

Case Letter

Lung Cancer–Associated Scalp Hair Loss: A Rare Cause of Secondary Alopecia Neoplastica

To the Editor:

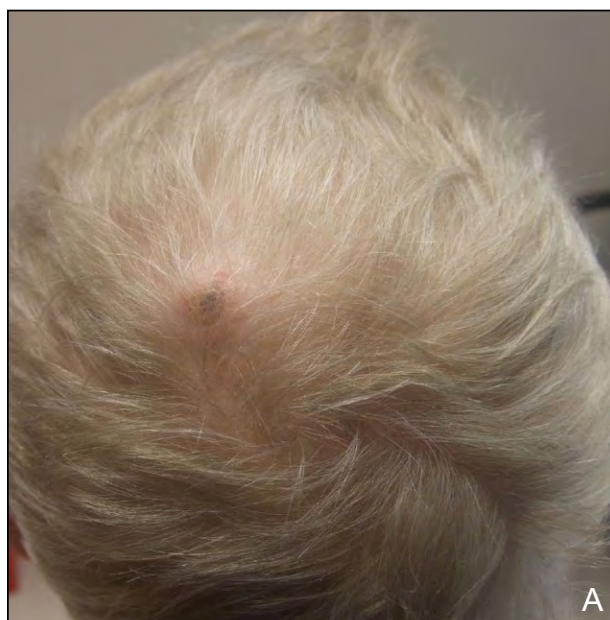
Cutaneous metastases from visceral cancers can herald the discovery of persistent or recurrent neoplastic disease in an oncology patient. Although less common, tumor metastases to the skin can be the presenting manifestation of an undiagnosed systemic malignancy in a previously cancer-free individual. Dessinioti et al¹ reported a previously healthy 79-year-old man who had a visceral malignancy that initially presented as 2 asymptomatic, rapidly growing, indurated cutaneous lesions; one lesion had alopecia associated with partially ulcerated and crusted nodules on the scalp and the second lesion was a smaller similar nodule on the chin.¹ I also had the opportunity to evaluate an oncology patient with lung cancer–associated alopecia.

A 74-year-old man with a history of myelodysplastic syndrome that recently had progressed to acute myelogenous leukemia in blast crisis presented with shortness of breath, weight loss of 30 lb during the prior month, and an asymptomatic area of alopecia on his left posterior scalp of less than 2 months' duration (Figure). Within the area of new-onset alopecia there was a partially ulcerated and crusted, erythematous, indurated plaque. A skin biopsy of the hairless plaque showed metastatic cancer consistent with primary lung cancer. A subsequent chest roentgenogram revealed a mass in the upper lobe of the right lung. A lung biopsy obtained during bronchoscopy showed a previously undiagnosed primary pulmonary adenocarcinoma.

In 1949 neoplasm-associated scalp hair loss initially was described by Ronchese² in the report of a 41-year-old woman with alopecia due to metastases from adenocarcinoma of the breast. Subsequently, in 1961 Cohen et al³ reported 3 women with hair loss resembling alopecia areata that was secondary to breast cancer cutaneous scalp metastases; they coined

the term *alopecia neoplastica*. The authors emphasized that the areas of hair loss were distinctly reddened.³

More recently, alopecia neoplastica has been classified as either primary or secondary. Primary



Distant (A) and closer (B) views of the posterior scalp of a man with previously undiagnosed lung cancer who initially presented with an asymptomatic, indurated, partially ulcerated, erythematous plaque of secondary alopecia neoplastica.

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alopecia neoplastica (PAN) refers to tumor-related hair loss of the scalp in which the associated malignancy originates in the scalp skin. Neoplasms causing PAN include angiosarcoma, basal cell carcinoma, cutaneous T-cell lymphoma, dermatofibrosarcoma protuberans, extramammary Paget disease, malignant melanoma, and squamous cell carcinoma.⁴

Secondary alopecia neoplastica (SAN) refers to neoplasm-associated hair loss of the scalp caused by the infiltration of tumor cells that have metastasized to the scalp from a visceral malignancy. According to a PubMed search of articles indexed for MEDLINE in the English-language literature using the terms *alopecia neoplastica* and *breast cancer*, 85% (23/27) of women with SAN had an underlying breast cancer.^{1,3,5,7} Additionally, patients with breast carcinoma-associated SAN have been reported in the French literature.⁸⁻¹⁰ Less commonly, either placental trophoblastic tumor or cancer of the cervix, colon, or stomach was the primary malignancy associated with SAN.⁵ Although rare, SAN also has been observed in 2 men with a presenting feature of alopecia for a previously undiagnosed lung cancer (the patient described here and the patient reported by Dessinioti et al¹).

Secondary alopecia neoplastica presents as 1 or more patches or plaques of hair loss, ranging in area from 2 to 20 cm on the scalp. The onset of alopecia rarely preceded (2 women and 2 men) or coincided with (1 woman) the discovery of the patient's unsuspected systemic malignancy in 17% (5/29) of patients with SAN.^{1,5} Erythema within the area of hair loss, which was observed in 41% (12/29) of these patients, may be a useful clinical feature to differentiate SAN from other causes of scalp alopecia.^{1,3,5,7} In addition, more recent reports emphasize that certain morphologic findings, such as areas remaining bald following chemotherapy or alopecia with multiple overlying telangiectases, may be a clinical clue to scalp metastasis and SAN in oncology patients with breast cancer.^{6,7}

In summary, neoplasm-associated scalp hair loss may be caused by either a tumor originating in the scalp (PAN) or visceral malignancies that metastasize to the scalp (SAN). Lung cancer is a rare cause of malignancy-related scalp alopecia; however, pulmonary carcinoma-associated SAN was the presenting

manifestation of the previously unsuspected neoplasm in 2 men (current report and report by Dessinioti et al¹). In contrast, metastatic breast carcinoma is the most frequently associated neoplasm in oncology patients with SAN¹⁻¹⁰; therefore, the new onset of unexplained scalp alopecia in a breast cancer patient should prompt the clinician to entertain the possibility of SAN and consider additional evaluation to confirm or exclude the diagnosis of metastatic neoplastic disease.

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