

Case Report

Digital acrometastase as a primary manifestation of a bronchial adenocarcinoma

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ABSTRACT

Bone metastases of the hands and feet (acrometastases) are rare. Their presentation is variable and is generally confused with certain inflammatory conditions such as rheumatoid arthritis, gout, tenosynovitis, fracture or infection (panartius, osteomyelitis). The etiology of non-digital acrometastases is common to primary tumors with bone metastases (prostate, lung, kidney, breast, thyroid, and digestive tube). However, digital acrometastases are seen almost exclusively during bronchial neoplasia. We describe the case of a 43 year-old man admitted for pain and swelling of the middle finger distal phalanx of the left hand. Etiological assessment was in favor of an unusual secondary localization of bronchial adenocarcinoma. Tumoral causes must always be evoked before any inflammatory digital symptomatology, from where the interest of a good interrogation and a targeted paraclinical assessment.

Keywords: Acrometastasis, Hand, Adenocarcinoma, Lung

INTRODUCTION

Bone metastasis of the hand and foot is rare, especially when there is a presentation at the fingertips. Digital acrometastases are seen in only 0.2% of lung carcinomas with bone metastases.^{1,2} However, acrometastases are the first symptom of occult tumor pathology in about 10% of cases.³ It is a rare phenomenon, but of high diagnostic value.

CASE PRESENTATION

A 43 year-old man, chronic smoking, having 20 pack/years, admitted to the emergency department for painful swelling of the right middle finger. The medical history dates back to a month ago by the appearance of a

gradually increasing tumefaction volume of the 3rd finger, associated with inflammatory pain not responding to nonsteroidal anti-inflammatory drugs (NSAIDs) or WHO stage 2 analgesic without history of trauma or injury, all evolving in a context of apyrexia and deterioration of general condition.. Clinical examination found swelling, redness, skin ulceration and pain at palpation of the third finger distal phalanx of the left hand (Figure 1).

A hand X-ray showed osteolysis of the distal phalanx of the third row with thickening of the opposite soft tissues (Figure 2).

Chest X-ray revealed retractable and irregular opacity of the apical segment of the lower left lobe (Figure 3).



Figure 1: Clinical image showing swelling of the left middle finger with the skin lesion.



Figure 2: Hand X-ray showing osteolysis of the distal phalanx of the 3rd finger with soft tissues hypertrophy.



Figure 3: Chest X-ray showing retractable and irregular opacity of the apical segment of the lower left lobe.

Thoracic CT showed a poorly defined tissular mass, irregular contours of tumoral appearance associated with multiple adjacent micronodules (Figure 4). Abdominal CT showed hepatic and adrenal glandes metastases.

The histological study of pulmonary biopsy was in favor of bronchial adenocarcinoma.

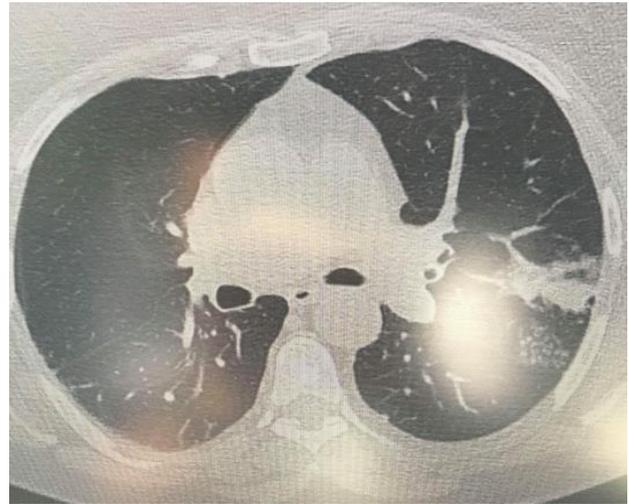


Figure 4: Cross-section thoracic CT image showing the tumor lesion as a poorly bounded tissue mass, irregular contours associated with multiple adjacent micronodules.

Two weeks after, a significant increasing volume of the concerned finger has been observed associated with more intense pain. The affected finger was amputated and the histological study confirmed the presence of bronchial adenocarcinoma cells.

DISCUSSION

Acrometastases represent 0.07 to 3% of all bone metastases.^{4,7} About 62% are located in the phalanges and 34% in the distal phalanx.^{5,8,9} The primary tumors most involved, in descending order of prevalence, are: lung, kidney, breast and digestive tract.¹⁰ Men are more affected than women.^{8,11} Tumor cells migrate to bone by haematogenous route.⁵ The pulmonary cells, unlike those coming from the digestive tract, have direct access to the distal arterial system.⁵ The most common histological type is squamous cell carcinoma, followed by adenocarcinoma, and small cell carcinoma. Cancers of the urogenital tract are often the cause of foot acrometastasis.^{6,10}

According to some authors, the hypothesis of a repetitive finger injury in some patients may play a role in the etiopathogenesis; the release of local chemotactic factors and increased local blood flow may facilitate cell migration and bone adhesion.¹² Elsewhere, some factors were mentioned as a disruption of temperature gradients, hormonal and immune factors.¹⁴ Pain is the main symptom.⁵ Its intensity is variable, it can evolve rapidly, attracting all the attention of the patient, otherwise, it can be insidious and moderate in the beginning, but persistent and resistant to analgesics later.¹⁵

The finger can present itself as a digital infection, with pain, heat, erythema and edema.¹⁶ In fact, local swelling is present in most cases. Skin lesions are much rarer.⁵ Cutaneous ulcers are more frequent in advanced metastases and are often associated with a primary malignant skin tumor.⁴

Radiological investigations show at an early stage, minimal lesions: phalangeal osteopenia or soft tissue thickening. At an advanced stage, localized, irregular and poorly limited osteolysis with a slight subchondral bone. The lesions are rarely osteocondensant or mixed.⁸

Other possible differential diagnoses can be evoked: cartilaginous matrix tumors, rheumatoid arthritis and gout.^{9,14,17} The absence of a known primary neoplasia, should lead to perform a systematic chest x-ray or even a chest CT scan to look for bronchopulmonary neoplasia even if the patient is asymptomatic.⁸

The management of these patients depends on the extent of the primary tumor. In case of controllable primary tumor with single metastasis, surgical excision can be considered. Curative radiotherapy (in the absence of associated skin ulceration) sometimes allows a calcification of the bone lesion. In the case of multiple metastases, palliative treatment is indicated, with radiotherapy, analgesics, anti-inflammatory drugs.^{8,18,19} Bisphosphonates or denosumab can also be useful in bone metastases.^{20,21} The prognosis of these patients is poor, with a survival rate of only 15% at the end of the first year.^{17,20}

CONCLUSION

As this case illustrates, we should consider the diagnostic hypothesis of lung adenocarcinoma in patients with persistent digital complaints, and perform a pulmonary assessment. It is a rare pathology and sometimes difficult to diagnose. Its prognosis is particularly bleak and the treatment is essentially palliative.

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