

Cutaneous Metastasis as the First Symptom: An Uncommon Presentation of Squamous Cell Lung Cancer

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To the Editor: Cutaneous metastasis of the internal malignancy is unusual. A previous study has revealed that the incidence of cutaneous metastasis is only about 1%.^[1] Lung cancer is considered to be one of the most frequent sources of skin metastasis, especially in males.^[2] Here, we reported a case with cutaneous metastases from squamous cell lung cancer.

An 80-year-old male, a chronic smoker for 60 years with a past medical history of chronic obstructive pulmonary disease, was admitted to Beijing Chaoyang Hospital on July 21, 2015, for the symptom of fast-growing multiple cutaneous nodules, which had developed over the past 2 weeks. The patient had occasional hemoptysis, but no dyspnea, fever, weight loss, and night sweats. The physical examination was normal except for multiple cutaneous lesions on the skin (one lesion each on the face, left index finger tip, right back, and left thumb fingertip and four on both lower limbs). The cutaneous lesions were of varying sizes (range: 0.5–3.0 cm) and were tender, firm, and growing from the subcutaneous tissue [Figure 1a and 1b]. The laboratory tests were unremarkable apart from the mildly elevated carbohydrate antigen 199 (32.6 U/ml; normal range: 0–30.9 U/ml). The chest computed tomography (CT) showed right lower lobe mass with an irregular cavity, bronchial stenosis, mediastinal and right hilar lymphadenopathy [Figure 1c]. The whole body ¹⁸F-fluorodeoxyglucose positron emission tomography/CT imaging showed hypermetabolic activities in the lower lobe of the right lung, mediastinal and right hilar lymph nodes, bilateral pleura, liver, spleen, bones, and multiple subcutaneous skin nodules [Figure 1d]. As the patient rejected bronchoscopy, the biopsies of skin lesions on the face and left index fingertip were performed first. Pathological and immunohistological examination of the specimens showed a cutaneous involvement of squamous cell carcinoma [Figure 1e and 1f]. The moderately well-differentiated squamous cell carcinoma was confirmed by percutaneous lung biopsy afterward. Biopsy materials were immunohistologically negative for Napsin A and thyroid transcription factor-1, and positive for cytokeratin 5/6, p40, and p63. This patient was diagnosed as squamous cell lung cancer with multiple distant organ metastases eventually. Unfortunately, he had given up further treatment and died one month later.

Lung cancer is the most common cause of death by malignancy in China. Although the distant metastasis of lung cancer is usual,

skin involvement is infrequent. The incidence of cutaneous metastasis in lung cancer is approximately 0.2–3.1%.^[2] For different histologic types of lung cancer, discrepancies in the frequency of skin metastasis could be found. Some literatures reported that the most common histologic type causing skin metastasis was adenocarcinoma, while others reported that it could be squamous cell carcinoma, just like this case.^[1,3] Although the small cell carcinoma was usually considered to metastasize to distant organs easily and early, the incidence of skin involvement was really low. The reasons for the discrepancies in skin metastasis rate remain unclear.

The cutaneous metastases were often detected after initial diagnosis of the primary cancer and occurred as a late event in the course of disease. In our case, skin problem was the chief complaint. Comparing with the symptoms from the primary cancer or other organs with metastasis, skin-related symptoms as the chief complaints were only observed in about 20–40% of the patients with cutaneous involvement. Skin metastasis might develop as the first sign of the malignancy in a few cases and it should be diagnosed at the same time or even before the primary cancer was detected.^[3]

Cutaneous metastases of lung cancer lack characteristics of clinical presentation. Most literatures often described skin metastases as relatively fixed nodules of the natures of solitary or multiple, painless, rounded, and varied in sizes. They were often covered with normal skin, and other clinical appearances included ulcerated, vasculitic, erysipeloides, and bullous forms.^[1-3] Cutaneous metastases from internal malignancy can be located anywhere on the skin, especially in a region near the primary tumor. However, Chiu *et al.*^[4] found that compared with other cancers, skin metastases from lung cancer seemed to have a greater tendency to spread to the scalp. Some studies also showed similar findings.

