Myoepithelioma of the hypothenar region

The patient was admitted in the emergency department a few days after a sport related injury of his left hand. His mother observed a soft tissue swelling at the palmar side of his hand. On clinical examination, the mass was soft, mobile with mild tenderness. The mass was surgically removed.

Imaging Findings:

Initially an ultrasound was performed. A soft-tissue heterogeneous mass without calcifications was shown in the hypothenar area (Fig 1a, b). An additional MRI of the hand was performed for further evaluation. A well-circumscribed, lobulated mass with low MR signal on T1W (Fig. 2a, b) and high MR signal on T2W with fat suppression images (Fig. 3 a, b) was noted. The lesion showed vivid, but slightly heterogeneous enhancement after intravenous administration of contrast medium (Fig. 4 a, b). The mass was surgically removed. A 7-month MRI follow-up revealed only post-operative scar tissue without any evidence of local recurrence (Fig. 5 a-d).

Discussion:

Myoepitheliomas are benign tumours of salivary glands classified as cutaneous, mixed tumours with a purely myoepithelial differentiation. Recently they have been recognized to arise also in soft tissue, mostly on the extremities. They are composed of different histological components with a high proportion of myoepithelial components [1].

They are rare, benign, slow-growing tumours with a peak incidence between the third and fifth decades of life. Contrary to this, in our case the patient was quite young [2]. Only a few cases are described in bibliography whilst we cannot use the term typical clinical presentation. In all previously reported cases patients presented with a swelling and mild tenderness [3]. In one case the patient had median nerve compression symptoms due to size and extensions of the tumour [2]. Although in most of the cases no evidence of calcifications were present in the initial plain radiography, there is a single case with calcifications described in bibliography [4]. Nonetheless the tumour is growing in subcutaneous area with a low rate in bone infiltration. In bibliography, we found just one case with bone involvement [5]. Imaging is essential because the swelling of soft tissue, at all ages, can be due to a great variety of pathology, including sarcomas. Ultrasound can be used as a diagnostic tool to identify the solid nature of the lesion. Myoepithelioma presents predominantly as a hypointense, hypervascular and lobulated, well-circumscribed mass [2]. MRI is the gold standard imaging method for soft tissue lesions as it gives additional information regardless of specific characteristics of the tumour. Anatomy and information about the lesion which guides treatment in most of
the cases depicted a lobulated, well-circumscribe mass with low MR signal intensity and intense enhancement after intravenous contrast medium [3, 4]. Although imaging modalities delineate the characteristics of the mass, its extensions and relationship to the neurovascular and bony elements, the final diagnosis is made by histological examination after core biopsy or operation [1-5]. Concerning the size, extensions and clinical presentation, the mass could be followed-up or surgically removed. Myoepitheliomas are mostly slow growing, benign tumours which have no recurrence tenderness, thus a case of malignant transformation has been reported [6]. Imaging is useful for the evaluation of the tumour characteristics’ surgical planning and follow-up in case of malignancy. Although myoepitheliomas are only recently recognized as soft tissue masses, they should be taken into consideration in differential diagnosis and in extremely rare cases of malignant transformation.

**Differential Diagnosis List:** Soft tissue myoepithelioma of the hand., Ganglion cyst, Sarcomas

**Final Diagnosis:** Soft tissue myoepithelioma of the hand.

**References:**


**Figure 1**

**Description:** Grey scale ultrasound of the left hypothenar area. A hypoechoic (black arrow) lobulated (white arrow) soft tissue mass was depicted. **Origin:** Department of Radiology, AMC University Hospital, Amsterdam, Holland.
**Figure 2**

**a**

Description: Sagittal T1WI. A well-defined lobulated low to intermittent MR signal mass (black arrow) abuts the hypothenar muscles without signs of infiltration (white arrow).

**Origin:** Department of Radiology, AMC University Hospital, Amsterdam, Holland

**b**

Description: Sagittal T1WI. A well-defined lobulated low to intermittent MR signal mass (black arrow) abuts the hypothenar muscles without signs of infiltration (white arrow).

**Origin:** Department of Radiology, AMC University Hospital, Amsterdam, Holland
Figure 3

**Description:** Axial T2W with fat suppression images. The respective mass has a heterogenous high MR signal (white arrow). **Origin:** Department of Radiology, AMC University Hospital, Amsterdam, Holland.

**Description:** Axial T2W with fat suppression images. No contact with the flexor tendons or infiltration of the carpal tunnel (blank arrow) noted. **Origin:** Department of Radiology, AMC University Hospital, Amsterdam, Holland.
Description: Sagittal T1+C images. Intense but inhomogeneous enhancement after intravenous contrast administration (black arrow). Origin: Department of Radiology, AMC University Hospital, Amsterdam, Holland
Figure 5

Description: A 7-month follow-up after surgical removal of the mass. Axial T2 with fat suppression images. No remnant or local recurrence of the mass was noted (white arrowhead). Origin: Department of Radiology, AMC University Hospital, Amsterdam, Holland.
Description: A 7-month follow-up after surgical removal of the mass. Axial T2 with fat suppression images. Post-op soft tissue and bone changes (b). Origin: Department of Radiology, AMC University Hospital, Amsterdam, Holland.