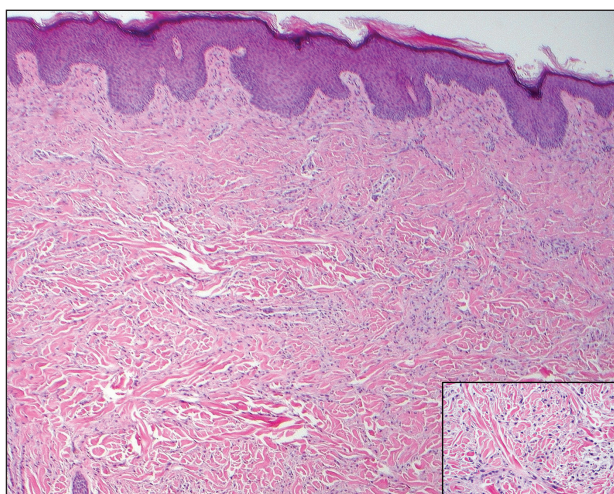


# Multiple Pink Papules on the Chest and Upper Abdomen

Robert A. Kowtoniuk, BS; Christine A. Schleich, MD; Tammie C. Ferringer, MD

## Eligible for 1 MOC SA Credit From the ABD

This Dermatopathology Diagnosis article in our print edition is eligible for 1 self-assessment credit for Maintenance of Certification from the American Board of Dermatology (ABD). After completing this activity, diplomates can visit the ABD website (<http://www.abderm.org>) to self-report the credits under the activity title "Cutis Dermatopathology Diagnosis." You may report the credit after each activity is completed or after accumulating multiple credits.



H&E, original magnifications  $\times 40$  and  $\times 200$  (inset).

A 56-year-old woman presented with multiple asymptomatic lesions of 2 months' duration. On physical examination firm pink papules were noted dispersed across the upper abdomen, chest, and back. A 5-mm punch biopsy was obtained.

## THE BEST DIAGNOSIS IS:

- cutaneous metastases
- granuloma annulare
- Kaposi sarcoma
- neurofibromas
- scleromyxedema

PLEASE TURN TO **PAGE 237** FOR THE DIAGNOSIS

From Geisinger Medical Center, Danville, Pennsylvania. Drs. Schleich and Ferringer are from the Departments of Dermatology and Laboratory Medicine. Mr. Kowtoniuk also is from the Philadelphia College of Osteopathic Medicine, Pennsylvania.

The authors report no conflict of interest.

Correspondence: Robert A. Kowtoniuk, BS, Geisinger Medical Center, 100 N Academy Ave, Danville, PA 17822 ([rkowtoniuk@geisinger.edu](mailto:rkowtoniuk@geisinger.edu)).

## THE DIAGNOSIS: Cutaneous Metastases

Cutaneous metastases (CMs) can present in an otherwise asymptomatic patient as the only sign of an underlying disease process. In women, the most common cause of CM is breast carcinoma.<sup>1-3</sup> Cutaneous metastases are found in approximately 25% of all patients with breast carcinoma,<sup>1</sup> and breast carcinomas represent approximately 69% of all CMs found in women (Table 1).<sup>2</sup> Cutaneous metastatic breast carcinoma (CMBC) is associated with a poor prognosis with a mean survival of approximately 6 months at the time of diagnosis.<sup>1,3</sup> It commonly presents as a collection of flesh-colored, firm, asymptomatic, and rapidly appearing papules and nodules that can resemble cysts or fibrous tumors.<sup>1,3,4</sup> They typically are located on the chest wall or abdomen near the site of the underlying malignancy.<sup>1-3</sup> The histologic features of CMBC can include hyperchromatic tumor cells infiltrating between the collagen fibers in a characteristic single file manner,<sup>3,5</sup> giving the appearance of a *busy dermis*, a nonspecific term to describe a focally hypercellular dermis at low-power magnification (Table 2).<sup>5,6</sup> Cords and clusters of atypical cells with intracytoplasmic vacuoles or well-developed ducts also can be seen (quiz image [inset]). The carcinoma en cuirasse subtype of CMBC is characterized by a fibrotic scarlike plaque on the chest wall.<sup>1,3</sup> If a punch biopsy is obtained, the specimen typically appears rectangular rather than tapered because of the sclerotic dermal collagen.<sup>6</sup> In contrast, inflammatory carcinoma (carcinoma erysipelatoides) presents as an erythematous plaque resembling cellulitis due to the lymphatics being congested by tumor cells.<sup>3</sup> Immunohistochemistry is a valuable tool in diagnosis. Positive staining is seen with cytokeratin 7, gross cystic disease fluid protein-15, mammaglobin, and GATA-3.<sup>1,3,6</sup>

