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Scalp metastasis as an initial presentation of lung adenocarcinoma : A case report and literature review



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ABSTRACT

INTRODUCTION: Cutaneous metastasis from primary visceral malignancy is a relatively uncommon clinical entity, with a reported incidence of 0.22%–10% among various series. However, the presence of cutaneous metastasis as the first sign of a clinically silent visceral cancer is exceedingly rare.

PRESENTATION OF CASE: We describe here a case of an asymptomatic male patient who presented with a solitary scalp metastasis as the initial manifestation of an underlying lung cancer. Diagnostic evaluation revealed advanced disease.

DISCUSSION: The report emphasizes that physicians should be aware of this rare clinical entity, and appropriate investigation should be arranged for early diagnosis and initiation of the appropriate treatment. The occurrence of skin lesions in lung cancer announces an ominous prognosis.

CONCLUSION: We conclude that the possibility of metastatic skin disease should always be considered in the differential diagnosis in patients with a history of smoking or lung cancer presenting with cutaneous nodules.

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1. Introduction

Cutaneous metastasis from a primary visceral malignancy is an uncommon entity, with an incidence ranging from 0.2%–10% [1,2]. It may occur due to direct extension of the tumor as a local metastasis or as a distant metastasis [3]. Generally, cutaneous metastasis develops after initial diagnosis of the primary internal malignancy and later in the course of the disease. In very rare cases, it may occur at the same time or before the primary cancer has been detected [4]. Skin metastasis from lung cancer is a rare clinical entity that has been reported to occur in 0.22%–12% of patients with lung cancer [1,2,5]. Skin metastasis as the initial and sole manifestation of an underlying lung cancer is a very rare occurrence [6].

Most common sites of skin metastases from lung cancer are the chest, abdomen, head and neck. They may rarely appear in the form of solitary lesion on the scalp [7]. Compared to other malignancies, lung cancer is the fastest in developing skin metastases after initial diagnosis [8]. Cutaneous metastasis of lung cancer are physically indistinguishable from those due to carcinoma originating elsewhere in the body. Lung cancer should always be considered in the differential diagnosis of patients with nodular skin lesions. With a

very poor prognosis, the median survival time after the diagnosis of the cutaneous metastasis is between 2.9–4.9 months [9].

Here, we describe an exceedingly rare case of an asymptomatic male patient who presented with a solitary scalp metastasis as the initial manifestation of an underlying adenocarcinoma lung. Diagnostic evaluation and management are discussed along with a review of the literature.

We state that the work has been reported in line with the SCARE criteria [10].

2. Case report

A 51 years old male presented to surgery outdoor patient department with a 1 month history of a slowly growing, painless nodule in his scalp. He was a heavy smoker but had no history of lung disease. He denied any respiratory symptoms, fever, or weight loss, and his general condition was good. His blood results were as follows: haemoglobin 11.0 g/dl; total white cell count $18.0 \times 10^3/\mu\text{l}$ with neutrophilia; platelets were normal, ESR was 110 mm/h.

Clinical examination revealed a painless, movable, nonulcerated nodule in scalp measuring approximately 0.5×1.0 cm. There were no signs of infection and the overlying skin was normal (Fig. 1). The Fine needle aspiration cytology (FNAC) was performed from the scalp lesion showed deposits of adenocarcinoma (Fig. 2). Further investigations with chest X-ray showed a large mass occupying the upper lobe of the right lung (Fig. 3). Subsequent computed tomography (CT) showed a large mass involving the right upper lobe associated with extensive mediastinal lymphadenopathy (Fig. 4).

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Fig. 1. Photograph showing a non ulcerated nodule of 0.5 × 1.0 cm in scalp with overlying normal skin.

