

Breast Carcinomas in Males: A Case Report and Brief Review of the Literature

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GOAL

To understand breast cancer in males to better manage patients with the condition

LEARNING OBJECTIVES

Upon completion of this activity, dermatologists and general practitioners should be able to:

1. Assess the prevalence of breast cancer in males.
2. Outline treatment options for males with breast cancer.
3. Identify risk factors for breast cancer in males.

INTENDED AUDIENCE

This CME activity is designed for dermatologists and generalists.

CME Test on page 89.

This article has been peer reviewed and approved by Michael Fisher, MD, Professor of Medicine, Albert Einstein College of Medicine. Review date: January 2009.

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Breast carcinoma accounts for 0.2% of all malignancies in males. Eighty-five percent of cases

present as a subareolar mass and can be associated with ulceration or nipple discharge. Metastases, as in female breast carcinoma, are most commonly seen in the lungs, bones, brain, liver, lymph nodes, and skin. We report a case of metastatic papillary breast carcinoma in a man with involvement of the skin and briefly review diagnosis, treatment options, and risk factors for breast cancer in males.

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Case Report

A 75-year-old man presented with erythematous papules and vesicles in a bandlike distribution across the left chest wall and axilla of 2 weeks' duration. He also reported mild burning of the lesions. His medical history revealed papillary carcinoma of the left breast with negative nodes. No recurrence was noted for 10 years following mastectomy, lymph node dissection, radiation, chemotherapy, and tamoxifen citrate. On examination, multiple 3- to 6-mm papules and vesicles crossed the left chest wall to the axilla (Figure 1). Pathology was consistent with metastatic breast carcinoma and positive for estrogen and progesterone receptors (Figures 2–5). *ERBB2* (formerly *HER2* or *HER2/neu*) was not overexpressed. Results of a computed tomographic scan showed multiple pulmonary nodules. The patient began treatment with anastrozole with clinical improvement for 5 months. After 5 months, the patient's skin and lung disease progressed and radiation therapy and fulvestrant were initiated. Zoledronic acid

was added for bone involvement. He continued to develop new areas of nonhealing truncal skin erosions.

Comment

Male breast cancer constitutes 0.6% to 1.6% of all cases of breast cancer. Ductal carcinoma in situ represents only 10% of cases of breast cancers in males, with primarily papillary or cribriform growth patterns.¹ In a study of 2537 males (N=385,683) with breast carcinoma, 93.7% of breast tumors were ductal or unclassified carcinomas, 2.6% were papillary, 1.8% were mucinous, 1.5% were lobular, and 0.5% were medullary.² The prevalence of hormone receptor status is routinely high in males with breast cancer. Of patients in the study with known estrogen receptor status, 90.6% of males had estrogen-receptor disease and 81.2% had progesterone-receptor disease.² Although more commonly seen in females with breast cancer, *HER2/neu* protooncogene overexpression is reported in 5% to 11% of males.^{2,3}



Figure 1. Papular and vesicular eruption across the left chest wall and axilla (A and B).

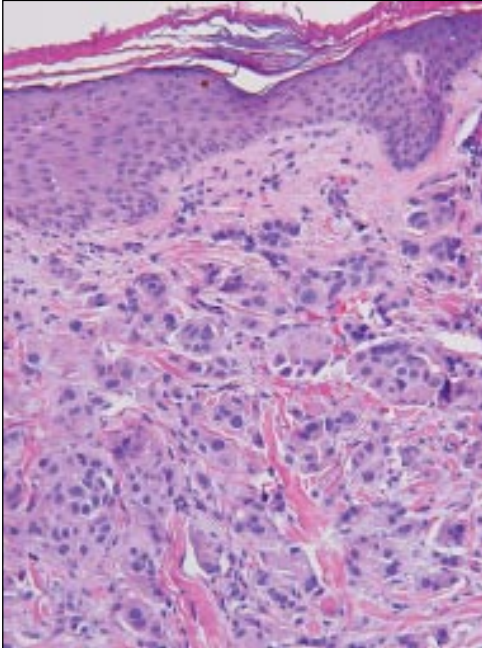


Figure 2. A proliferation of neoplastic cells within the dermis (H&E, original magnification $\times 40$).

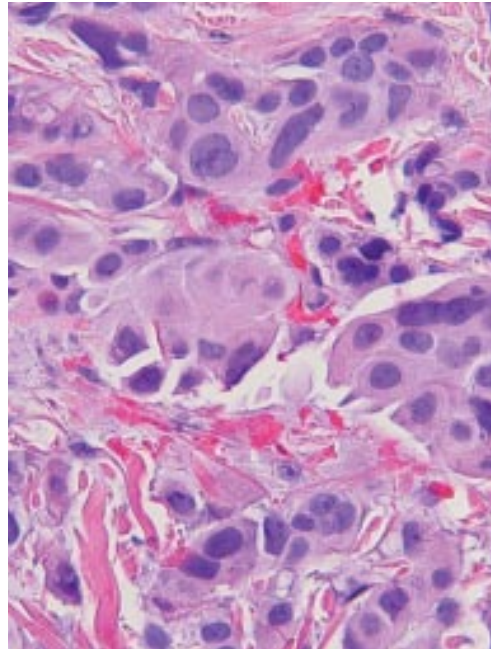


Figure 3. Tumor islands and cellular atypia (H&E, original magnification $\times 100$).