Kaposi sarcoma (KS) is a low-grade endothelial malignancy associated with human herpesvirus 8.<sup>3,4</sup> Kaposi sarcoma can be divided into 4 main subtypes: classic KS,

**TABLE 1. Primary Visceral Malignancies Most Commonly Associated With Cutaneous Metastases**

Site of Origin	Women, %	Men, %
Breast	69	2
Lung	4	24
Colon and rectal	9	19

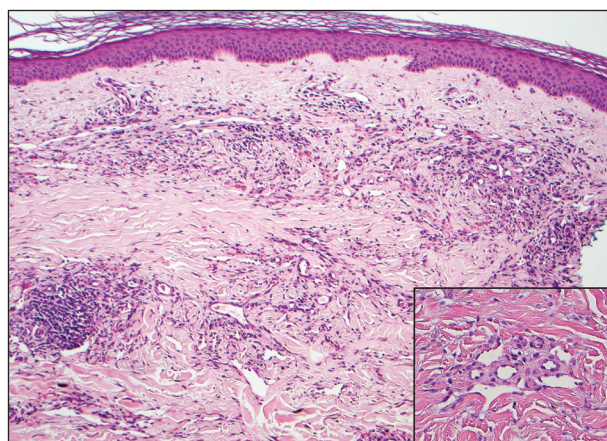
Data from Habif et al.<sup>2</sup>

**TABLE 2. Busy Dermis Differential Diagnosis<sup>a</sup>**

Blue nevus
Dermatofibroma/dermal Spitz
Cutaneous metastasis
Kaposi sarcoma (plaque stage)
Granuloma annulare (interstitial variant)
Scleromyxedema
Neurofibroma

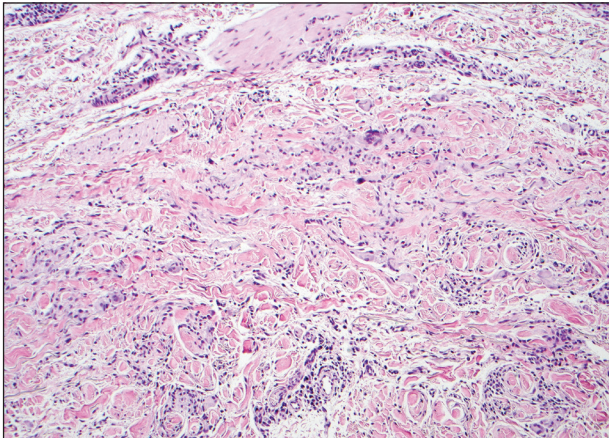
<sup>a</sup>The busy dermis differential diagnosis can be categorized and easily remembered by the mnemonic “busy dermis can kill grandma’s sweet niece.”<sup>6</sup>

African KS, AIDS-related KS, and immunosuppression-associated KS that occurs in patients with diseases such as human immunodeficiency virus. The cutaneous lesions are similar between subtypes and present as dark reddish purple macules that may enlarge or become nodular lesions.<sup>3,4</sup> Histologically, 3 distinct stages of progression are described: patch, plaque, and tumor. The plaque stage has the appearance of a busy dermis due to the rapid proliferation of vascular structures within the dermis.<sup>3,6</sup> A useful histologic feature known as the promontory sign can be seen as the proliferating tumor causes preexisting structures to project into vascular spaces (Figure 1).<sup>6</sup> Immunohistochemistry for the endothelial and lymphatic

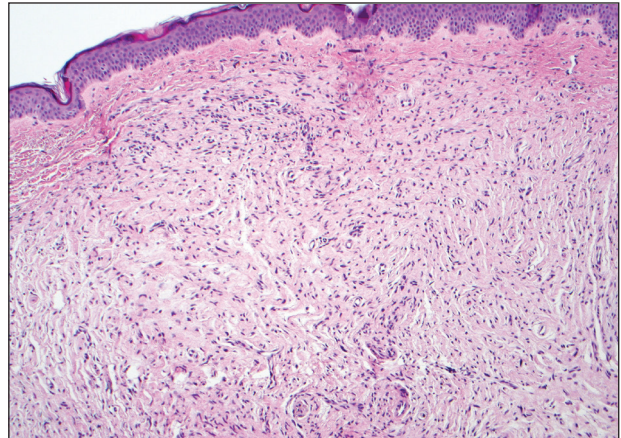


**FIGURE 1.** Plaque stage of Kaposi sarcoma with promontory sign (H&E, original magnification  $\times 100$  [inset, original magnification  $\times 200$ ]).

