

# Myoepithelioma of the lateral abdominal wall

## A case report

Linghong Guo, MD<sup>a</sup>, Fuqing Zhou, MD<sup>a</sup>, Ning Zhang, MD<sup>a</sup>, Hua Dai, MM<sup>b</sup>, Xianjun Zeng, MM<sup>a</sup>, Honghan Gong, MD<sup>a,\*</sup>

### Abstract

**Rationale:** Soft-tissue myoepithelioma is a rare neoplasm. It usually occurs in the distal or proximal extremities, but seldomly arises in the abdominal wall.

**Presenting concerns of the patient:** The patient is a 40-year-old woman who presented with a painless mass at the lateral abdominal wall for 6 months. Computed tomography scan revealed a lobulated and well-defined iso-density mass showing heterogeneously moderate enhancement. The mass exhibited intermediate T1 signal and obvious high T2 signal on magnetic resonance imaging.

**Interventions:** The tumor was excised. Hematoxylin–eosin stain and immunohistochemical stain showed that the tumor was myoepithelioma.

**Outcomes:** The patient did not undergo chemotherapy and radiotherapy. No recurrence or metastasis was noted during the 1 year follow-up.

**Lessons:** Radiologists should consider myoepithelioma in the differential diagnosis when finding a tumor in the abdominal wall.

**Abbreviations:** CT = computed tomography, MRI = magnetic resonance imaging.

**Keywords:** computed tomography, magnetic resonance imaging, myoepithelioma, soft tissue

## 1. Introduction

Myoepithelioma commonly occurs in salivary glands, but rarely in soft tissue.<sup>[1]</sup> Soft tissue myoepithelioma used to be categorized as a parachordoma, a tumor composed of large epithelioid cells with vacuolated cytoplasm, now considered as a morphological variant of myoepithelioma.<sup>[2]</sup> In 2013, World Health Organization cancelled the parachordoma designation and listed myoepithelioma in the category of “tumor of uncertain differentiation” along with myoepithelial carcinoma and mixed tumors.<sup>[3]</sup> Myoepitheliomas can occur in a board range of anatomic locations, but the most common sites are distal or proximal extremities.<sup>[4,5]</sup> We report a case of soft tissue myoepithelioma occurring in the abdominal wall, an uncommon location.

## 2. Case report

A 40-year-old woman presented with a painless mass at the lateral abdominal wall for 6 months. She had no medical and

family history. On examination, there was a mild-tender, smooth contoured and firm mass in the right lateral abdominal wall, without raised temperature. Computed tomography (CT) scan revealed a lobulated and well-defined iso-density tumor containing many cystic regions (Fig. 1). The tumor showed heterogeneously moderate enhancement after contrast injection. The mass exhibited a heterogeneous intermediate T1 signal and obvious high T2 signal (Fig. 2) on magnetic resonance imaging (MRI). Most cystic regions were obviously bright on the T2 image with a well-circumscribed margin. Then, the tumor was excised. Microscopic examination showed that the tumor consisted of epithelioid and spindled cells arranged in cords and trabeculae with eosinophilic or vacuolated cytoplasm in myxoid and fibrous stroma. There was neither mitosis, necrosis, and ductal differentiation nor cartilaginous or osseous differentiation (Fig. 3). Immunohistochemical stain showed that the tumor cells were positive with cytokeratin, S100, Vimentin, and EMA (Fig. 4), but negative for SMA, TTF1, and CD34. Finally, a diagnosis of soft-tissue myoepithelioma was offered based on the above histologic features. No recurrence or metastasis was noted during the 1 year follow-up.

This study was approved by the Medical Research Ethics Committee and the Institutional Review Board of the First Affiliated Hospital, Nanchang University, China. The patient read and signed written informed consent before the writing of this report.

## 3. Discussion

Myoepithelioma of soft tissue is uncommon, and its histogenesis is still uncertain.<sup>[3]</sup> The tumor lacks gender predilection and affects all age groups with a peak in middle age. It mostly presents as painfulness mass in the extremities and limb girdles situated primarily in subcutis and deep soft tissue (intramuscular, within fascia and subfascial).<sup>[4]</sup> Aside from the above common locations,

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<sup>a</sup> Department of Radiology, <sup>b</sup> Department of Pathology, The First Affiliated Hospital of Nanchang University, Nanchang, Jiangxi, China.

