

# Mucoepidermoid Carcinoma Mimicking A Soft Tissue Sarcoma: A Case Report

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## Abstract

We describe a case that initially presented to the oncology unit as what seemed like a soft tissue sarcoma arising from the thigh. Biopsy of this mass showed that it was a mucoepidermoid carcinoma. This is a very rare presentation of a non-salivary gland primary mucoepidermoid carcinoma.

## INTRODUCTION

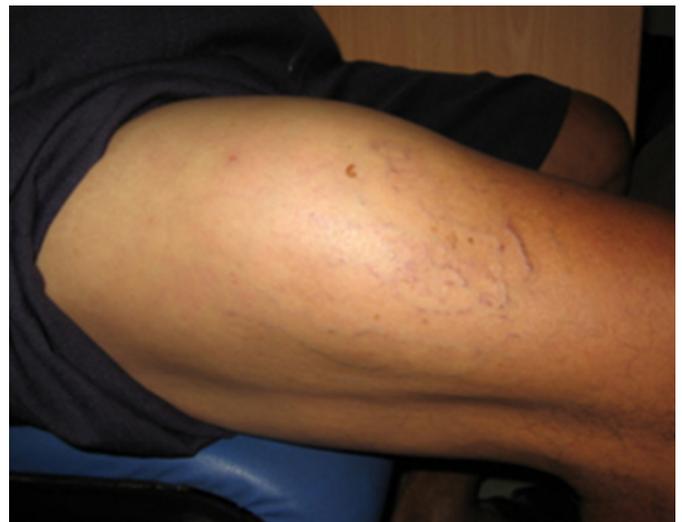
Mucoepidermoid carcinoma is primarily a salivary gland tumour accounting for approximately 5 to 10% of all salivary gland tumours<sup>(1)</sup>. We report this case of non-salivary mucoepidermoid carcinoma that presented like a soft tissue sarcoma with uncertain primary origin.

## CASE REPORT

This is a 59 years old Chinese gentleman that was referred to us on the 26<sup>th</sup> of May 2006 with a swelling over the lateral aspect of his right mid-thigh (Fig 1). He noted the swelling a year ago, which initially started as a slight fullness over the lateral aspect of the thigh and progressively increased in size exponentially over the past few months. It occasionally caused some pain and discomfort, relieved by analgesics. There were no other local symptoms. In addition to that, he also noted another swelling arising from the posterior aspect of his left shoulder. It had become more prominent in the past 3 months.

## Figure 1

Figure 1: Swelling over the lateral aspect of the right thigh with superficial dilated veins.



He has a past medical history of Ischaemic Heart disease, Diabetes Mellitus, Hypertension and Peripheral Vascular Disease. He is also a smoker of past 40 years, smoking an average of 20 cigarettes a day. There is a positive family history of cancer in his family. His mother and sister succumbed to breast carcinoma at a relative young age.

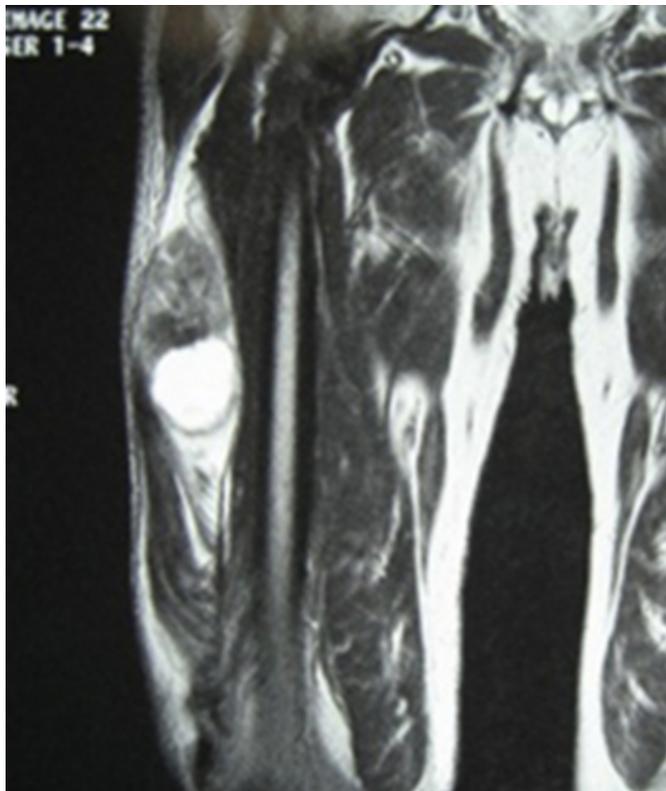
On examination, there was a swelling measuring 15 x 20 cm in size situated over the anterolateral aspect of his right thigh. It was firm in consistency, fixed to deeper tissue but not adherent to the overlying skin. There were dilated veins situated over the swelling. The swelling over the left posterior aspect of shoulder was 2 x 2 cm in size with similar features to the one in the thigh. He had no palpable lymph

nodes or organomegaly in the abdomen. There was no evidence of abnormality on physical examination of the oral cavity, parotid or submandibular gland.