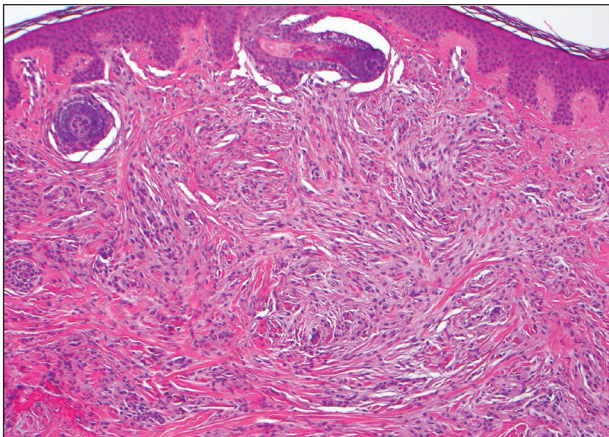




**FIGURE 2.** Interstitial granuloma annulare showing a patchy histiocytic infiltrate dissecting collagen bundles with dermal mucin (H&E, original magnification  $\times 100$ ).



**FIGURE 4.** Neurofibroma showing an abundance of tiny spindle cells with comma-shaped nuclei within a pale pink stroma (H&E, original magnification  $\times 100$ ).



**FIGURE 3.** Scleromyxedema with dermal mucin deposition surrounding spindled fibroblasts and fibrotic collagen bundles (H&E, original magnification  $\times 100$ ).

markers CD31 and D2-40, respectively, are positive and may aid in the diagnosis.<sup>3</sup> Staining for the latent nuclear antigen-1 of human herpesvirus 8 is a highly specific marker used to diagnose KS and can further distinguish it from the other busy dermis lesions.<sup>3</sup>

Granuloma annulare (GA) is characterized by rings of small, firm, pink to flesh-colored papules with a variable disease duration.<sup>4</sup> Histologically, the interstitial variant of GA is characterized by a scattered inflammatory infiltrate consisting of histiocytes and lymphocytes located between altered collagen fibers in the superficial to mid dermis (Figure 2).<sup>3,6</sup> Occasional eosinophils and increased dermal mucin are useful features to distinguish interstitial GA from other entities in the busy dermis differential.<sup>7</sup>

Scleromyxedema, also known as generalized lichen myxedematosus, is a rare mucinosis.<sup>3,8</sup> Although its

pathogenesis is unknown, it has been suggested that paraproteins related to the underlying gammopathy act to stimulate fibroblast proliferation and mucin overproduction.<sup>8</sup> Clinically, characteristic widespread firm, waxy, dome-shaped papules are present over the head, upper trunk, and extremities.<sup>3,8</sup> Histologically, scleromyxedema is characterized by increased dermal fibroblasts, mucin, and fibrosis, leading to the appearance of a busy dermis (Figure 3).<sup>3,6</sup>

Neurofibromas are common benign peripheral nerve sheath tumors that can occur sporadically or in the setting of neurofibromatosis.<sup>3-5</sup> They present as soft, flesh-colored papules or nodules most commonly located on the trunk and limbs.<sup>4</sup> Histologically, neurofibromas are nonencapsulated tumors composed of abundant spindle cells with comma-shaped nuclei diffusely arranged in a pale myxoid stroma (Figure 4). Scattered mast cells can be visualized at higher magnification.<sup>3,6</sup>

## REFERENCES

- Alcaraz I, Cerroni L, Rutten A, et al. Cutaneous metastases from internal malignancies: a clinicopathologic and immunohistochemical review. *Am J Dermatopathol.* 2012;34:347-393.
- Habif TP, Dinulos JGH, Chapman MS, et al. *Skin Disease: Diagnosis and Treatment.* 4th ed. Edinburgh, Scotland: Elsevier; 2017.
- Calonje JE, Brenn T, Lazar AJ, et al, eds. *McKee's Pathology of the Skin.* 4th ed. St. Louis, MO: Elsevier Saunders; 2012.
- Habif TP. *Clinical Dermatology: A Color Guide to Diagnosis and Therapy.* 6th ed. Philadelphia, PA: Elsevier; 2015.
- Patterson JW, Hosler GA. *Weedon's Skin Pathology.* 4th ed. Philadelphia, PA: Churchill Livingstone/Elsevier; 2016.
- Elston DM, Ferringer T, eds. *Dermatopathology.* 2nd ed. Philadelphia, PA: Saunders Elsevier; 2014.
- Silverman RA, Rabinowitz AD. Eosinophils in the cellular infiltrate of granuloma annulare. *J Cutan Pathol.* 1985;12:13-17.
- Rongioletti F, Merlo G, Cinotti E, et al. Scleromyxedema: a multi-center study of characteristics, comorbidities, course, and therapy in 30 patients. *J Am Acad Dermatol.* 2013;69:66-72.