

## SHORT COMMUNICATION

## Pink, Painful Nodules: A Case of Cutaneous Metastatic Breast Adenocarcinoma

Rachel Elsanadi, BS,<sup>1</sup> Anna-Marie Hosking, MD,<sup>1</sup> Patrick Lee, MD<sup>1</sup>

<sup>1</sup> Department of Dermatology, University of California, Irvine, Irvine, California

## INTRODUCTION

Cutaneous metastases are rare, reportedly occurring in 0.7 to 10% of malignancies, and most commonly occur due to breast carcinoma in women.<sup>1</sup> Herein, we describe a case of cutaneous metastases as the initial presentation of a recurrent breast adenocarcinoma.

15 and negative for HER2 and CK20, confirming diagnosis of cutaneous metastatic breast cancer (CMBC), specifically, adenocarcinoma. Laboratory evaluation was notable for elevated alkaline phosphatase, CEA, and CA 27-29. Bone scan imaging showed axial and appendicular mixed lytic and sclerotic metastatic lesions. The patient was referred to oncology and started on targeted systemic therapy.

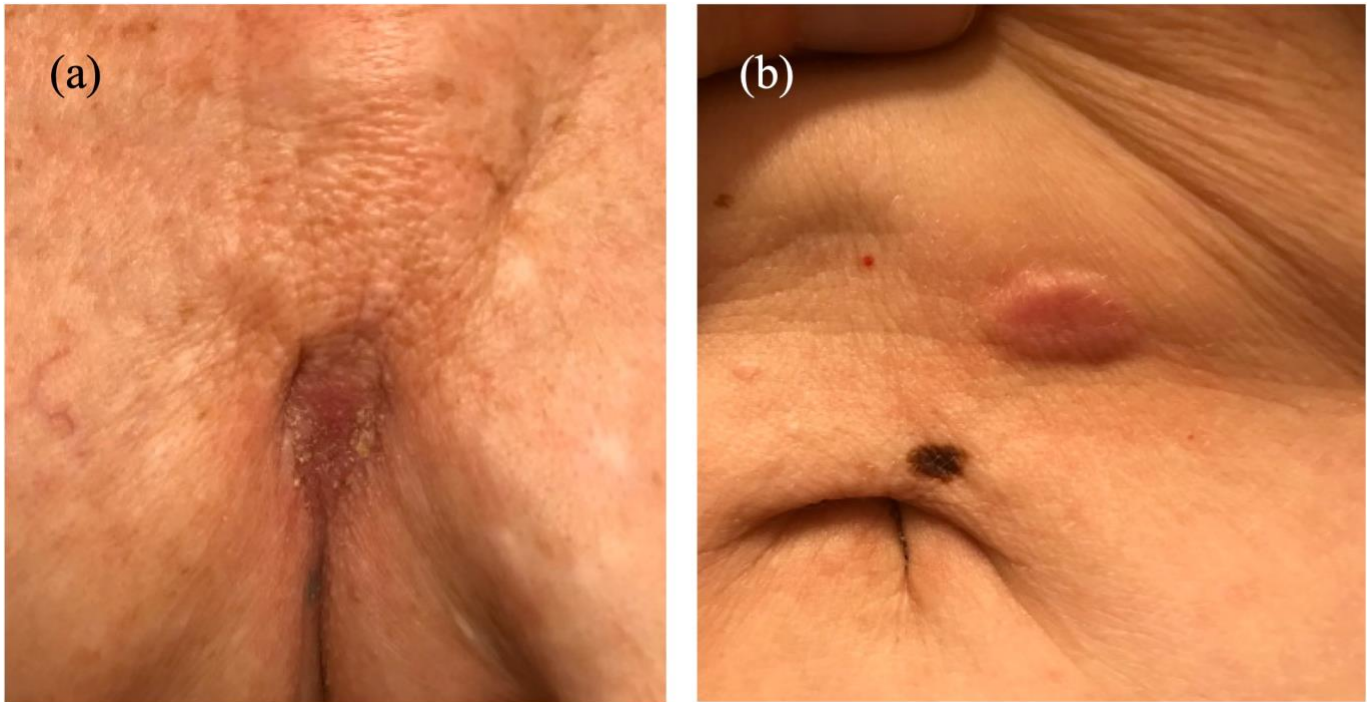
## CASE

A 53-year-old woman presented to dermatology with three-month history of pink, painful sternal (**Figure 1A**) and abdominal (**Figure 1B**) nodules with associated 20-pound weight loss. Medical history was notable for left Stage 1 ER+/PR+/HER2-breast cancer ten years prior, treated with partial mastectomy and radiation. Mammogram was greater than 5 years overdue. Family history was significant for maternal breast cancer. Physical examination revealed two red-to-pink, indurated nodules on the mid-sternum and left abdomen. Punch biopsies of the lesions showed atypical, infiltrative epithelial cell aggregations throughout the dermis, with characteristic “single-file” arrangement (**Figure 2**). Immunohistochemical staining was positive for ER, PR, CK7 and GCDFP-

