55-Year-Old Woman With Estrogen Receptor–Positive Scalp Lesion

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Seminars in Oncology

At times we encounter clinical problems for which there are no directly applicable evidence-based solutions, but we are compelled by circumstances to act. When doing so we rely on related evidence, general principles of best medical practice, and our experience. Each "Current Clinical Practice" feature article in *Seminars in Oncology* describes such a challenging presentation and offers treatment approaches from selected specialists. We invite readers' comments and questions, which, with your approval, will be published in subsequent issues of the Journal. It is hoped that sharing our views and experiences will better inform our management decisions when we next encounter similar challenging patients. Please send your comments on the articles, your challenging cases, and your treatment successes to me at dr.gjmorris@gmail.com. I look forward to a lively discussion.

Gloria J. Morris, MD, PhD
Current Clinical Practice Feature Editor

Cutaneous metastases are described in the literature as an occasional manifestation of metastatic cancer, usually in advanced situations. As the initial presenting manifestation of cancer it is estimated to occur with an incidence of roughly less than 1%. The type of skin metastases has been shown to vary by age, sex, and primary tumor type. Skin metastases may occur from various primary tumor sites in both children and adults (including rhabdomyosarcomas, adenocarcinomas, various solid tumors of the lung, breast, ovaries, uterus, and other sarcomas)[1–6] and have often heralded more widely metastatic disease as well as a poorer outcome.[7] However, the appearance of a scalp carcinoma in metastasis the absence of an evident primary site is very rare.

We present here the case of a 55-year-old woman who presented with an unusual scalp lesion. Systemic workup was negative, leading to clinical quandary on how to recommend identification and eradication of this malignancy.

CASE SUMMARY

A 55-year-old, red-haired, fair-skinned, postmenopausal woman with a family history of renal cell and lung cancers presented with quarter-sized left occipital scalp lesions that she had noticed had raised over the past year and became scaly and pruritic over the previous 3 months. She had no other constitutional symptoms on review. She was up to date with mammograms and gynecological visits. Her physical examination was significant for a 2- x 3-cm scaly raised lesion over the left occipital scalp without ulceration at the base of hair follicles. There was no associated cervical or axillary adenopathy, and no parotid, or sub/mandibular swelling. Breast examination was unremarkable, without masses, skin changes, nipple inversion, or discharge. She had no other skin lesions. She underwent excisional biopsy of the scalp, which was originally read as an adenocarcinoma with intermediate nuclear grade, immunostaining was positive for cytokeratin 7, GATA3, mammaglobin, estrogen receptor and progesterone receptor; negative for cytokeratin 20, thyroid transcription factor 1, gross cystic disease fluid protein 15, HER2; and was thought consistent with metastatic ductal carcinoma from the breast (Figure 1). The surgical margins were positive. She saw a medical oncologist who confirmed her physical examination, and investigated the primary source by mammogram and breast magnetic resonance imaging (MRI), which were negative for masses, adenopathy, or other abnormality. Positron emission tomography (PET) scan showed increased uptake in the area of excision on the scalp, as well as at the left sublingual area, left parotid gland, and a fluid collection in the pelvis. Pelvic ultrasound then followed and showed both a left tubular cystic collection measuring 8 x 4 cm, and a complex 6-cm right ovarian cyst. Additional

Prashant Upadhyaya: case contribution/writeup, Figure 2; Thomas Certo: case contribution/writeup; Kent O Hustad: case contribution, Figure 1.

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0093-7754/ - see front matter

