OPEN ACCESS Freely available online

ISSN: 2684-1614
Journal of Tumour Research & Reports

Case Report

Skin Metastases: Revealing a Lung Adenocarcinoma

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ABSTRACT

Muscle metastases from bronchopulmonary cancer are rare; their revealing character is an exceptional fact. We report the observation of a muscular metastasis of the right arm, revealing a totally asymptomatic bronchial adenocarcinoma. The reason for our patient's consultation was a painful mass in the right arm. Imaging concluded that there was heterogeneous muscle collection without any erosion of the cortical bone of the humerus. The histological study of the tumor, after surgical excision, concluded in a metastasis of an adenocarcinoma, whose immune histochemical profile oriented towards a broncho-pulmonary or digestive origin. The chest X-ray was normal. Apart from the surgical excision of the muscle metastasis, the treatment included local consolidation radiotherapy associated with palliative chemotherapy. The evolution was marked by the absence of local recurrence, with nevertheless a dissemination of the lung cancer after 7 months of evolution patient deceased. Skeletal muscle metastases from lung cancer are rare and have a poor prognosis.

Keywords: Skeletal muscle; Bronchopulmonary cancer; Chemotherapy

INTRODUCTION

Skeletal muscle metastases from lung cancer are rare and their revealing nature constitutes an exceptional fact. We report the case of a skeletal muscle metastasis of the right arm revealing pulmonary adenocarcinoma in a 64-year-old man, totally asymptomatic with a normal chest X-ray. Patient of the 64 year old, with no particular pathological history, smoking 1 packet per day, initially consulted in the orthopedic department for a very painful swelling of the isolated right arm, evolving for 1 month. Physical examination revealed a deep mass in the posterolateral compartment of the right arm, 9 cm in long axis, of firm consistency, painful on palpation (Figure 1).

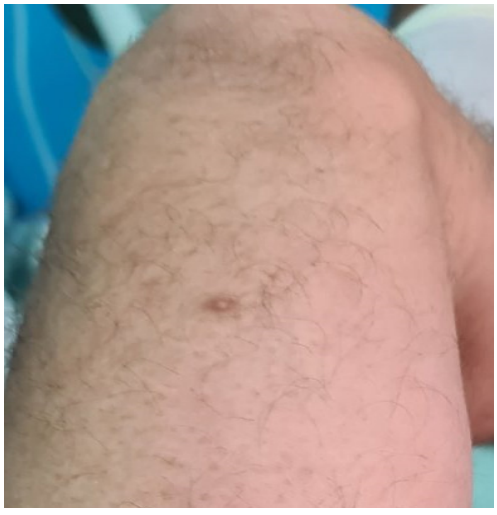

Figure 1: Mass of 1/3< of the posterior surface of the right arm.

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Received: 30-Jan-2023, Manuscript No. JTRR-23-19715; **Editor assigned:** 02-Feb-2023, Pre QC No. JTRR-23-19715 (PQ); **Reviewed:** 17-Feb-2023, QC No. JTRR-23-19715; **Revised:** 23-Feb-2023, Manuscript No. JTRR-23-18715 (R); **Published:** 03-Mar-2023, DOI: 10.35248/2684-1614.23.8.178

Citation: Nebchi L, Chaher N (2023) Skin Metastases: Revealing a Lung Adenocarcinoma. J Tum Res Reports. 8:178

CASE PRESENTATION

The ultrasound of the right arm showed a juxta-humeral muscle collection of 5 × 9 cm (Figures 2 and 3). The radiograph of the right humerus showed no bone damage (Figure 4). A large surgical biopsy removing the entire lesion en bloc was performed. Macroscopically, it was a friable, yellowish, finely encapsulated tumor of the vastus lateralis muscle (Figures 5 - 8). Histopathological and immunohistochemical examinations of the surgical specimen concluded that muscle metastasis of an adenocarcinoma could be of pulmonary or digestive origin (Figures 9-14). The chest X-ray was considered normal; the thoraco-abdomino-pelvic scanner (Figure 15).

