

Skeletal Muscle Metastasis Revealing an Asymptomatic Pulmonary Adenocarcinoma-A Case Report

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Case Report

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Abstract: Skeletal muscle metastases are an exceptional mode of revelation of broncho-pulmonary cancers, we report a case of a patient with lung cancer disclosed by skeletal muscle metastasis. The patient consulted for a painful mass of the left calf with significant weight loss, the medical imagery shows an intramuscular process and the ultrasonography guided biopsy shows an infiltration of the muscle with metastatic adenocarcinoma, immunohistochemical patterns suggested the pulmonary origin, the treatment included muscle resection and chemotherapy. Skeletal muscles metastases from lung cancer are rare and although indicative of a poor prognosis, the treatment is poorly codified and differs from case to case.

Keywords: Skeletal, Muscle, Metastasis, lung, Cancer, Adenocarcinoma.

INTRODUCTION

The diagnosis of broncho-pulmonary cancer is made at a metastatic stage in 75% of cases; it is at the top of the list of cancers giving skeletal metastases [1, 2]. By this case we remind the rarity of skeletal metastases from lung cancer and their poor prognosis

CASE STUDY

A 55-years-old man, regular chronic smoker, with no past medical history consults for a swelling of the leg that has been progressing for 20 days, associated with a weight loss of 10 kg in 6 months, the clinical examination finds a swelling of the left calf of hard consistency, fixed to both planes, very painful on palpation, measuring 8cm of major axis without inflammatory signs, the rest of the examination is without particularity including the pulmonary one.

Magnetic resonance imaging (Figure-1) shows 2 intramuscular lesions in the gastrocnemius muscle measuring 34x43 mm and in the anterior tibial measuring 10.5 cm, in hyposignal T1, hypersignal T2, with intense and heterogeneous enhancement and

extensive necrosis. The biological analysis shows a slight inflammation the CRP at 22 mg / l, the tumor markers (PSA, CA15-3, CA19-9, AFP) are normal whereas the ACE is at 94.14 ng / ml.

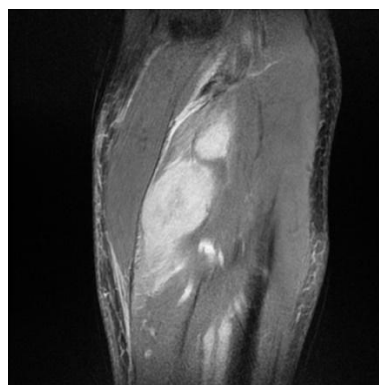


Fig-1: MRI of the left calf in coronal section showing lesions of the internal gastrocnemius and of the anterior tibial muscles

The ultrasonography guided biopsy shows a malignant carcinomatosis proliferation made of tubular structures. Tumor cells have marked cytonuclear atypias with mitotic figures (Figure 2). In the

immunohistochemical study: the tumor cells expressed in a diffuse and intense way the CK7 and the TTF1. They are negative at CK 20 and p63, it is a metastasis of a pulmonary adenocarcinoma.

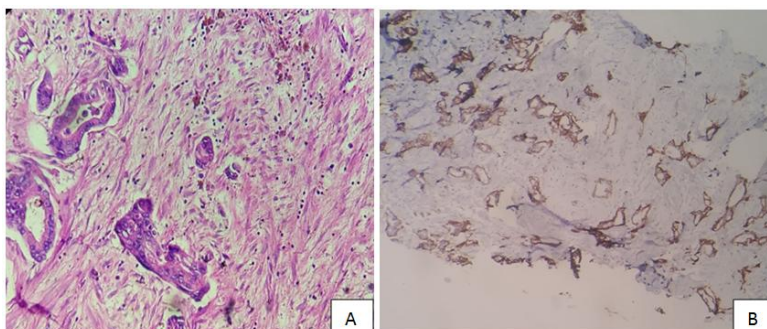


Fig-2: Histology of the mass showing adenocarcinomatous tumor proliferation at medium magnification (H200) (A), strongly expresses the anti-CK7 antibody (B)

Chest X-ray is normal. Thoracic computed tomography (Figure-3) revealed a nodule of the left inferior lobe rounded with spiculated contours of tumoral appearance.