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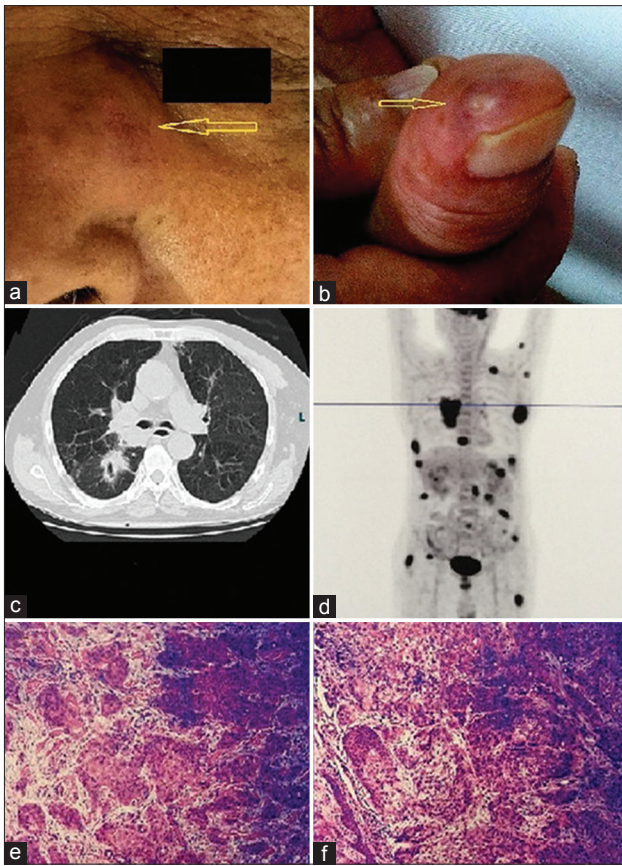


Figure 1: The nodular skin lesions on the face (a) and left thumb fingertip (b). (c) The chest CT showed right lower lobe mass with an irregular cavity, bronchial stenosis, mediastinal and right hilar lymphadenopathy; and (d) the whole body ^{18}F -fluorodeoxyglucose positron emission tomography/computed tomography imaging showed the hypermetabolic activities in the lower lobe of the right lung, mediastinal and right hilar lymph nodes, bilateral pleura, liver, spleen, bones, multiple subcutaneous, and skin nodules. (e and f) The pathological examination showed moderately well-differentiated squamous cell carcinoma (Hematoxylin and eosin staining, Original magnification $\times 25$).

This interesting feature might be related to the rich blood flow and high temperature in the head.^[2,3] Furthermore, other frequent sites of skin lesions include chest wall, back, abdomen wall, and extremities. In this case, the skin nodules with varied size could

be seen on the face, lower limbs, right back, and fingertip. Skin around the lesions was congestive and swelling, and the patient had severe pain in nodular cutaneous lesions. The pain caused by skin metastases was uncommon, which might be due to malignancy invasion of the dermis and subcutaneous tissues.

Cutaneous metastasis from lung cancer usually indicates a poor prognosis. The survival time of patients initially presenting with cutaneous metastasis seemed to be less than that of patients presenting with cutaneous metastasis during later stage.^[2] The patient in our case only survived for one month without treatments. Surgical operations might be useful for patients with solitary skin lesion, but may not have the effect for patients with multiple cutaneous metastases. As the illness was probably associated with an advanced neoplastic process with metastasis to other organs, a better survival period of the patients should depend on an appropriate chemotherapeutic and supportive care.^[5] Clinicians should be familiar with manifestations of skin metastasis in detecting new and aggravating cancer, and a biopsy of suspicious skin lesion is helpful for identifying histological type of primary cancer and also for the administration of treatment strategy.

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Conflicts of interest

There are no conflicts of interest.

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