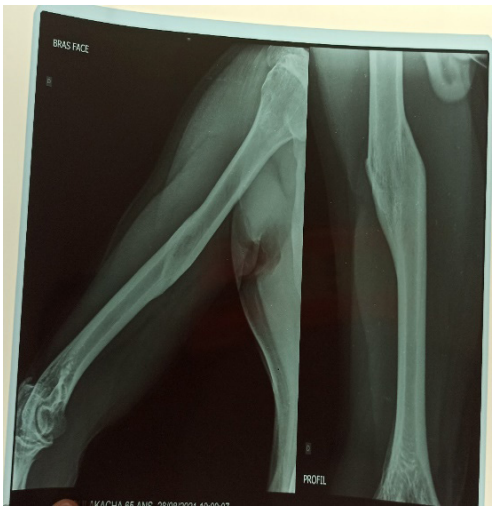


Figure 2: No bone involvement.

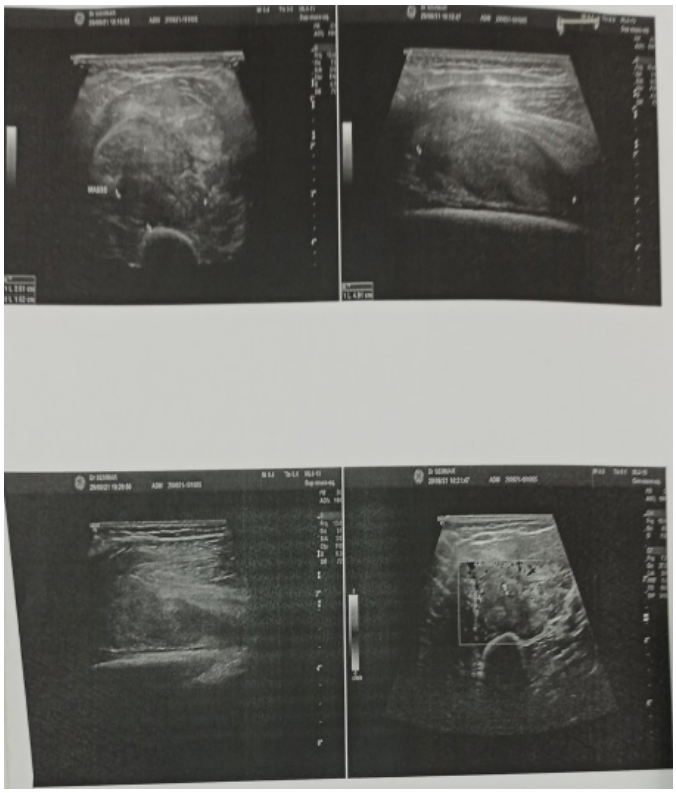
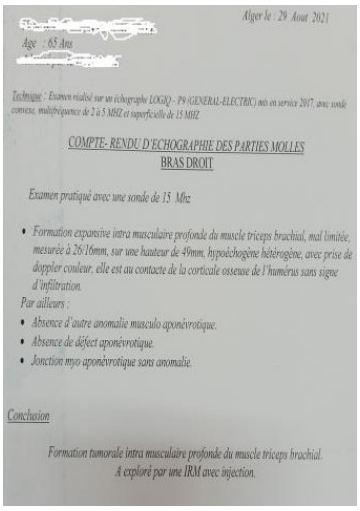


Figure 3: Aspect and ultrasound report: Concluded: Deep intramuscular tumor formation of the triceps brachii muscle.



Alger le : 29 Aout 2021

Age : 65 Ans

Technique : Examen réalisé sur un échographe LOGIQ - P9 (GENERAL-ELECTRIC) mis en service 2017, avec sonde convexe, multifréquence de 2 à 5 MHZ et superficielle de 15 MHZ

COMPTE- RENDU D'ECHOGRAPHIE DES PARTIES MOLLES
BRAS DROIT

Examen pratiqué avec une sonde de 15 Mhz

- Formation expansive intra musculaire profonde du muscle triceps brachial, mal limitée, mesurée à 26/16mm, sur une hauteur de 49mm, hypoéchogène hétérogène, avec prise de doppler couleur, elle est au contacte de la corticale osseuse de l'humerus sans signe d'infiltration.

Par ailleurs :

- Absence d'autre anomalie musculo aponévrotique.
- Absence de défect aponévrotique.
- Jonction myo aponévrotique sans anomalie.

Conclusion

Formation tumorale intra musculaire profonde du muscle triceps brachial.
A exploré par une IRM avec injection.

Figure 4: Deep intramuscular tumor formation of the triceps brachii muscle report.

