Cutaneous Metastases From Esophageal Adenocarcinoma on the Scalp

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PRACTICE **POINTS**

- In the setting of underlying esophageal adenocarcinoma, metastatic spread to the scalp should be considered in the differential diagnosis for any suspicious scalp lesions.
- Coupling histopathology with immunohistochemical stains may aid in the diagnosis for cutaneous metastasis of esophageal adenocarcinoma.

To the Editor:

A 59-year-old man presented with a lesion on the right frontal scalp of 4 months' duration and a lesion on the left frontal scalp of 1 month's duration. Both lesions were tender, bleeding, nonhealing, and growing in size. The patient reported no improvement with the use of triple antibiotic ointment. He denied any associated symptoms or trauma to the affected areas. He had a history of stage IV esophageal adenocarcinoma that initially had been surgically removed 6 years prior but metastasized to the lungs and bone. The patient subsequently underwent treatment with FOLFOX (folinic acid, fluorouracil, oxaliplatin), trastuzumab, and radiation therapy.

Physical examination revealed a hyperkeratotic pink nodule with a central erosion and crust on the right frontal scalp measuring 1.5×2 cm in diameter (Figure 1A). The left frontal scalp lesion was a smooth pearly papule measuring 5×5 mm in diameter (Figure 1B). The differential diagnosis included basal cell carcinoma, squamous cell carcinoma, and cutaneous metastases from esophageal adenocarcinoma. Shave biopsies were taken of both scalp lesions.

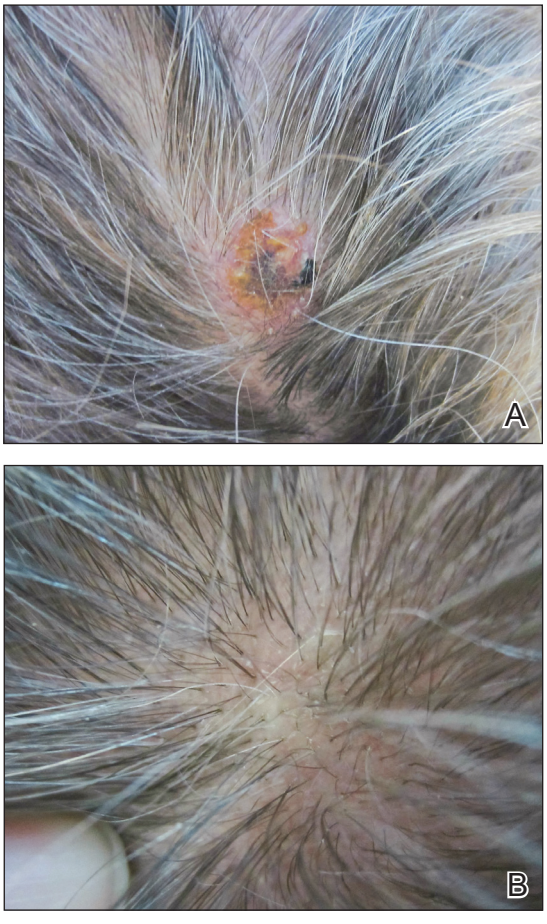

FIGURE 1. Scalp metastasis of esophageal carcinoma. A, Hyperkeratotic pink nodule with a central erosion and crust on the right frontal scalp. B, Smooth pearly papule on the left frontal scalp.

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Histologic examination of both scalp lesions demonstrated a dermal gland-forming neoplasm with an infiltrative distribution that was comprised of irregular cribriform glands containing cellular debris (Figure 2). The cells of interest were enlarged and contained pleomorphic crowded nuclei that formed aberrant mitotic division figures. Both biopsies were positive for cytokeratin 7 and negative for cytokeratin 20 and CDX2. The final diagnosis for both scalp lesions was poorly differentiated adenocarcinoma, which was most suggestive of cutaneous metastases of the patient's known esophageal adenocarcinoma. Given further metastasis, the patient was ultimately switched to ramucirumab and paclitaxel per oncology.

