CASE REPORTS/CLINICAL VIGNETTES

Breast Cancer Presenting as Unilateral Arm Edema

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CONTEXT: Symptomatic arm lymphedema as the presenting symptom of invasive breast carcinoma is a rare occurrence.

DESIGN: We report a case of invasive breast cancer presenting with unilateral arm swelling. The patient was initially thought to have venous thrombosis. A thorough physical examination and a mammogram revealed the presence of breast cancer and associated subclinical axillary lymphadenopathy.

CONCLUSION: Failure to recognize this presentation can lead to misdiagnosis or a significant delay in diagnosis and treatment.

KEY WORDS: breast cancer; lymphedema; diagnosis.

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INTRODUCTION

Breast cancer represents a significant source of morbidity and mortality in developed countries. Although the most common presentations of breast cancer are a palpable mass or an abnormal screening mammogram, there are less common presentations that must be considered.^{1–3} We present a case report where the initial manifestation of breast malignancy was ipsilateral arm edema.

CASE

A 73-year-old white woman was referred to the Vascular Center and Lymphedema Clinic by her local primary care provider for evaluation of chronic left arm swelling. She reported an insect sting 10 months ago, with immediate swelling in the left hand, followed by swelling of the left arm from the wrist to the shoulder. Over the ensuing months, her hand swelling improved, but the left arm swelling persisted. Elastic wrapping of the arm yielded no significant improve-

ment. Initial work-up by her primary care provider within the first month of presentation consisted of a left arm ultrasound that was negative for venous thrombosis. Three months later a chest computed tomography (CT) scan was obtained, which was unremarkable. This CT scan was reviewed at our institution upon her referral. A calcified granuloma was noted in the left lung, but there were no abnormal findings of the left breast or axilla.

She denied past history of vascular thrombosis, pulmonary embolus, significant trauma, or surgery on the left breast, chest or arm. The only previous breast history was a benign biopsy of her right breast several years ago. Her most recent screening mammogram (done 2 months before the onset of arm swelling) was negative. She had never been on hormone replacement therapy and had no known familial predisposition for cancer. Her current medications included a beta blocker, an angiotensin converting enzyme inhibitor, a lipid lowering agent, and aspirin.

On examination at our institution, she was overweight, with a BMI of 28.5 kg/m². Her left upper extremity had significant skin thickening and changes consistent with lymphedema extending from the left clavicular region to the dorsal aspect of the hand. The digits were uninvolved. Normal peripheral pulses were present in all 4 extremities. There was no cervical, supraclavicular, or infraclavicular adenopathy. Although mild general fullness of the left axilla was appreciated, no discrete lymphadenopathy was discernable. Breast examination revealed large, pendulous, and symmetrical breasts without skin dimpling or nipple retraction. Vague nodularity was noted in the far left upper outer quadrant, but a discrete lump was not palpable.

Venous ultrasound examination of the left upper extremity was repeated and showed no thrombosis. Lymphoscintigraphy of both upper extremities demonstrated prompt ascent of activity into right axillary nodes, but no lymphatic drainage on the left with a pronounced dermal pattern consistent with lymphedema. Repeat mammogram at this time showed 2 irregular nodules in the tail of the left breast, and ultrasound showed suspicious left axillary lymphadenopathy. Fine-needle aspiration cytology of the 2 breast nodules and axillary lymph nodes revealed adenocarcinoma. The patient underwent wide local excision of the left breast cancer and axillary lymph node dissection. Pathology revealed multifocal grade 2 invasive ductal carcinoma (1.6 and 1.2 cm), and all 10 axillary lymph nodes were involved with metastatic adenocarcinoma with some extracapsular extension. A positron emission tomography (PET) scan and bone scan showed no distant metastatic disease. The patient received adjuvant chemotherapy and radiotherapy to the breast and nodal fields.

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DISCUSSION

Most breast cancers present as a palpable mass or an abnormality on screening mammography. The percentage of cancers detected by screening mammography varies, affected by the degree of participation in screening programs and the age group of the population being screened.⁴ Only a minority of patients present with other signs or symptoms. Initial presentation of breast cancer as clinically palpable axillary adenopathy with negative breast imaging (generally referred to as "occult breast cancer") is a rare occurrence (0.3–0.8%).^{3,5} Other unusual presenting symptoms of breast cancer include acute venous thrombosis,⁶ Mondor's disease,⁷ pituitary insufficiency,⁸ vaginal bleeding secondary to metastasis to uterine cervix,⁹ and paraneoplastic syndrome.¹⁰

Our patient is unusual because of her sole presenting symptom of ipsilateral arm edema, most likely caused by breast cancer obstructing axillary lymphatics. The differential diagnosis for a patient presenting with a swollen extremity includes muscle strain, fracture, hematoma, cellulitis, vasculitis, superficial thrombophlebitis, chronic venous insufficiency, deep venous thrombosis, and lymphedema secondary to lymphatic obstruction. The approach to initial evaluation of unilateral arm edema should include detailed history and complete physical examination (including breast examination), plain x-ray of the involved extremity, and Doppler ultrasound and/or venogram to rule out venous thrombosis. The diagnosis of lymphedema should always be entertained in a patient with unilateral arm edema and no venous obstruction. Lymphedema is a swelling in the soft tissues of the limb secondary to impaired lymphatic drainage. This most commonly occurs because of damaged lymphatics from trauma, surgery or radiation, but can also occur because of extensive tumor growth obstructing lymphatic flow. Unfortunately, breast malignancy leading to obstructed lymphatic flow was not considered in the initial differential diagnosis as a possible etiology for the symptoms in this patient. Awareness of this rare manifestation of a common problem like breast cancer is essential to timely diagnosis and treatment.

CONCLUSION

Breast cancer is a common disease that can have uncommon initial presentations, which divert attention from the underly-

ing malignancy. In our patient, arm lymphedema resulted from extensive nodal involvement from breast cancer. This case report highlights the importance of having a high clinical suspicion for breast cancer in a patient who presents with unilateral arm lymphedema. Failure to recognize this presentation can lead to misdiagnosis or a significant delay in diagnosis and treatment.

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