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Case Report

Skin metastasis revealing lung carcinoma [☆]

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ABSTRACT

Skin metastasis is a relatively rare complication of pulmonary carcinoma. The clinical features are varied and can present as sclerodermoid, bullous, erysipeloid, or alopecia, but they can also manifest as skin nodules, as in our case. We report a case of a 66-year-old man exhibiting this unusual manifestation. This case report aims to review and describe different findings in ultrasound, CT and pathology, to establish the diagnosis of pulmonary carcinoma manifested by skin metastasis

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Introduction

Skin metastases could be the earliest indication of lung cancer. Despite their rarity, unusual skin lesions should always be taken seriously, especially in patients with risk factors. Ultrasound can describe skin lesions, but histopathology and CT scans are essential for making the diagnosis of lung cancer and initiating appropriate treatment.

Clinical history

We reported the case of a 66-year-old man with a 32-year history of smoking and no familial history of cancer. He presented with bilateral axillary and thoracic subcutaneous

nodules for the past 2 months, without signs of fistulization or abscess (Fig. 1A). These nodules were associated with unquantified weight loss and asthenia. Physical examination revealed painless, hard nodules with well-defined, regular borders, adherent to soft tissues. The largest was located on the right anterolateral thoracic region (Fig. 1B), measuring approximately 2 cm. All biological tests were normal.

Ultrasonography of the right anterolateral thoracic nodule was performed, revealing a heterogeneous hypoechoic nodule with a long axis parallel to the skin, measuring 18 mm (Fig. 2A), and peripheral hypervascularization on Doppler imaging (Fig. 2B).

An echo-guided biopsy of a thoracic nodule was conducted (Figs. 3A and B), and histopathology confirmed the metastatic nature of the cells, indicating a moderately differentiated adenocarcinomatous process of the lung.

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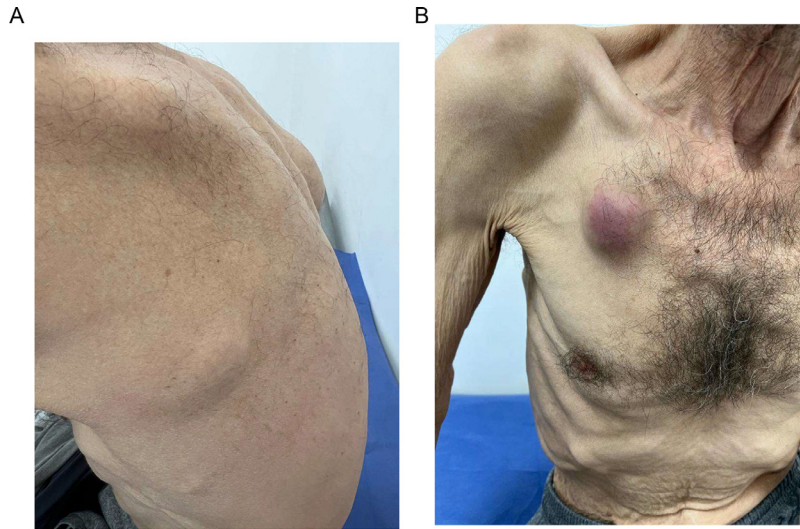


Fig. 1 - (A) Lateral image showing a subcutaneous nodule. (B) Frontal image showing the largest subcutaneous nodule on the anterolateral chest wall with inflammatory signs.

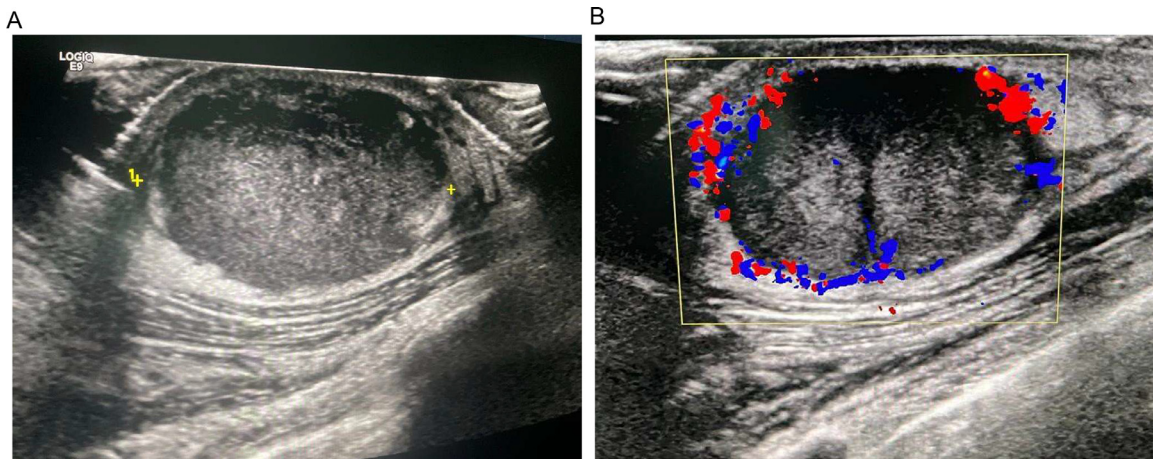


Fig. 2 - (A) Ultrasound of the anterolateral thoracic nodule showing its heterogeneous hypoechoic appearance. (B) Doppler study of the anterolateral thoracic nodule showing peripheral vascularization.

