Primary cutaneous apocrine carcinoma: 2 cases and review of the pertinent histologic findings

Jessica Schweitzer, DO, PGY-2,[a] Jennifer Vermeesch, DO, PGY-3,[a] Theresa Zaleski, DO,[a] Megan Iacco, MD,[b] Kent Krach, MD,[a] Jessica Ghaferi, MD,[c] and Jenny Cotton, MD, PhD[c]
Ann Arbor, Michigan

Key words: adenocarcinoma; adnexal carcinoma; cutaneous apocrine carcinoma; signet-ring cells.

INTRODUCTION

Primary cutaneous apocrine carcinoma (PCAC) is a rare cutaneous adnexal tumor that presents a diagnostic challenge, with histology and staining mirroring those seen in mammary ductal carcinoma and other adnexal neoplasms. We report the first case, to our knowledge, of PCAC with in-transit metastasis responding to primary radiotherapy as a treatment. We also describe a case of PCAC treated with axillary lymph node dissection, wide local excision, and adjuvant radiotherapy. We hope this review provides greater awareness of this neoplasm in the differential diagnoses of metastatic breast carcinoma, as the prognostic implications may differ significantly.

Abbreviations used:

ER:	estrogen receptor
IMDC:	intramammary ductal carcinoma
PCAC:	primary cutaneous apocrine carcinoma
PR:	progesterone receptor

CASE 1

A 73-year-old white man with a medical history of chronic lymphocytic leukemia presented with a 3-year history of a slow-growing, painless mass in his left axilla with occasional serosanguinous drainage. Courses of topical antibiotics, antifungals, and topical steroids were ineffective. Physical examination found numerous, indurated brightly erythematous plaques and nodules in the axilla and lateral left breast with nipple inversion (Fig 1).

Punch biopsy found dermal aggregates of large, pleomorphic epithelioid cells with abundant cytoplasm (Fig 2). Some cells displayed a signet-ring appearance (Fig 3). Immunohistochemical staining showed pancytokeratin, cytokeratin 7, gross cystic disease fluid protein, and GATA3 positivity. Stains for cytokeratin 20, S-100, thyroid transcription factor, CDX2, and prostate-specific antigen were negative. Estrogen receptor (ER), progesterone receptor (PR), and HER2/neu were negative. Given the concern for metastasis from a primary breast or solid organ malignancy, the patient underwent an extensive workup including a full body positron emission tomography scan, computed tomography scans, serum tumor markers, and mammography, with no other malignant foci identified. With the patient's comorbidities and extensive involvement, he was treated with radiation therapy and showed a clinical response (Fig 4). Unfortunately, the patient died of a myocardial infarction 2 weeks after completion of radiation therapy.

CASE 2

A 56-year-old white man presented with an enlarging lesion in his left axilla that had been present for 5 years. He was treated previously for a presumed abscess with antibiotics for several weeks with no resolution. On physical examination, a 3- × 3-cm, erythematous-to-brown, firm plaque with central nodularity was present. Punch biopsy found similar findings to those in case 1 including a diffuse infiltrate extending from the papillary dermis to the subcutis, composed of cells with indistinct borders

From Departments of Dermatology[a] and Dermatopathology,[c] Saint Joseph Mercy Hospital, and IHA Dermatology.[b]
Funding sources: None.
Conflicts of interest: None declared.
Correspondence to: Jessica Schweitzer, DO, PGY-2, Dermatologic Residency Clinic Reichert Health Center, 5333 McAuley Drive Room 5003, Ypsilanti, MI 48197. E-mail: Jschweitzer09@gmail.com.

JAAD Case Reports 2016;2:411-4.
2352-5126

http://dx.doi.org/10.1016/j.jdcr.2016.08.003

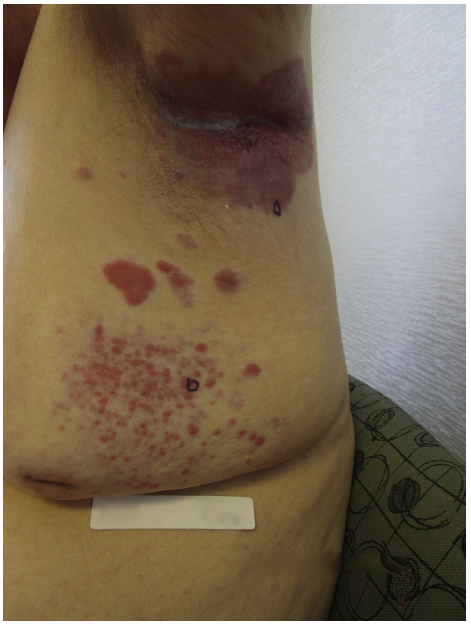

Fig 1. Primary cutaneous apocrine carcinoma. Case 1: multiple, indurated brightly erythematous plaques and nodules in the axilla and lateral left breast with nipple inversion.