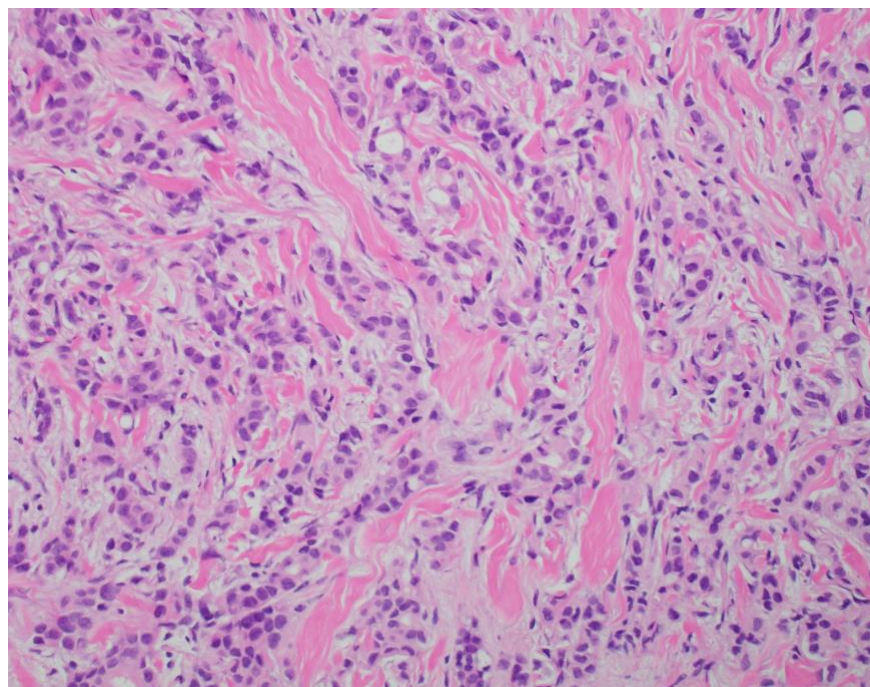
## DISCUSSION

CMBC accounts for approximately 33% of cutaneous metastases, occurring at a reported rate of 2.5% per primary breast malignancy.<sup>1</sup> Cutaneous metastases spread contiguously or by distant metastasis via lymphatic or hematogenous routes.<sup>2</sup> CMBC typically presents as 1-3 cm painful, pruritic, or asymptomatic firm, pink to reddish-brown, erythematous nodule or plaque on the chest, abdomen, or scalp, as in our patient.<sup>2,3</sup> Less common presentations include skin-colored or necrotic ulcers.<sup>3,4</sup>

Breast adenocarcinoma is the most common tumor underlying cutaneous metastasis of breast cancer.<sup>1-3,6</sup> Skin biopsy with subsequent histopathology and immunohistochemistry is the gold-standard for diagnosis.<sup>6</sup> Characteristic “single-filing” of



**Figure 1.** Red-to-pink, indurated, painful nodules of the (a) mid-sternum and (b) left upper quadrant of the abdomen.



**Figure 2.** Histological results of punch biopsy showing atypical epithelial cell aggregations throughout the dermis, with characteristic "single-file" arrangement of cells, typical in breast adenocarcinoma (H&E, 20x).

cells in breast adenocarcinomas is usually observed histologically.<sup>3</sup> Immunohistochemical staining for ER/PR/HER2 may be positive depending on primary tumor characteristics.<sup>3</sup> The typical CK7+/CK20- pattern is also observed, and GCDFP-15 may be expressed.<sup>3</sup>

Skin involvement is more common in patients with known metastatic breast cancer or as initial presentation of a recurrent, previously treated breast tumor; however, 13.7% of patients with CMBC present with skin lesions before, or simultaneous to, the initial diagnosis of breast cancer.<sup>2,3</sup> Additionally, 41% of patients with CMBC who present with cutaneous metastases may be outside of the recommended United States Preventative Services Taskforce breast cancer screening guidelines.<sup>2</sup> Some patients may present without associated systemic symptoms or be misdiagnosed prior to correct diagnosis, delaying treatment.<sup>2</sup> Generally, patients who have cutaneous metastases as the initial presentation of malignancy may experience longer survival than in those whom cutaneous metastases are due to cancer recurrence.<sup>6</sup> CMBC may rarely be the only sign of recurrence in an otherwise asymptomatic patient.<sup>6</sup> Because half of patients with CMBC may die within 6 months of diagnosis, maintenance of a high index of suspicion when evaluating firm, indurated nodules or plaques on the chest, abdomen or scalp, especially in a patient with a history of breast cancer is critical.<sup>4</sup>

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**Corresponding Author:**

Rachel Elsanadi, BS  
118 Medical Surge I, Irvine, CA  
Phone: (949) 824-5515  
Email: [relsanad@hs.uci.edu](mailto:relsanad@hs.uci.edu)

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