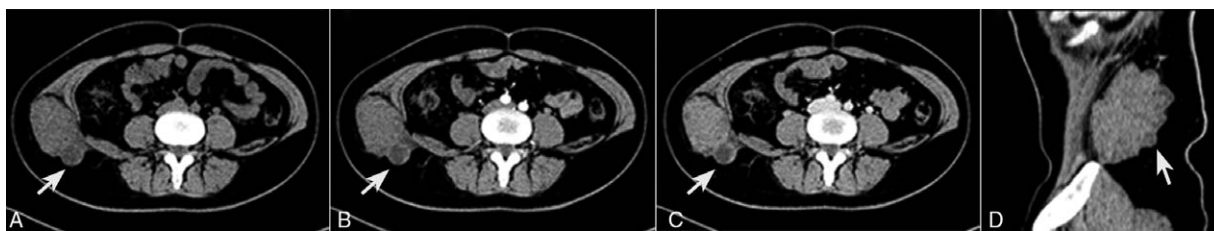
\* Correspondence: Honghan Gong, Department of Radiology, The First Affiliated Hospital of Nanchang University, No. 17, Yongwaizheng Street, Donghu District, Nanchang, Jiangxi 330006, China (e-mail: honghan\_gong@sina.com).

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**Figure 1.** CT scan (A, nonenhanced CT; B, arterial phase; C, delayed phase; D, sagittal delayed phase) showed a tumor of myoepithelioma in the right lateral wall. The tumor displayed heterogeneous moderate and prolonged enhancement with many nonenhanced cystic areas (arrows). CT = computed tomography.

soft-tissue myoepithelioma has also been reported in the other places such as the neck,<sup>[4]</sup> trunk,<sup>[6]</sup> kidney,<sup>[7]</sup> ovary,<sup>[8]</sup> and bone.<sup>[9]</sup> In our case, the tumor arose in the right lateral abdominal wall. This location has seldom been reported in English language literature.

Soft-tissue myoepithelioma is similar to its salivary gland counterparts on both morphological and immunohistochemical characteristics, and has a great spectrum of morphologic appearances. Myoepithelioma is usually composed of epithelioid, spindled, plasmacytoid, or clear cells arranged in various patterns, mainly reticular or trabecular, in myxoid or hyalinized stroma.<sup>[1,4]</sup> The cytoplasm generally appears from eosinophilic to clear, occasional vacuolated (formerly identified in so-called “parachordoma”). Unlike mixed tumor, myoepithelioma lacks of ductal differentiation. Occasionally, cartilaginous or osseous differentiation can be seen in the tumor.<sup>[4,10]</sup> Immunohistochemically, the most sensitive marker for myoepithelioma are epithelial marker (cytokeratin and EMA), S100 and GFAP.<sup>[1]</sup> In the present case, the histological and immunohistochemical features were suggestive of the soft-tissue myoepithelioma. The majority of myoepitheliomas in soft tissue show a benign clinical course. There is rare metastasis in myoepithelioma.<sup>[4]</sup> Only a few cases were reported recurrence, which were seen in incomplete resection.<sup>[4,11]</sup> In our case, the tumor was noted no recurrence or metastasis during follow-up period.

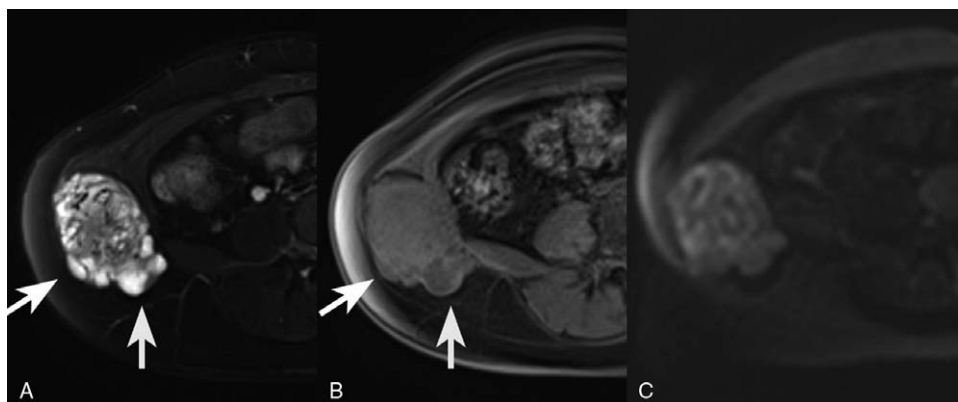
Imaging characteristics of myoepithelioma of soft tissue previously have not been well-described in the English language literature due to the low prevalence of myoepithelioma in soft tissue. In our case, the tumor was a well-defined mass with

moderate enhancement like the other benign soft tissue tumors on CT. MR exhibited the mass with intermediate intensity on T1 images and obvious high intensity on T2 images, which is consistence with the tumor’s histological structure rich in myxoid stroma. Besides, we found many well-circumscribed cystic regions in the tumor, which have not been described in previous reports. We are not sure if this is a characteristic sign now. Therefore, more cases need to be collected.