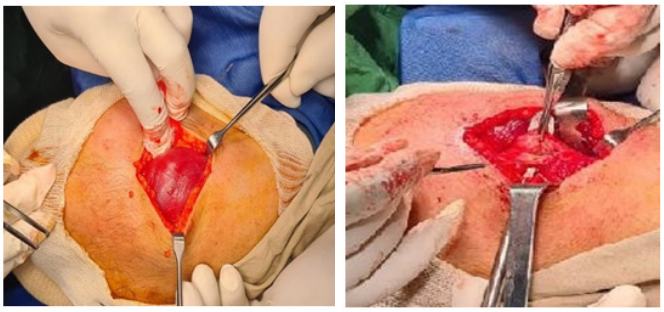


Figure 5: At the incision normal aspect of the superficial fibers of the Triceps muscle.

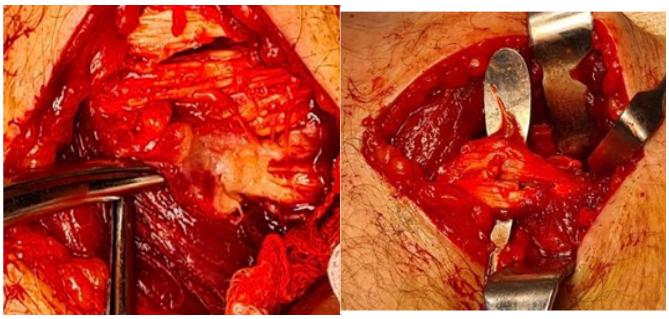


Figure 6: Encephaloid aspects of the deep muscle fibers of the triceps during surgery.

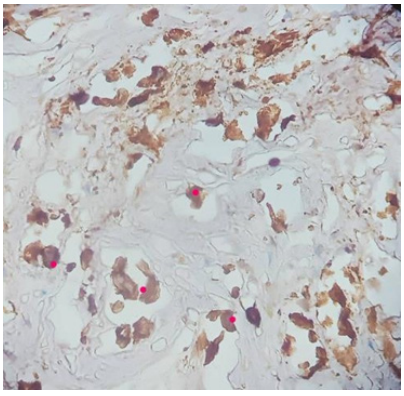


Figure 7: CK7 positive x40.

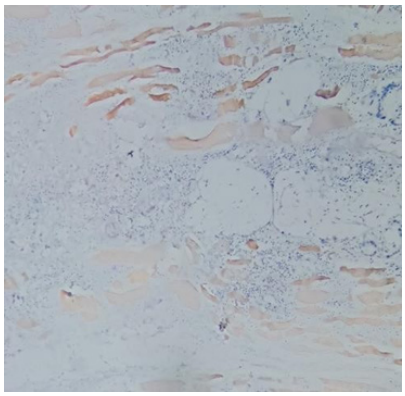


Figure 8: Negative desmin x10 (positive striated muscle internal control).

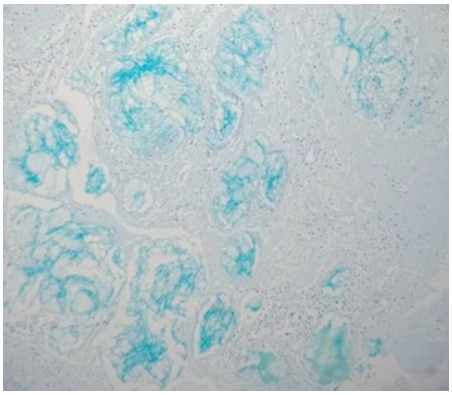


Figure 9: Pools of mucin: alcian blue (x10).

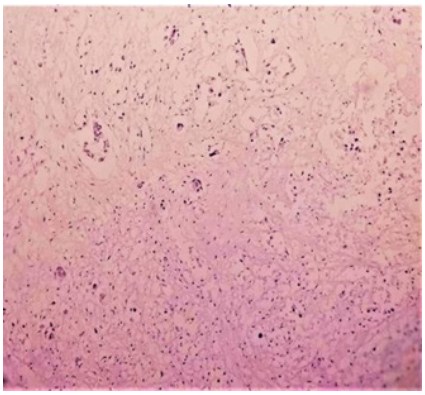


Figure 10: Hematoxylin and eosin staining (x10).

