

Development of metastatic lung adenocarcinoma in a twenty-year-old skin graft site on the scalp: A case report

Dear Editor,

Cutaneous metastasis from lung adenocarcinoma is an unusual presenting symptom, occurring in 1% to 12%, and it is more prone to misdiagnosis, especially in women.¹ Moreover, a mass that develops in a skin graft site where basal cell carcinoma (BCC) was previously removed is highly likely to be misdiagnosed as a hypertrophic scar or a recurrence of BCC. Herein, we report a rare metastatic lung adenocarcinoma of the scalp that developed in a twenty-year-old skin graft site of BCC.

A 71-year-old woman presented with a skin-coloured solitary nodule on the scalp of 2-weeks duration [Figure 1]. She was diagnosed with lung adenocarcinoma three months prior and underwent a staging workup. Interestingly, the nodule developed where a split-thickness skin graft (STSG) surgery was performed for BCC twenty years ago. The donor site of the STSG was the right anterolateral thigh, and the

surgical wound of the thigh had healed well. Initially, we suspected a hypertrophic scar after surgery or a recurrence of previous BCC. Skin biopsy from the scalp nodule revealed a poorly circumscribed infiltrating tumour with atypical epithelioid cells and gland like structures [Figure 2]. The immunohistochemistry test for thyroid transcription factor-1 showed a negative result. Based on the pathology findings, the patient was diagnosed with cutaneous metastatic adenocarcinoma arising from lung adenocarcinoma. Before the skin biopsy, a PET/CT scan hinted at the possibility of lung cancer that might not have spread to other parts of the body. However, following the skin biopsy, which confirmed metastasis, the patient’s diagnosis was revised to stage IVA.

In the case of skin metastasis with an unknown primary site, it is important to consider a wide-range of differential diagnoses.² There are a few reported cases of metastatic adenocarcinoma in old scars.³ Among them, cutaneous metastasis from colonic adenocarcinoma in an old operative



Figure 1: A skin-coloured firm nodule on the scalp overlying the old graft site.

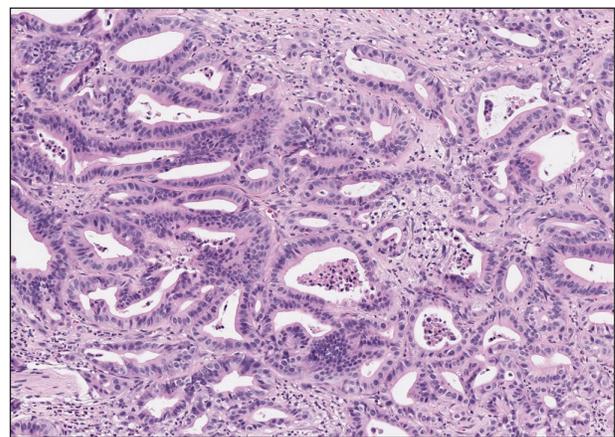


Figure 2: Biopsy showing a poorly circumscribed infiltrating tumor which is characterized by large and irregularly shaped atypical epithelioid cells and the presence of gland-like structures (hematoxylin and eosin, X200).

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scar, such as a hysterectomy scar on the abdomen, is the most common, with direct implantation as a possible mechanism.⁴ Our case differs from previous reports as it involves metastatic lung adenocarcinoma.

The exact pathogenesis of cutaneous metastasis in old operative scars remains unclear. A possible mechanism includes the haematogenous spread of lung tumour cells rather than direct implantation.⁵ The alteration in the microscopic anatomy around the scar due to an altered adhesion molecule profile or altered local immunosurveillance mechanism may also contribute to the predilection for metastatic deposits on the old operative scars.³ In addition, owing to the increased scalp vasculature, the haematogenous route may be the more likely option for cutaneous metastasis to that site.⁶

We believe this exceptional presentation should prompt the inclusion of cutaneous metastasis in the differential diagnosis of masses that occur at a skin graft site, in addition to tumour recurrence. Furthermore, BCC exhibits a high recurrence rate, primarily linked to incomplete surgical resection.⁷ To validate our findings, further investigations are required.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent.

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Conflicts of interest

There are no conflicts of interest.

Use of artificial intelligence (AI)-assisted technology for manuscript preparation

The authors confirm that there was no use of artificial intelligence (AI)-assisted technology for assisting in the writing or editing of the manuscript and no images were manipulated using AI.

Y.H. Kim, Y.C. Kim

Department of Dermatology, Ajou University Hospital, World Cup-ro, Suwon, Korea

Corresponding author:

Prof. You Chan Kim,
Department of Dermatology, Ajou University Hospital, World Cup-ro, Suwon, Korea.
maychan@ajou.ac.kr

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