He had a Magnetic Resonance Imaging done prior to our consultation. It showed features consistent with a soft tissue sarcoma filling almost a third of the lateral compartment of the thigh, within the vastus lateralis muscle. It is well encapsulated and not involving the neurovascular bundle, as shown in figure 2 and 3.

**Figure 2**

Figure 2: A 8cm by 4cm heterogenous mass is noted arising within the vastus lateralis muscle. It has intermediate solid component proximally and centrally a more very high signal rounded cystic like area.



**Figure 3**

Figure 3: T2 weighted MRI axial image shows an heterogenous tumour arising from the vastus lateralis muscle. There is a large cystic like area measuring 6cm by 4cm with a thick wall 1-1.5cm with intermediate signal present.



We subsequently proceeded to do a trucut biopsy of both thigh and the shoulder tumours. Both were reported to be similar in pathology and showed features consistent with mucoepidermoid carcinoma. A wide excision of the tumour of the right thigh was carried. Perioperatively, the resected tumour mass was found to be 10x15x20 centimeter in dimensions, within the vastus lateralis muscle. It was removed with a surrounding layer of normal looking muscle. We also noted another swelling over the upper lateral aspect of the thigh, which was not evident on the initial MRI scans. It was also excised in the same sitting. It measured 5x4x4 centimeters, within the Rectus Femoris muscle.

Cross section of the tumour contained cystic areas filled with heamoserous fluid. The histological examination of the resected specimen showed fragments of dense fibrocollagenous tissue which was extensively infiltrated by cords and clusters of pleomorphic squamoid to basaloid malignant cells. There were also scattered cells with clear vacuolated cytoplasm. No definite lymphovascular permeation was seen. These features were judged to be consistent with high grade mucoepidermoid carcinoma.

**DISCUSSION**

Mucoepidermoid tumours are commonly encountered in the

salivary glands. They make up 5% of all salivary gland tumours of which 70% are from the parotid glands. There are various published reports of extra salivary primary presentation of these tumours. The reported sites include the lacrimal sac (3), the bronchus (4), pleura (5), jaw (6) and skin (7). They are usually asymptomatic but occasionally present with pain, which is an indication of a possible high-grade lesion. The commonest form of extra salivary mucoepidermoid carcinoma is the cutaneous variant.

Histologically, they are composed of epidermoid cells, mucin producing cells or intermediate cells. There are generally divided into 3 histological grades (2):

**Low grade** – Where there is presence of well-formed glandular structures or microcysts lined by a single layer of mucus-secreting columnar cells. Occasionally, there will be presence of papillary infoldings.

**Intermediate grade** – There is presence of solid areas of epidermoid cells or squamous cells with intermediate basaloid cells. Papillary cystic infoldings of epidermoid or basaloid cells are also present.

**High grade** - Majority of cells present as solid nests and cords of intermediate basaloid cells and epidermoid cells. There is prominent nuclear pleomorphism and the cystic component usually is usually less than 20%. Rarely, there is presence of glands although occasionally the glandular component may predominate. There is presence of more mitotic figures (usually more than 4/10hpf), necrosis, and perineural invasion.

This case presented with similar tumours at 2 different sites of the body, which occurred at almost the same time. It is highly possible that these tumours are secondaries although our investigations did not reveal the primary site of the tumour. Furthermore, there was no cutaneous involvement noted on the histology, indicating that it may not be the cutaneous variant of the extra salivary mucoepidermoid carcinoma. This does not however totally negate the possibility of a cutaneous origin. Sometimes, histologically

the cutaneous variant of mucoepidermoid carcinoma can be confused with adenosquamous carcinoma of the skin. The histological features such as identification of mucigenic cells using mucin stain and immunohistochemistry can be helpful in distinguishing both of them.

The primary treatment of this form of cancer is an adequate surgical resection. The prognosis in this patient is not encouraging as he has a high-grade tumour. High-grade tumours are difficult to excise totally as they tend to infiltrate the surrounding tissues. The recurrence rate of such tumours is around 30% and the prognosis for a 5 year survival is 50% (8).

Therefore, it is important to remember that sometimes carcinomas can present as soft tissue masses in the extremities and be mistaken for sarcomas. Establishing the diagnosis via a biopsy is an essential step in the management of these patients.

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