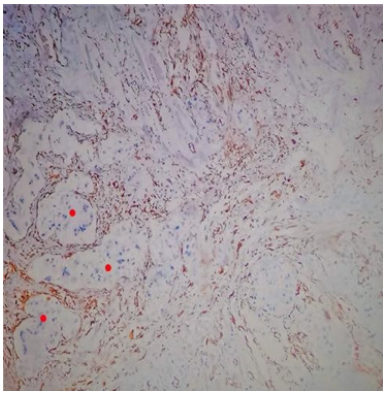
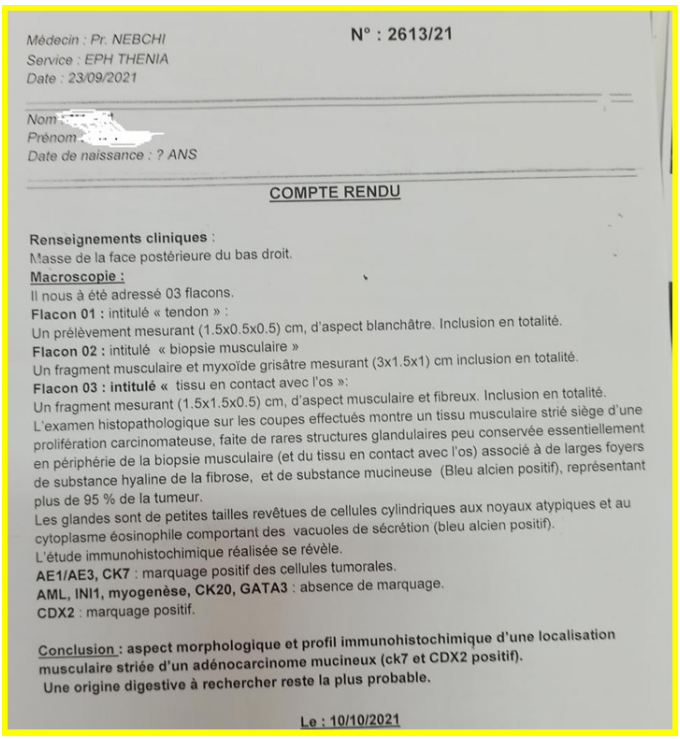


Figure 11: AML negative x10 (positive internal control).



Médecin : Pr. NEBCHI
Service : EPH THENIA
Date : 23/09/2021

N° : 2613/21

Nom
Prénom
Date de naissance : ? ANS

COMPTE RENDU

Renseignements cliniques :
Masse de la face postérieure du bas droit.
Macroscopie :
Il nous à été adressé 03 flacons.
Flacon 01 : intitulé « tendon » :
Un prélèvement mesurant (1.5x0.5x0.5) cm, d'aspect blanchâtre. Inclusion en totalité.
Flacon 02 : intitulé « biopsie musculaire »
Un fragment musculaire et myxoïde grisâtre mesurant (3x1.5x1) cm inclusion en totalité.
Flacon 03 : intitulé « tissu en contact avec l'os »:
Un fragment mesurant (1.5x1.5x0.5) cm, d'aspect musculaire et fibreux. Inclusion en totalité.
L'examen histopathologique sur les coupes effectués montre un tissu musculaire strié siège d'une prolifération carcinomateuse, faite de rares structures glandulaires peu conservée essentiellement en périphérie de la biopsie musculaire (et du tissu en contact avec l'os) associé à de larges foyers de substance hyaline de la fibrose, et de substance mucineuse (Bleu alcien positif), représentant plus de 95 % de la tumeur.
Les glandes sont de petites tailles revêtues de cellules cylindriques aux noyaux atypiques et au cytoplasme éosinophile comportant des vacuoles de sécrétion (bleu alcien positif).
L'étude immunohistochimique réalisée se révèle.
AE1/AE3, CK7 : marquage positif des cellules tumorales.
AML, INI1, myogenèse, CK20, GATA3 : absence de marquage.
CDX2 : marquage positif.

Conclusion : aspect morphologique et profil immunohistochimique d'une localisation musculaire striée d'un adénocarcinome mucineux (ck7 et CDX2 positif).
Une origine digestive à rechercher reste la plus probable.

Le : 10/10/2021

Figure 12: Report of the immunohistochemical study.