Esophageal carcinoma is the eighth most common cause of death related to cancer worldwide. Adenocarcinoma is the most prevalent histologic type of esophageal carcinoma, with an incidence as high as 5.69 per 100,000 individuals in the United States.[1] Internal malignancies that lead to cutaneous metastases are not uncommon; however, the literature is limited on cutaneous scalp metastases from esophageal cancer. Cutaneous metastases secondary to internal malignancies present in less than 10% of overall cases; tend to derive from the breasts, lungs, and large bowel; and usually present in the sixth to seventh decades of life.[2] Further, roughly 1% of all skin metastases originate from the esophagus.[3] When there are cutaneous metastases to the scalp, they often arise from breast carcinomas and renal cell carcinomas.[4,5] Rarely does esophageal cancer spread to the scalp.[2,6-9] When cutaneous metastases originate from the esophagus, multiple cancers such as squamous cell carcinomas, mucoepidermoid carcinomas, small cell carcinomas, and adenocarcinomas can be the etiology of origin.[10] Metastases originating from esophageal carcinomas frequently are diagnosed in the abdominal lymph nodes (45%), liver (35%), lungs (20%), cervical/supraclavicular lymph nodes (18%), bones (9%), adrenals (5%), peritoneum (2%), brain (2%), stomach (1%), pancreas (1%), pleura (1%), skin/body wall (1%), pericardium (1%), and spleen (1%).[3] Additionally, multiple cutaneous scalp metastases from esophageal adenocarcinoma have been reported,[7,9] as were seen in our case.

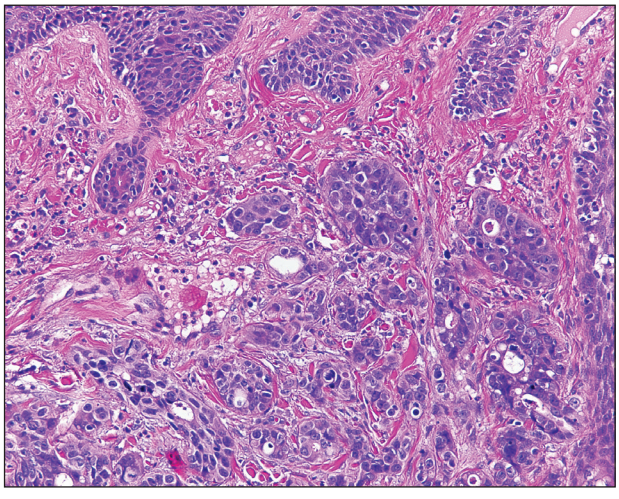

FIGURE 2. Histologic examination revealed a dermal gland-forming neoplasm with an infiltrative distribution (H&E, original magnification ×400).

The clinical appearance of cutaneous scalp metastases has been described as inflammatory papules, indurated plaques, or nodules,[2] which is consistent with our case, though the spectrum of presentation is admittedly broad. Histopathology of lesions characteristically shows prominent intraluminal necrotic cellular debris, which is common for adenocarcinomas of the gastrointestinal tract.[7] However, utilizing immunohistochemical stains to detect specific antigens within tumor cells allows for better specificity of the tumor origin. More specifically, cytokeratin 7 and cytokeratin 20 are stained in esophageal metaplasia, such as Barrett esophagus, rather than in intestinal metaplasia inside the stomach.[2,11] Therefore, discerning the location of the adenocarcinoma proves fruitful when using cytokeratin 7 and cytokeratin 20. Although CDX2 is an additional marker that can be used for gastrointestinal adenocarcinomas with decent sensitivity and specificity, it can still be expressed in mucinous ovarian carcinomas and urinary bladder adenocarcinomas.[12] In our patient, the strong reactivity of cytokeratin 7 in addition to the characteristic morphology in both presenting biopsies was sufficient to make the diagnosis of cutaneous metastasis of esophageal adenocarcinoma to the scalp.

Our case highlights multiple cutaneous metastases of the scalp from a primary esophageal adenocarcinoma. Although cutaneous scalp metastasis of esophageal adenocarcinoma is rare, it is essential to provide a full-body skin examination, including the scalp, in patients with a history of esophageal cancer and to biopsy any suspicious nodules or plaques. The 1-year survival rate after diagnosis of esophageal carcinoma is less than 50%, and the 5-year survival rate is less than 10%.[13] Identifying cutaneous metastasis of an esophageal adenocarcinoma can either change the staging of the cancer (if it was the first distant metastasis noted) or indicate an insufficient response to treatment in a patient with known metastatic disease, prompting a potential change in treatment.[7]

This case illustrates a rare site of metastasis of a fairly common cancer and highlights the histopathology and accompanying immunohistochemical stains that can be useful in diagnosis as well as the spectrum of its clinical presentation.

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