As part of the extension assessment, the abdominal computed tomography revealed a second

localization (Figure-4) in the gluteus medius muscles. The evolution is marked by the appearance of a new mass at the left arm, the patient benefited from chemotherapy after palliative surgery for the calf's metastasis, the death occurred after the first month of treatment.

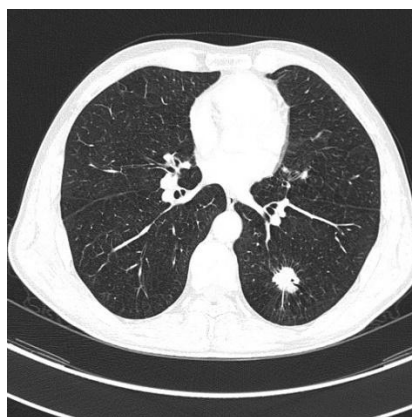


Fig-3: Cross section of a thoracic CT parenchymal window showing a nodule of the lower left lobe



Fig-4: Cross section of an abdominal CT with injection of contrast product showing bilateral lesions of the gluteus medius muscles

DISCUSSION

Skeletal muscles constitute 40 to 50% of body mass, primary tumor involvement is relatively rare and even rarer for secondary localizations. The incidence of metastases is less than 1% in clinical series, and can reach 16% in cancerous patient's autopsy series [3]. The most frequent primitif cancers were localized in lung, urinary tract, digestive tract and genital tract. The muscles frequently affected are the psoas, the diaphragm, the pectoralis, the deltoid and thigh muscles [4].

Muscular metastases usually appear in a known neoplastic context, in very different time compared to the discovery of the primary tumor (most are discovered within 6 years). They are exceptionally revealing the primary tumor as the case of our patient [3, 4].

The invasion of the interstitial and lymphatic tissue between the muscle fibers is often at the origin of the muscular metastases, more rarely it is the invasion of the muscular cells themselves by contiguity [2, 4].

A lot of physicochemical arguments would protect the skeletal muscle from tumor invasion and explain the rarity of muscle metastases: the muscular mobility, the turbulence of the blood flow, the high oxygen pressure, the liberation of toxic oxygen free radicals, the production of lactic and pyruvic acids, the muscular ph [5].

Clinically, metastasis can be manifested by a tumor mass syndrome, pain of variable intensity [6], which does not poses a problem of diagnosis when the primary tumor is already known. The X-ray radiography allows the detection of calcification or ossification and the exclusion of a lesion with bone starting invading the soft tissues, the ultrasonography allows Just to delimit the mass and to characterize it [7]. Magnetic resonance imaging is the key examination to better characterize the tumor in general, biopsy can provide histological evidence on its metastatic nature and specify the primary tumor lesion when it is undetermined [8].

Due to the scarcity of muscle metastases, there are no treatment guidelines. The treatment depends on the one hand on the characteristics of the metastasis and on the other hand on the general state of the patient.

Surgical excision has a twofold benefit, first of all to improve the quality of life of patients by decreasing or eliminating muscle pain, and also a significant psychological benefit. Radiotherapy, 40-50 grays on average, makes it possible to control the pain and the size of the metastases. If the primary tumor is controlled, the combination with palliative chemotherapy would allow relatively prolonged survival [9, 10].

CONCLUSION

Muscular metastases are an exceptional mode of revealing broncho-pulmonary cancers, despite the fact that these are the first cause of this type of metastasis, the prognosis is pejorative at this stage: survival is 13.8% at 24 months (after the discovery of muscle metastasis), and dropped to 2.4% at 72 months [10]. The treatment is poorly codified and differs depending on the cases including radio-chemotherapy and local surgery.

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