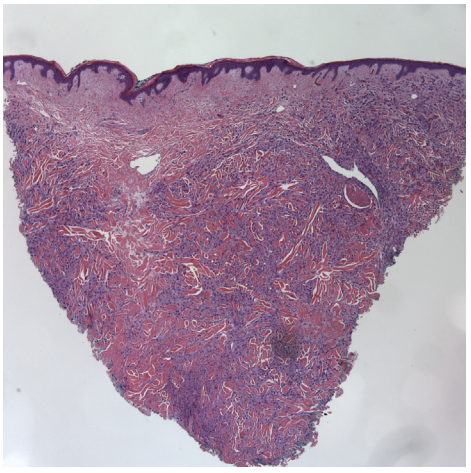

Fig 2. Dermal aggregates of large, pleomorphic epithelioid cells with abundant cytoplasm. (Hematoxylin-eosin stain; original magnification: ×4.)

and abundant eosinophilic granular cytoplasm. Single-cell infiltration was noted in some areas. Staining was positive for pancytokeratin, p63, epithelial membrane antigen, and GATA3. Stains for CD68, S-100, ER, and PR were negative. The patient underwent a positron emission tomography—computed tomography scan, which showed axillary lymph node involvement and was managed with wide local excision and axillary lymph node dissection. At the time of publication, he was receiving ongoing adjuvant radiotherapy.

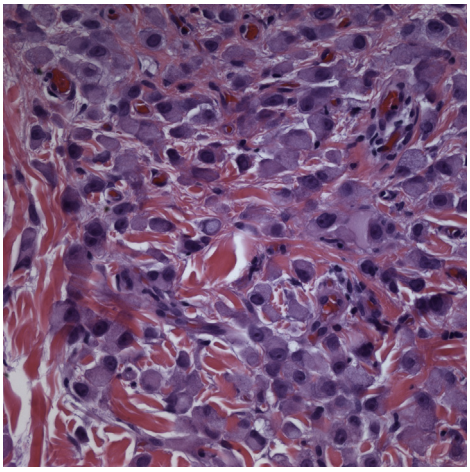

Fig 3. Some cells displayed a signet-ring appearance. (Hematoxylin-eosin stain; original magnification: ×20.)

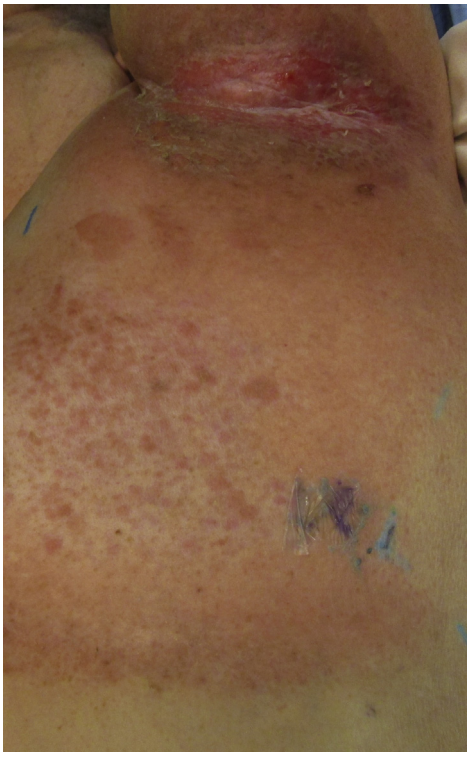

Fig 4. Case 1: after radiation therapy.

DISCUSSION

PCAC is an extremely rare adnexal carcinoma that occurs in middle-aged adults with approximately 50 cases reported in the literature. It arises in areas of high apocrine gland density, including the axilla and the anogenital region but has also been described on the eyelid, ear, chest, and extremities. The clinical findings vary, but PCAC typically presents with erythematous, slow-growing, firm or cystic nodules.