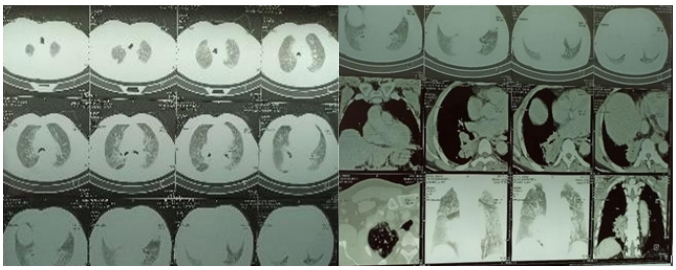
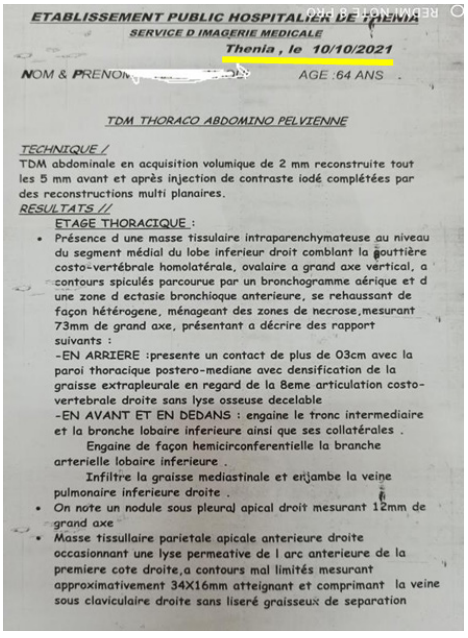


Figure 13: CT appearance.



ETABLISSEMENT PUBLIC HOSPITALIER DE THENIA
SERVICE D IMAGERIE MEDICALE
Thenia , le 10/10/2021
NOM & PRENOM AGE :64 ANS

TDM THORACO ABDOMINO PELVIENNE

TECHNIQUE /
TDM abdominale en acquisition volumique de 2 mm reconstruite tout les 5 mm avant et après injection de contraste iodé complétées par des reconstructions multi planaires.
RESULTATS //
ETAGE THORACIQUE :
- Présence d une masse tissulaire intraparenchymateuse au niveau du segment médial du lobe inferieur droit comblant la gouttière costo-vertébrale homolatérale, ovalaire a grand axe vertical, a contours spiculés parcourue par un bronchogramme aérique et d une zone d ectasie bronchioque anterieure, se rehaussant de façon hétérogene, ménageant des zones de necrose,mesurant 73mm de grand axe, présentant a décrire des rapport suivants :
-EN ARRIERE :presente un contact de plus de 03cm avec la paroi thoracique postero-mediane avec densification de la graisse extrapleurale en regard de la 8eme articulation costo-vertebrale droite sans lyse osseuse decelable
-EN AVANT ET EN DEDANS : engaine le tronc intermediaire et la bronche lobaire inferieure ainsi que ses collatérales .
Engaine de façon hemicirconferentielle la branche arterielle lobaire inferieure .
Infiltre la graisse mediastinale et enjambe la veine pulmonaire inferieure droite .
- On note un nodule sous pleural apical droit mesurant 12mm de grand axe
- Masse tissullaire parietale apicale anterieure droite occasionnant une lyse permeative de l arc anterieure de la premiere cote droite,a contours mal limités mesurant approximativement 34X16mm atteignant et comprimant la veine sous claviculaire droite sans liseré graisseux de separation

Figure 14: Thoraco-abdomino-pelvic CT report.

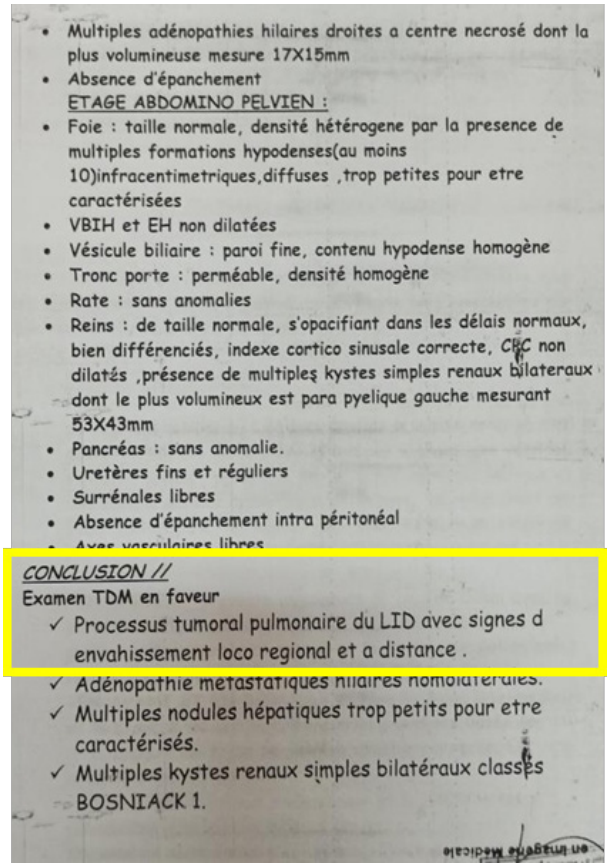


Figure 15: Thoraco-abdomino-pelvic CT report conclusion.