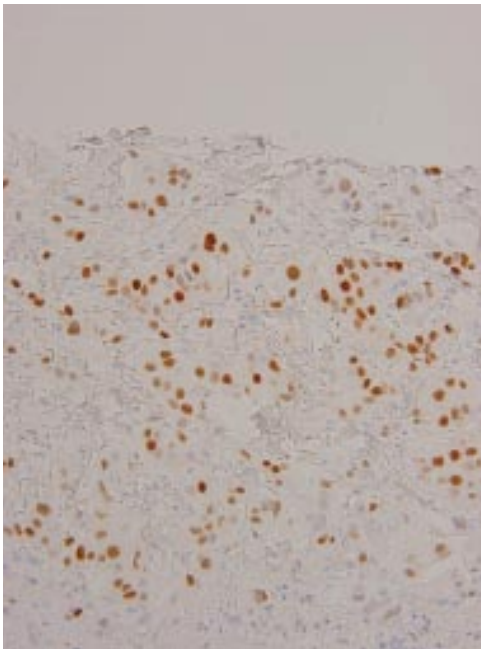


Figure 4. Immunohistochemistry of neoplastic cells demonstrating estrogen receptors (Dako 1D5 clone, original magnification $\times 40$).

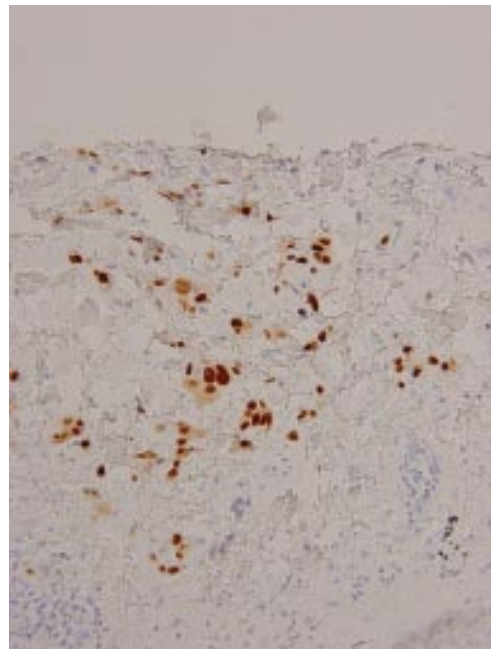


Figure 5. Immunohistochemistry of neoplastic cells demonstrating progesterone receptors (Dako PgR 636 clone, original magnification $\times 100$).

Cutaneous findings on initial presentation of males with breast cancer include retraction of the nipple, ulceration or nipple discharge, eczematous dermatitis, or induration.⁴ Erythematous or flesh-colored nodules, induration, ulcerations, or hemorrhagic or crusted papules in the region may signify

local recurrence or metastases, likely from underlying lymphatic channels.^{5,6}

Prognosis for male breast cancer is similar to females with the same cancer stage and patient age.⁷ Diagnosis occurs at an average age of 67 years in men and 62 years in women, with more men presenting

with later-stage disease.² Based on an evaluation of 1986 males with breast cancer, disease-specific survival rates are 96% at 5 years for stage I disease but fall to 44% at 10 years for stage III disease using the TNM staging system.¹ Male patients with breast cancer who exhibited tumors 2 to 5 cm in diameter had a 40% higher mortality risk than male patients with tumors less than 2 cm, and lymph node involvement signified a 50% increased risk for death.²

Therapy for males with breast cancer is similar to postmenopausal women with breast cancer. Modified radical mastectomy with lymph node dissection or sentinel lymph node biopsy is standard initial therapy, though the latter is still being evaluated for long-term results in clinically node-negative patients. Radiation therapy may be offered, though strict guidelines do not exist.^{1,8} The most notable advancement in the treatment of male breast cancer is endocrine therapy, as the majority of these tumors are positive for hormone receptors. Tamoxifen citrate, an antiestrogen, has been proven effective in both adjuvant therapy and metastatic disease settings, and newer aromatase inhibitors are following.⁹

Risk factors relate primarily to genetic and hormonal causes. Family history of breast cancer is strongly linked, particularly in cases with breast cancer 2, early onset gene, *BRCA2*, mutation. Notably, *BRCA1* gene mutations rarely cause male breast cancer. Klinefelter syndrome predisposes some males, with an earlier age of onset. Other genetic mutations include the androgen receptor, *AR*; cytochrome P450, subfamily XVII, *CYP17*; phosphatase and tensin homolog, *PTEN*; and *CHK2* checkpoint homolog, *CHEK2*, genes. Obesity and gynecomastia are seen with greater frequency in males with breast cancer and hormonal variation due to exogenous hormonal therapy or testicular disorders contributes. Aside from these risks, others are difficult to elucidate given the small number of males with breast cancer in a given population.¹⁰

Conclusion

Cutaneous involvement in male breast cancer is rarely reported in the dermatology literature, though dermatologists have a unique opportunity to assist their patients through careful skin examinations and biopsies for persistent lesions in this area, even in male patients.¹¹

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