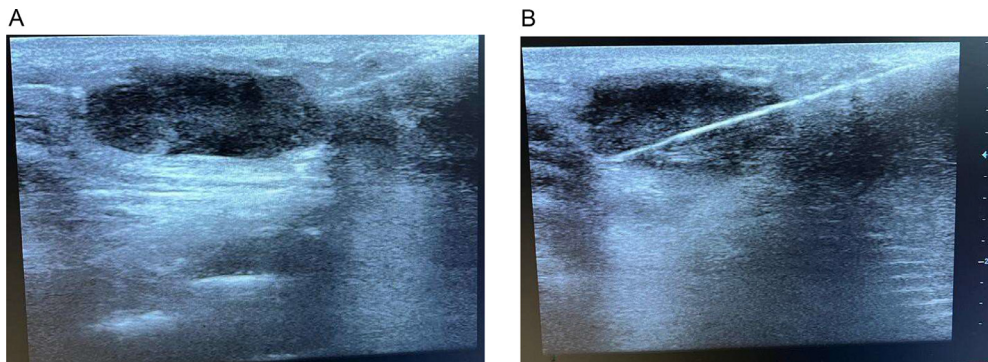


Fig. 3 - (A and B) Ultrasound-guided biopsy of the metastatic nodule.

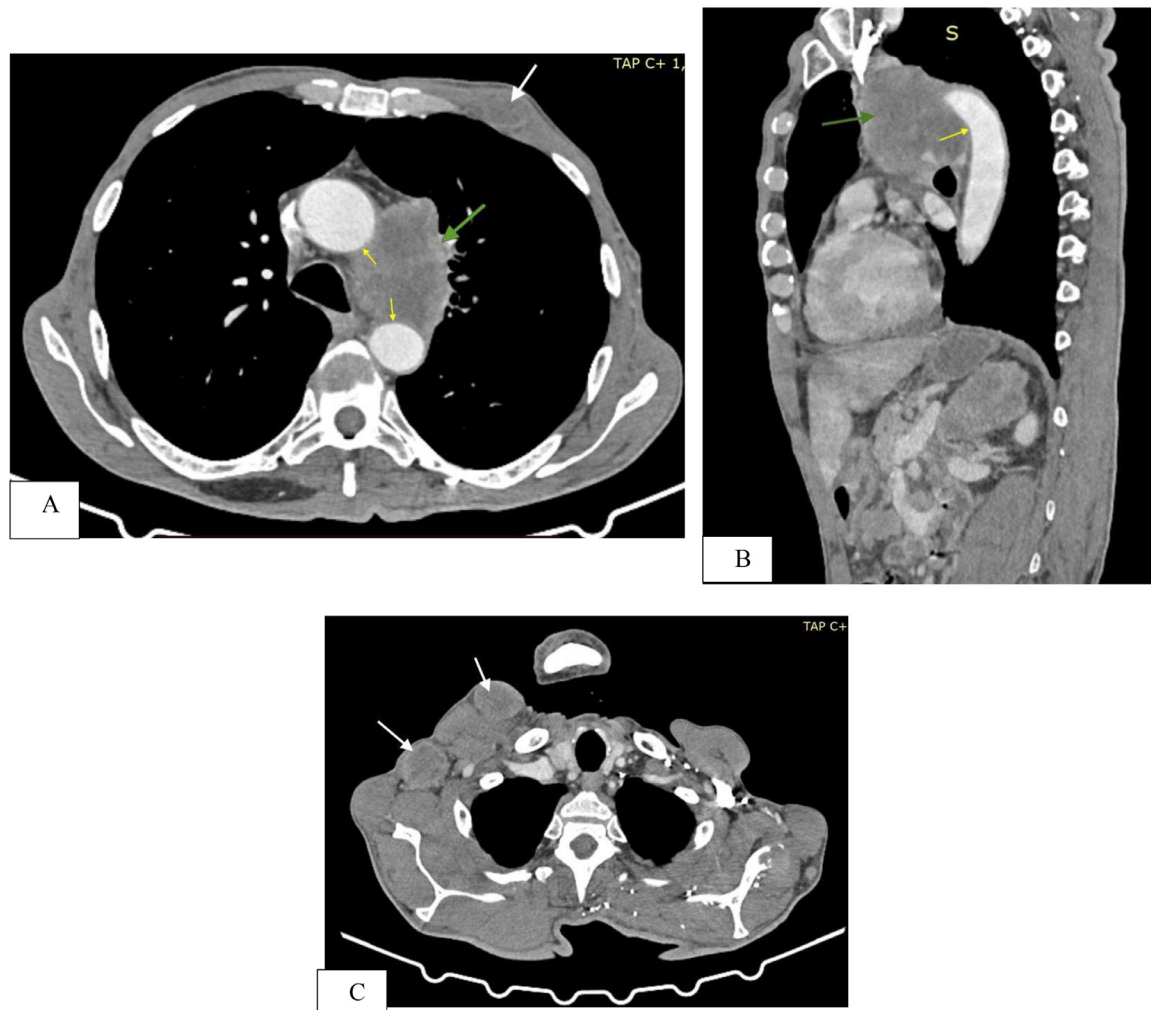


Fig. 4 – CT scan in portal phase, axial (A) and sagittal (B) images demonstrating a mass of upper and middle left mediastinum (green arrow) coming into contact with the aorta (yellow arrow). (C) CT scan in portal phase, axial image demonstrating bilateral hypodense masses of thoracic soft tissues.

A CT scan was performed (Figs. 4A-C), demonstrating a mass in the upper and middle left mediastinum (green arrow) with irregular borders, moderate and heterogeneous enhancement after contrast injection, measuring 65.7×45.8 mm on the axial sections, coming into contact with the aorta (yellow arrow), the proximal part of the subclavian artery, and the left pulmonary artery, which appeared small but remained patent. Bilateral hypodense masses of thoracic soft tissues (white arrow) were also observed, containing thick septa with axillary lymphadenopathy. Bronchial endoscopy found a normal macroscopic appearance.

Discussion

Most of the time, cutaneous metastasis occurs late in the course of the disease, following the initial diagnosis of the primary internal malignancy. However, in very few cases, skin metastasis develops concurrently with the primary malignancy or even before its identification. According to some re-

ports, the skin is the first site of metastasis in 25% of instances of lung cancer [1]. Nevertheless, many studies suggest that the skin ranks as the 13th most common site for lung cancer metastasis [2].

The primary causes of lung cancer are smoking and toxin exposure. As the condition worsens, tumors may develop metastases in various body areas, such as lymph nodes, bones, brain, liver, adrenal glands, and skin.

Skin metastases can manifest as nodules, as in our case, or in forms such as erysipeloid, sclerodermoid, alopecia neoplastica, or in an inflammatory or bullous form [3]. They typically appear on the chest, neck, or face. Cutaneous metastases are most commonly found near the primary cancer. Additionally, lung cancers in the upper lobes have a higher propensity to spread to the skin.

Recent studies have identified distinct genes and gene signatures that regulate specific tropisms of a primary tumor [4]. It should also be noted that skin metastases can occur in all histologic subtypes of lung cancer [5].