The tumor was classified as T2N0M1, and the patient was receiving palliative chemotherapy based on gemcitabine-cisplatin and radiotherapy. The initial response to treatment was considered satisfactory, with partial regression of the size of the primary tumour. After 7 months of evolution, there was a progression of the disease with metastases in the liver and kidneys, but without recurrence of the muscle metastasis in the deceased patient.

RESULTS AND DISCUSSION

Muscle metastases remain rare despite the importance of the striated muscle mass and the richness of its vascularization. But if the incidence of these metastases barely exceeds 1% in clinical series, it is much higher, up to 16%, in autopsy series of cancer patients [1,2]. Muscle mobility and blood flow turbulence would be mechanical factors that can inhibit tumor growth in striated muscle [3]. Similarly, elevated oxygen pressure, release of toxic oxygen free radicals, ability of skeletal muscle to scavenge lactic acid, and acidic muscle pH would be chemical and humoral factors that would protect striated muscle from tumor invasion [4-7]. Muscle metastases have been reported in patients with leukemia, lymphoma, malignant melanoma, thyroid cancer lung cancer and other neoplasias [8-12]. Bronchopulmonary cancer would be the first responsible for this type of metastasis.

Berge et al reported a frequency of muscle metastases of 1% in 747 post-mortem examinations of patients with bronchopulmonary cancer [13]. Histologically, squamous cell carcinoma and adenocarcinoma are the most frequently involved histological types [14,15].

These metastases usually manifest in a known neoplastic context. They are exceptionally revealing of the primary tumour, as in the case of our patient. They are plurifocal in 40% of cases and can theoretically affect all the muscles. However, they are more common in the psoas muscle, diaphragm, and muscles of the abdominal wall, pectoralis, deltoid, thigh muscles, intercostals, sternocleidomastoid, biceps, triceps and backbones. Clinically, these metastases can manifest as pain of varying intensity, a tumor mass syndrome associated or not with extra-articular stiffness. Imaging makes it possible to make the diagnosis of muscle tumor, but without being able to decide on its metastatic character. In ultrasound, muscle metastases appear in the form of heterogeneous hypoechoic images, more or less well limited Computed tomography reveals a mass of spontaneously hypodense tissue density, taking up the contrast heterogeneously, with the possibility of necrotic areas and calcifications. On MRI, these lesions are isodense in T1 sequence, hyperdense in T2 sequence, surrounded by peripheral edema, and their signal is strongly enhanced after injection of contrast product. However, this appearance is nonspecific and can be seen in the event of a primary tumour, abscess, hematoma or intramuscular collection. We did not perform either a CT scan or an MRI of the arms in our patient [16-18]. The anatomopathological diagnosis of muscle metastases can be made by needle biopsy, under ultrasound or CT scanning, or by surgical biopsy, then allowing en bloc excision of the tumour. The treatment of skeletal muscle metastases remains poorly codified. Surgical excision associated with local radiotherapy allows symptoms to be controlled and the quality of life of patients to be improved by reducing or eliminating muscle pain. If the primary tumor is controlled, the association with palliative chemotherapy would allow a relatively prolonged survival. Some observations have reported a partial improvement of symptoms with exclusive radiotherapy. The prognosis of muscle metastases remains pejorative, particularly during the evolution of lung cancer.

CONCLUSION

Muscle metastases from lung cancer are rare; they are exceptionally revealing. Clinically, these metastases are revealed by a tumor mass syndrome, pain with or without extra- articular stiffness. They are rare for any tumor with a reported incidence greater than one percent. The most common sites of muscle metastases are the thigh muscles, iliopsoas and paraspinous muscles Treatment is poorly codified. However, surgical excision associated with local radiotherapy allows control of symptoms and a certain improvement in the quality of life of patients. Imaging does not offer specific signs. The diagnosis is based on the anatomo-pathological study after surgical excision biopsy.

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