http://dx.doi.org/10.1053/j.seminoncol.2015.09.036

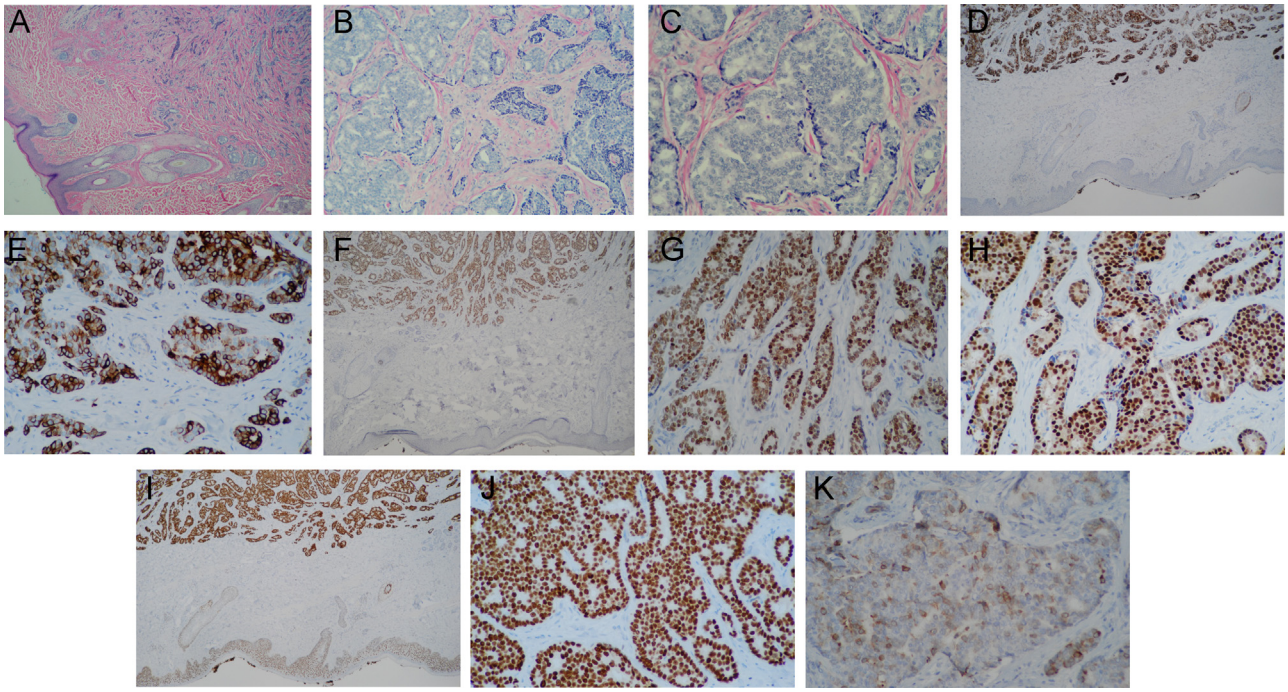

Figure 1. Scalp biopsy with preliminary immunohistochemical staining. (A-C) Hematoxylin and eosin staining, 10X, 40X, 60X magnification. (D,E) CK-7 staining, 10X, 100 X magnifications. (F,G) Estrogen receptor staining, 10X, 40X magnification. (H) Progesterone receptor staining, 40X, magnification. (I,J) GATA-3 staining, 10X, 40X magnifications. (K) Mammaglobin staining, 40X magnification. Courtesy of Kent O Hustad, MD, Department of Pathology, Laboratory Alliance of Central New York, St Joseph's Hospital Health Center, Syracuse, NY.

stains were simultaneously performed on the scalp lesion: these showed positivity for CD15, focally for carcinoembryonic antigen (CEA), rarely for p53 and calretinin, and negativity for CA125, WT1, p63, S100, and cytokeratin 5/6. The results were still inconclusive as to primary site of origin. A second opinion of pathology from an outside cancer center then confirmed the scalp lesion as transected adenocarcinoma in the dermis with tubular, cribriform, and focal papillary growth patterns. The tumor cells were positive for CK7 and estrogen receptor, but negative for p63, androgen receptor, HER2Neu, and TTF-1. Of note, her mother had renal cell carcinoma, a maternal uncle had a history of lung cancer, and the maternal grandfather had a history of leukemia. The patient is a singer, a former cigarette smoker, and drinks alcoholic beverages socially.

Differential diagnosis included primary skin adnexal and extracutaneous apocrine carcinoma, and mammary duct carcinoma. Excision of the current tumor as possibly a primary eccrine adenocarcinoma (of sweat gland origin) including sentinel lymph node biopsy for staging was recommended. In addition, she saw an ear, nose, and throat (ENT) specialist for parotid gland swelling, as well as a gynecologic oncologist for adnexal swelling; an exploratory laparotomy for resection of a pelvic mass with total abdominal hysterectomy and bilateral salpingo-oophorectomy (TAH-BSO) was recommended.

Intraoperatively, a meticulous search was made for ectopic and accessory breast tissue, including examining the axillae and along the mild line (axillae to groin). The patient then underwent wide excision of the scalp lesion with flap reconstruction (Figure 2). The resected uterus, fallopian tubes, ovaries, and pelvic washings were negative for malignancy. Final pathology was confirmed (Figure 3).

We pose the following clinical questions: (1) What additional workup would be necessary? (2) How would you proceed surgically? (3) What treatment would be required or be most beneficial postoperatively?

PATHOLOGIST'S EXPERT OPINION

The patient originally had an excisional biopsy of a scalp mass performed at the end of October 2014. The resulting specimen showed similar findings to those presented above (Figure 3). The surgical margins of the original excision were positive for malignancy, and therefore, a second excision was performed in mid-January 2015. That excision showed a well-defined glistening pale tan 2.5- x 1.7- x 1.0-cm mass within the subcutaneous tissue.

Microscopically the tumor shows variably sized nests and cords of cohesive malignant cells. The malignant cells have a fair amount of eosinophilic cytoplasm and round, fairly homogenous