

# Cutaneous Presentation of Metastatic Salivary Duct Carcinoma

Xintong Wang, MD; Nikki S. Vyas, MD; Abdulaziz A. Alghamdi, MD; Matthew Parker, MD; Allen Sapadin, MD; Matthew S. Goldberg, MD; William Westra, MD

## PRACTICE POINTS

- Skin manifestations of metastatic salivary duct carcinoma can be variable, ranging from nodules to erysipelaslike inflammation (also known as shield sign) with purpuric papules and pseudovesicles.
- The specific clinical findings as well as histologic and immunohistochemical characteristics can aid in the diagnosis of this rare disease.

To the Editor:

Metastatic spread of salivary duct carcinoma (SDC) to the skin is rare. Diagnosing SDC can be challenging because the cutaneous manifestations of this disease are variable and include nodules, papules, and erysipelaslike inflammation (also known as shield sign) with purpuric papules and pseudovesicles. We describe a case of cutaneous metastatic SDC that originated from the parotid gland and presented with 2 distinct cutaneous findings: sharply demarcated erythematous plaques and focally hemorrhagic angiomatous papules.

A 60-year-old man presented with a persistent polymorphous pruritic eruption of several months' duration involving the entire face, ears, neck, and upper chest. He had a history of unspecified adenocarcinoma of the parotid gland diagnosed 2 years prior and underwent multiple treatment cycles with several chemotherapeutic

agents over the course of 18 months. Physical examination showed erythematous papules and nodules on the face and neck with slight overlying scale. Sharply demarcated, erythematous plaques studded with focally hemorrhagic, angiomatous papules were noted on the neck and chest (Figure 1). Two 4-mm punch biopsies were sampled from representative nodular areas. Histopathology showed multiple round solid-tumor nodules with central necrosis in the superficial and deep dermis that were not associated with the overlying epidermis (Figures 2A and 2B). The tumor cells appeared polygonal and contained ample eosinophilic cytoplasm. Tumor nuclei showed marked pleomorphism, and numerous atypical mitotic figures were readily identifiable (Figure 2C). There was diffuse cytoplasmic staining with cytokeratin 7 and nuclear staining with androgen receptor (Figure 2D). These findings were consistent with a diagnosis of SDC metastatic to the skin.

The patient underwent 8 cycles of docetaxel chemotherapy. With disease progression, the chemotherapy regimen was changed to gemcitabine and methotrexate. The patient continued to experience disease progression and died 9 months after diagnosis of skin metastases.

Salivary duct carcinoma is rare and is estimated to represent 1% to 3% of all salivary malignancies.<sup>1</sup> It is a highly aggressive form of salivary gland carcinoma and is associated with a poor clinical outcome. The 3-year overall survival rate for stage I disease is 42% and only 23% for stage IV disease.<sup>2</sup> Salivary duct carcinoma has a

Drs. Wang, Vyas, Alghamdi, Sapadin, Goldberg, and Westra are from the Icahn School of Medicine, Mount Sinai, New York, New York. Drs. Wang and Westra are from the Department of Pathology, Drs. Vyas and Goldberg are from the Departments of Pathology and Dermatology, and Drs. Alghamdi and Sapadin are from the Department of Dermatology. Dr. Parker is from the Albert Einstein College of Medicine at Mount Sinai, Bronx, New York.

The authors report no conflict of interest.

Correspondence: William Westra, MD, Department of Pathology, Icahn School of Medicine at Mount Sinai, 1468 Madison Ave, New York, NY 10029 (william.westra@mountsinai.org).