These lesions can be solitary or multiple and may cause itching, bleeding, or discomfort. Although the literature de-

scribes skin metastatic nodules as painless, in some cases, they can be painful.

It is important to remember that skin metastases often indicate an advanced stage of cancer, suggesting that lung cancer has already metastasized to other organs. The occurrence of skin metastases may point to a rapid progression of the disease.

A skin biopsy is frequently required to diagnose lung cancer, determining the presence of cancer cells. A tissue sample is removed and analyzed under a microscope. Other examinations, such as blood tests, X-rays, or chest scans, may be performed to assess the severity of the condition and confirm the diagnosis of lung cancer.

When skin metastases are the initial sign of lung cancer, treatment will be tailored to each unique situation after diagnosis. Treatment options may include surgery to remove the skin lesions, radiation therapy to target the skin tumors, chemotherapy, or immunotherapy to address the underlying lung cancer. The approach should be multidisciplinary, involving oncologists, dermatologists, and other specialists.

Early detection and prompt treatment are crucial for improving outcomes. Regular health exams, which should include lung cancer screening for those at high risk, can aid in the early identification and effective treatment of the condition.

According to reports, patients typically survive for 5–6 months after the first appearance of skin metastases [2]. The prognosis is poorer in cases where small-cell lung carcinoma is the primary cancer and in cases with extracutaneous metastases [6].

Conclusion

It should be noted that skin metastases are a rare but significant early symptom of lung cancer. Prompt identification and

appropriate therapy are essential for lung cancer patients who have the potential for skin metastases. Treating skin metastases within the context of lung cancer can contribute to improved patient outcomes and quality of life through a comprehensive strategy and early intervention.

Patient consent

The authors confirm that written patient consent for publication has been obtained and that the individuals being reported on are aware of the possible consequences of the reporting.

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