of underlying leptomeninges, left parietal lobe and midline shift towards the contralateral side (Figures 1, 2). CT scan of the neck did not reveal any residual disease in left parotid region but showed multiple metastatic left level II, III and V lymph nodes with cystic changes (Figure 3). CT scan of the chest with screening of abdomen revealed multiple hypodense necrotic nodular enhancing lesions (largest one approximately 62.1 mm × 53.5 mm) in both lobes of liver (Figure 4). CT guided needle biopsy of vertex, hepatic lesions and USG guided FNAC from cervical lymph nodes were histologically positive for malignant cell, favouring metastatic mucoepidermoid tumours.

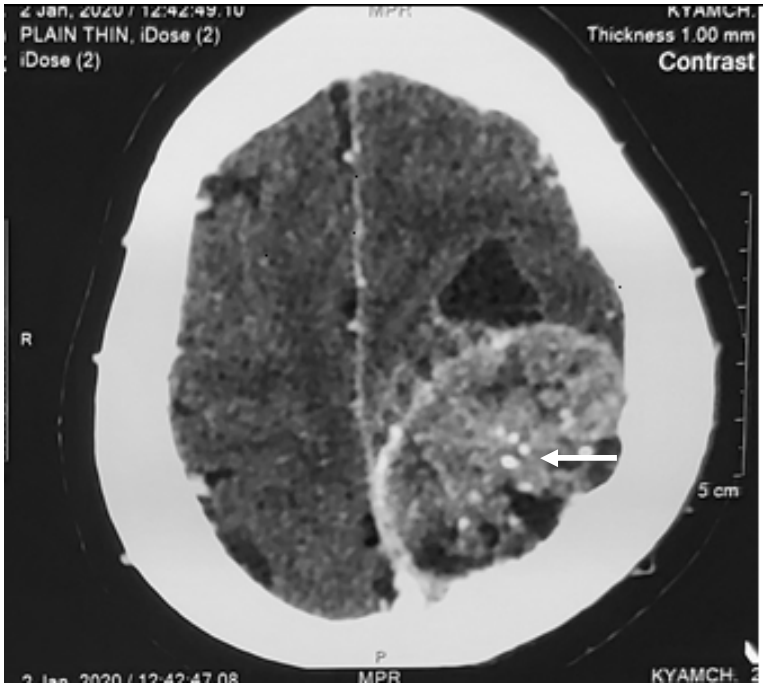

Figure 1: Contrast enhanced CT scan of brain in axial plane showing heterogeneously enhancing lesion with tiny calcifications (arrow) in left posterior parietal lobe causing mid line shift towards contra-lateral side

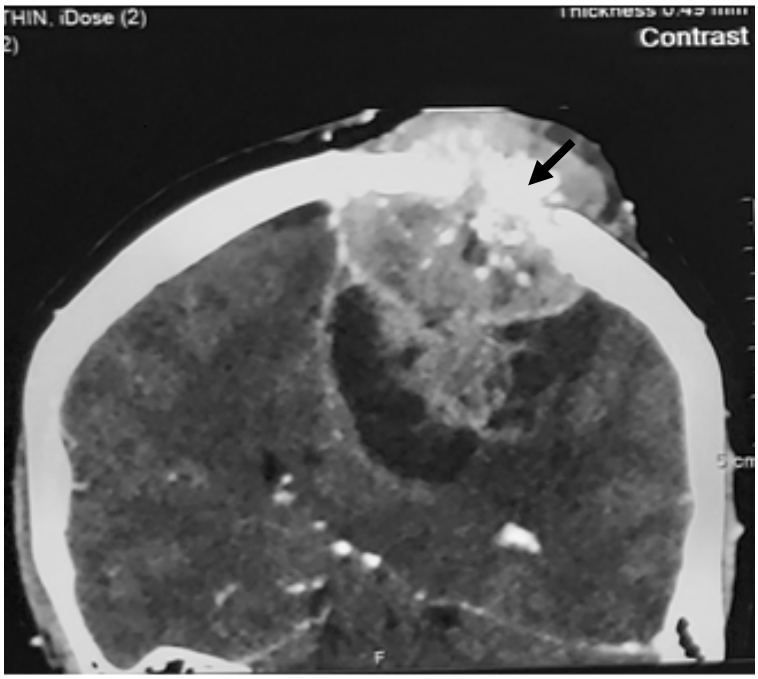

Figure 2: **Contrast enhanced CT scan of brain in reformatted coronal plane showing large heterogeneously enhancing extra-axial mass along left parietal convexity causing partial destruction of left parietal bone (arrow), invasion of underlying leptomeninges, left parietal lobe and mid line shift towards contralateral side**