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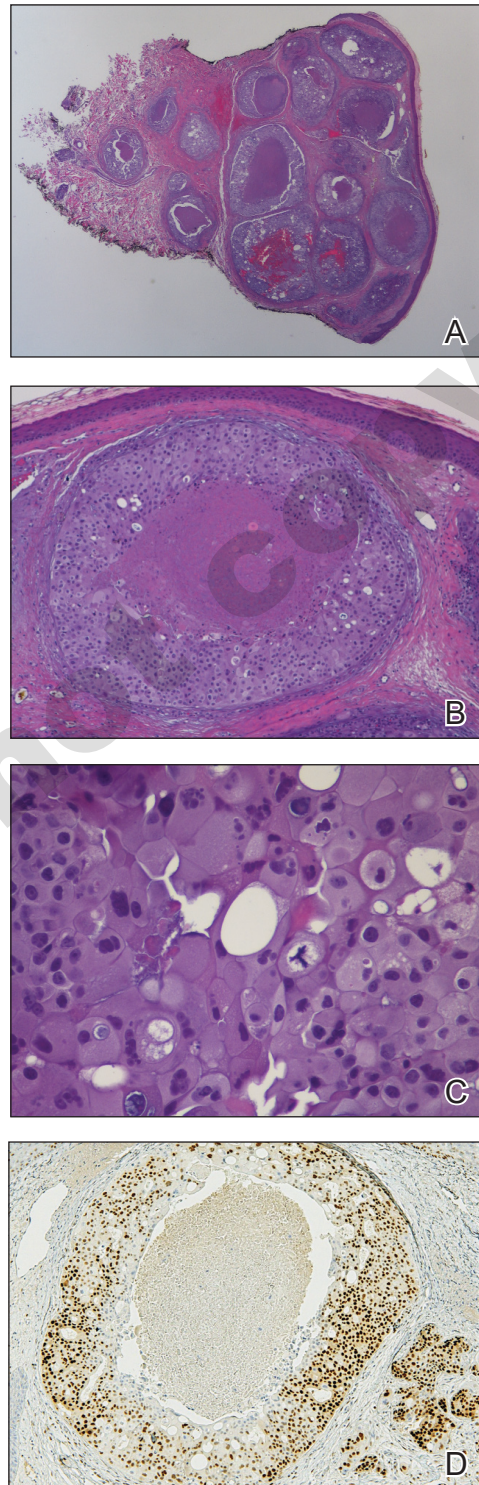


**FIGURE 1.** A and B, Sharply demarcated, erythematous plaques studded with focally hemorrhagic, angiomatous papules on the neck and upper chest in a patient with cutaneous metastatic salivary duct carcinoma that originated from the parotid gland.

high rate of distant metastasis,<sup>3</sup> but cases of cutaneous metastases are rare.<sup>3-8</sup> Previously reported cases of SDC that metastasized to the skin originated from the parotid gland (n=6) and submandibular gland (n=1).<sup>3</sup>

The diagnosis of cutaneous metastases is challenging due to the variability of the skin manifestations. Three cases described small firm nodules in patients,<sup>3-5</sup> while others presented with purpuric papules and pseudovesicles.<sup>6-8</sup> Our patient presented with sharply demarcated, erythematous plaques studded with focally hemorrhagic, angiomatous papules, which further emphasizes the capricious nature of skin findings.

The morphology of SDC is strikingly similar to ductal adenocarcinoma of the breast, which can lead to diagnostic confusion. Both carcinomas may show oncocytic cells, ductal formations, and cribriform structures with central comedo necrosis. Moreover, immunohistochemical features overlap, including positive staining for cytokeratin 7 and gross cystic disease fluid protein 15. Positive immunohistochemistry with androgen receptor is consistent with SDC



**FIGURE 2.** A, Histopathology showed multiple round solid-tumor nodules in the superficial and deep dermis with massive comedo necrosis (H&E, original magnification  $\times 10$ ). B, A tumor nodule with central zone of cellular necrosis (H&E, original magnification  $\times 20$ ). C, The nuclei of tumor cells showed marked pleomorphism and atypical mitotic figures (H&E, original magnification  $\times 40$ ). D, Immunohistochemistry expressed diffuse nuclear staining of tumor cells with androgen receptor (original magnification  $\times 20$ ).

but also can be expressed in some cases of breast carcinoma.<sup>9,10</sup> Therefore, the diagnosis of cutaneous involvement from metastatic SDC requires not just an evaluation of the pathologic features but careful attention to the clinical history and a thorough staging evaluation.

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