A CT-guided biopsy of the lung tumor confirmed the presence of adenocarcinoma lung. Tumor cells were also positive for periodic acid Schiff (PAS). Immunohistochemically, the tumor cells were strongly positive for TTF-1 and Napsin A and focally positive EGFR, further corroborating the diagnosis (Figs. 5 and 6). The patient was advised to start chemotherapy and radiotherapy. The patient was treated with palliative chemotherapy with 6 cycles of Carboplatin and Gemcitabine and put on maintenance treatment with Pemetrexed. Unfortunately, there were no improvements on either the cutaneous metastatic mass or his general condition.

3. Discussion

Dissemination of visceral malignancies to the skin is rather rare and usually occurs in a later stage of the disease. However, cutaneous metastases may be the first indication of the clinically silent visceral malignancies. In case of lung cancer, metastasis to the skin is much less frequent than that to other organs (brain, bone, liver



Fig. 3. Chest x ray showing a mass in right upper lobe.

and adrenal glands). In a recent meta-analysis of six studies containing over 20 000 patients with cutaneous metastasis, the overall incidence from all visceral malignancies was estimated to be 5.3% [11]. A retrospective study in 2012 indicated that 2.8% of 2130 patients with advanced non-small cell lung cancer (NSCLC) showed cutaneous metastases as an initial presentation [12]. In a retrospective study by Lookingbill et al. including 7316 cancer patients, skin involvement as a presenting sign was seen in only 0.8% [3].

Scalp metastasis, however, is unusual in primary lung cancer. According to the meta-analysis mentioned earlier [4], scalp metastasis constituted 6.9% of all cutaneous metastasis from various visceral malignancies [11]. The reasons proposed for a tendency to scalp metastasis include the high degree of vascularity, immobility, and the warmth of this site [12].

Clinically, lung cancer may be initially detected by cutaneous metastasis, since the primary lung lesion often remains quiescent, such as in our case. The lung and breast carcinomas are the most common primaries that send cutaneous metastasis in men and women, respectively. The head and neck region and the anterior chest are the areas of greatest predilection in men. The anterior

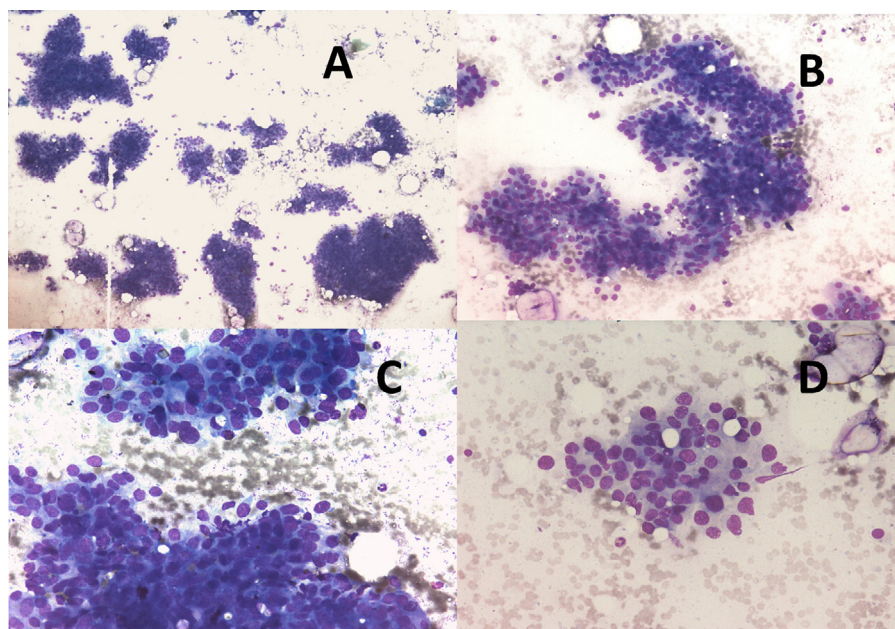


Fig. 2. Fine needle aspiration cytology showing deposits of adenocarcinoma on giemsa stained smears. (A-40X, B-100X, C-200X, D-200X).

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