Figure 3: **Contrast CT scan of neck showing metastatic left level II lymph node with cystic change infiltrating adjacent sternocleidomastoid muscle**

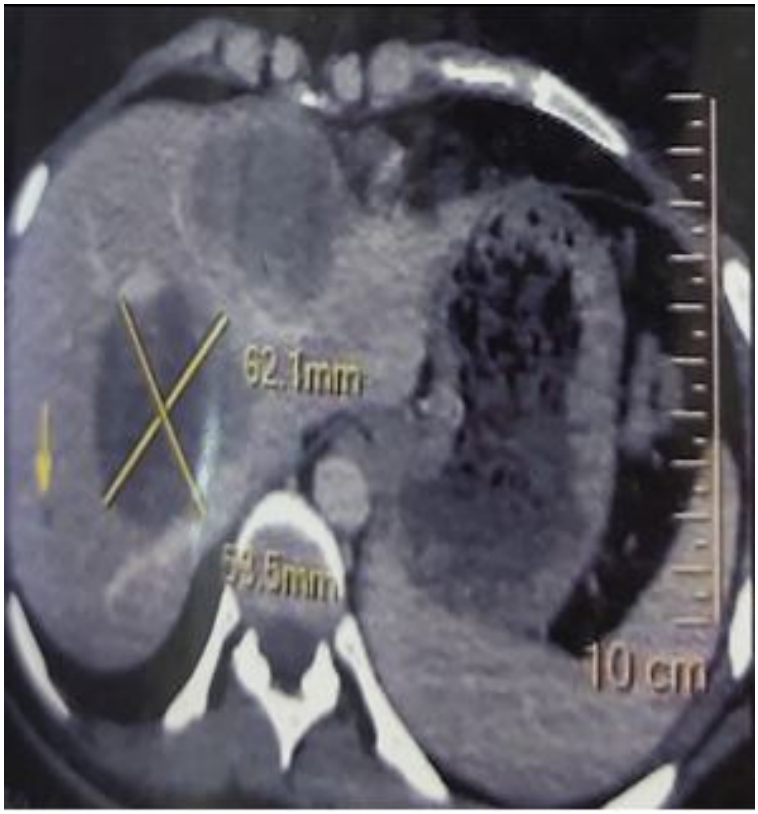

Figure 4: Axial contrast CT scan of abdomen showing hypodense necrotic nodular enhancing lesions within both lobes of liver, largest one at right lobe

DISCUSSION

Mucoepidermoid carcinoma is one of the most common malignant tumours of salivary glands, representing 5%–10% of all salivary gland tumours.[1,2] In our current case, left parotid gland was involved which is comparable with previous studies conducted by Shilo et al.[1] and Batsakis et al.[2] However, these tumours are also known to occur in lips, tongue, and buccal mucosa[1] although known to be metastatic to local lymph nodes, distant metastases are rare (especially, with low and intermediate grade tumours). Our patient had intermediate grade of mucoepidermoid carcinoma, but had multiple sites of distant metastases, which was rare for intermediate variety comparted with previous studies.[3,5,6] The incidence of distant metastasis in head and neck cancer and especially in salivary gland cancer is relatively low in comparison to other malignancies. The presence of distant metastasis has a poor prognosis in head and neck cancer, with a median survival of 4.3-7.3 months.[8] The likelihood of developing distant metastasis is associated with high-grade tumours, such as adenoid cystic carcinoma, salivary duct carcinoma, high-grade mucoepidermoid carcinoma and tumours located in the submandibular gland, posterior tongue and pharyngeal tumours.[2,6] A lower risk of developing distant metastasis is known for all other histological entities of salivary gland tumours. Distant metastases develops in approximately 20% of all patients with salivary gland cancer.[1] The most common site of metastasis is the lung.[8] Liver and brain are very rare sites.[8-10] In the present case, our patient had metastases to regional neck nodes as well as unusual rare site of distant metastases in the brain and liver. However, knowledge of the disease course for distant metastas-

es from salivary gland cancer is limited due to its rarity, the wide variety of salivary cancer histologic subtypes and the often prolonged disease course that could lead to loss of patient follow-up evaluation.[11] Treatment of these patients is usually performed in a palliative setting.

CONCLUSION

Salivary gland cancer exists as 24 different histologic types which can progress in different ways. The most common type is mucoepidermoid carcinoma. The tendency toward distant metastasis varies by primary location. Distant metastasis is less common with tumours that arise in the parotid gland. The current case of mucoepidermoid tumour of parotid gland had distant hepatic and brain metastases during its time-course. So, from this case report, it is advisable to perform metastatic work up when dealing with intermediate grade mucoepidermoid tumour of the salivary gland.

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Conflict of interest: Author declares that there is no conflict of interest.

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