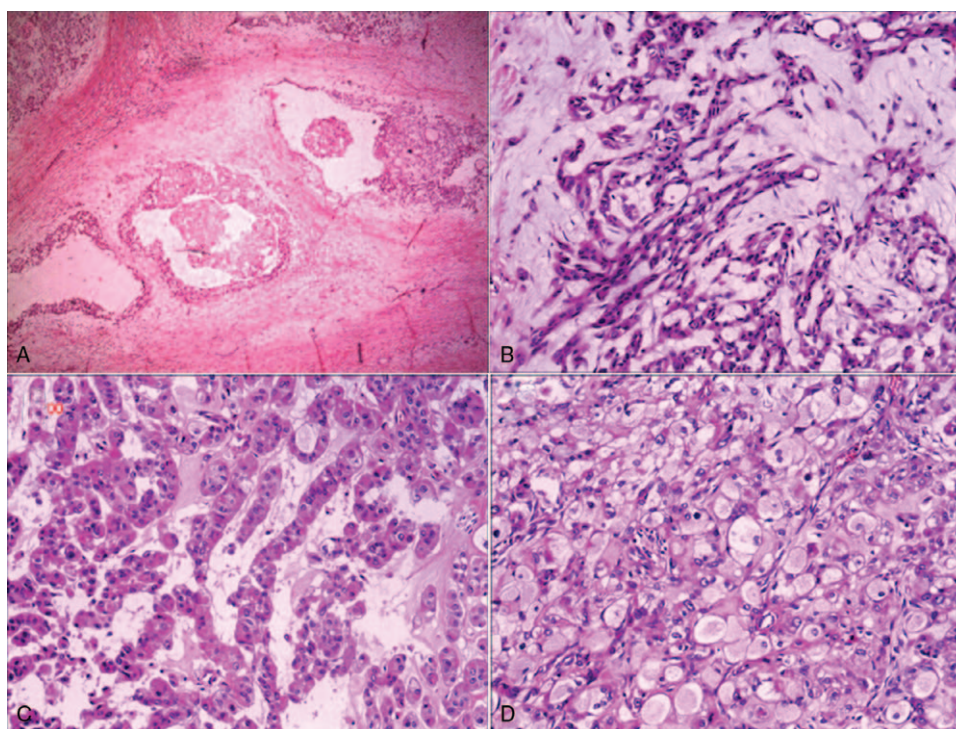
The differential diagnoses of myoepithelioma in this location mainly included desmoid-type fibromatosis and malignant soft-tissue sarcoma. Desmoid-type fibromatosis is the most common soft-tissue tumor in the abdominal wall. The T2 signal intensity of that is usually heterogeneous hypointense to skeletal muscle, attributed to the fibrosis component.<sup>[12]</sup> Malignant soft-tissue sarcoma always shows central necrosis with an ill-defined margin instead of well-defined cystic area. As the imaging appearances of soft-tissue myoepithelioma is not that specific, it is difficult to diagnose myoepithelioma only by imaging findings. Hence, further inspection, especially biopsy, is needed.

#### 4. Conclusion

We reported a case of soft-tissue myoepithelioma in the abdominal wall, a rare place of this tumor. To our knowledge, this is the first report about the imaging appearance of soft-tissue myoepithelioma. The imaging findings of this tumor are mainly nonspecific. In this case, we found a sign many well-defined cystic areas in this tumor both on CT and MRI, but more data are needed to confirm the value of this sign. Our experience suggests that radiologists



**Figure 2.** Magnetic resonance imaging of the tumor. The mass exhibited a heterogeneous intermediate signal on the fat-suppressed T1 image (A) and an obvious high signal on the fat-suppressed T2 image (B), with moderate restricted diffusion (C). The mass also showed cystic regions (arrows) on all sequences.



**Figure 3.** HE results of the tumor. (A) The tumor showed multinodular architecture separated by fibrous stroma (HE,  $\times 50$ ). (B) The tumor showed spindled cells and myxoid stroma (HE,  $\times 200$ ). (C) The tumor showed epithelioid cells arranged in cords and a trabeculae pattern (HE,  $\times 200$ ). (D) Some tumor cells were vacuolated (HE,  $\times 200$ ). HE = hematoxylin–eosin stain.

should consider myoepithelioma in the differential diagnosis when encountering a tumor in the abdominal wall.

### Author contributions

**Methodology:** Xianjun Zeng.

**Resources:** Ning Zhang, Hua Dai.

**Software:** Xianjun Zeng.

**Writing – original draft:** Linghong Guo.

**Writing – review and editing:** Fuqing Zhou, Honghan Gong.

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