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Cutaneous apocrine carcinoma masquerading as head and neck cellulitis: an ominous sign

Aaron M. Secrest^{1,2}, Raja R. Seethala³, Laura K. Ferris¹, and Hakeem Sam^{1,*}

¹Department of Dermatology, University of Pittsburgh, Pittsburgh, PA, USA

²Department of Epidemiology, University of Pittsburgh, Pittsburgh, PA, USA

³Department of Pathology, University of Pittsburgh, Pittsburgh, PA, USA

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A 36-year-old previously healthy Caucasian male presented with an erythematous plaque on his right face and neck (Figure 1). Mistaken for cervicofacial cellulitis 15 months prior, he was treated with systemic antibiotics and steroids for 3 months then unfortunately lost to follow-up. A recent biopsy of lesional skin was taken from the posterior neck. At low magnification, there was a poorly differentiated tumor infiltrating the deep reticular dermis with extensive lymphangitic spread (Figure 2A). On higher magnification, the proliferation consisted of large cells with abundant granular, eosinophilic cytoplasm, round pleomorphic nuclei with prominent nucleoli, tubular formation, luminal secretions (Figure 2B) and positive immunostaining for androgen receptor, gross cystic disease fluid protein 15 (GCDFP-15), but not p63, collagen IV, or laminin. Physical examination of the breast, axilla, lymph node survey and remainder of body was unremarkable. A PET scan showed intense uptake of (¹⁸F)-fluorodeoxyglucose in the right cheek, neck, and parotid gland, two vertebral bodies and mediastinal lymph nodes. No evidence of primary tumor in the breast or the salivary duct was seen. Our impression was a cutaneous apocrine carcinoma (CAC) with distant metastases.

Three months later, the patient began experiencing intermittent facial numbness, pain with chewing, significant facial swelling and complete right ear hearing loss. Treatment was initiated with weekly paclitaxel and carboplatin plus radiation to the cervical spine and right neck, which improved pain and swelling. Additional chemotherapy with capecitabine and IV oxaliplatin was terminated due to severe toxicity. In July 2009, the patient succumbed to metastatic disease, 30 months from disease onset.

CACs are rare. In a recent study, the median age at diagnosis was 66, predominantly in males and located on the trunk.¹ Previously, Robson et al. reported the most common initial clinical impression of CAC was a basal cell carcinoma.² To our knowledge, this is the

*Correspondence: Hakeem Sam, MD, PhD, Department of Dermatology, University of Pittsburgh, 3601 Fifth Ave, 5th Floor, Pittsburgh, PA, 15213 USA, Phone: 412-647-4200, Fax: 412-847-8246, samh@upmc.edu.

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second reported case of CAC masquerading as cellulitis, but the first such presentation in a previously healthy young adult male. The earlier report of CAC mimicking cellulitis was in a 90-year old man with a history of colon adenocarcinoma.³

CACs are diagnostically challenging.⁴ One must rule out metastatic ductal carcinoma of the breast, metastatic adenocarcinoma or salivary gland ductal carcinoma. Decapitation secretion, classically a histologic hallmark of apocrine differentiation can be seen in other adnexal tumors.⁴ Primary cutaneous cribriform apocrine carcinoma is a distinct histologic variant of CAC recently reported.⁵ Immunostaining with androgen receptors, GCDFP-15, p63, cytokeratin 5/6 and 7, and mammoglobin are useful, but none alone reliably distinguishes primary CAC from occult metastatic carcinoma of the breast or parotid gland.⁴ Hence, excellent clinicopathologic correlation is essential in the diagnosis of CAC.

Most CACs have favorable clinical outcomes when diagnosed early, limited to the skin, and completely excised. Radiation and chemotherapy have been reported with mixed results.² Notably, both reported cases of CAC masking as cellulitis showed an aggressive and rapid course leading to patient demise within months. Clinicians should keep a low threshold for biopsy in the cellulitis-like presentation of CAC.

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Figure 1.
Patient presented with a poorly demarcated, erythematous plaque with firm woody edema involving the right cheek and anterior neck.

Figure 2.

Biopsy from posterior side of patient's right neck. (A) Skin with tumor composed of complex glandular structures infiltrating the deep dermis (arrows; hematoxylin and eosin staining; original magnification $\times 4$). (B) Tubular formation with luminal secretions and cellular infiltrate with eosinophilic cytoplasm, pleomorphic nuclei, and prominent nucleoli (original magnification $\times 20$). (C) Androgen receptor immunohistochemical staining – tumor cells show strong nuclear activity (top, normal sebaceous cells also positive as internal control; original magnification $\times 20$). (D) GCDFP-15 immunohistochemical staining is strongly positive in tumor (original magnification $\times 20$).