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Case Report

Late breast cancer metastasis to the urinary bladder presenting with bilateral hydronephrosis

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ABSTRACT

Introduction: Since breast cancer is the most common non-skin cancer in women and the second most common cause of cancer death in women, it is important to understand potential sites of metastasis, including rare sites that have not frequently been reported in the literature. As our cancer interventions improve, patients will live longer and we will potentially see unusual patterns of metastatic disease more frequently, as in our case of a woman with breast cancer metastasis to her urinary bladder.

Case presentation: We report a case of a 77-year-old female with history of breast cancer, metastatic to bone, and recently diagnosed bilateral hydronephrosis, secondary to a new urinary bladder mass. This mass presented 30 years after her initial cancer diagnosis and biopsy confirmed that the origin was most likely metastatic pleomorphic lobular carcinoma of breast origin.

Discussion: This case raises the possibility that unusual patterns of cancer metastasis may become more common, as life expectancy of cancer patients increases. This creates unique diagnostic and management challenges for radiologists and all members of the health care team.

Introduction

Breast cancer is the most common type of nonskin cancer in women in the United States and the second most common cause of cancer death in women [1]. Despite advances in therapy and detection, metastasis of breast cancer is relatively common and metastatic disease, particularly distant metastases, is the leading cause of death in breast cancer patients [2]. Breast cancer metastasis to lymph nodes, bone, brain, liver, and lungs are the most common [1,2]. Many metastatic cases have been documented and decades of research have followed the diverse pathophysiology of metastasis to the common locations. However, there are very few cases reported of breast cancer metastasizing to the urinary bladder [3,4]. There are even fewer cases reports which discuss the challenges in diagnosing and treating this uncommon presentation.

Case presentation

We report a case of a 77-year-old female with history breast cancer, metastatic to bone, and recently diagnosed bilateral

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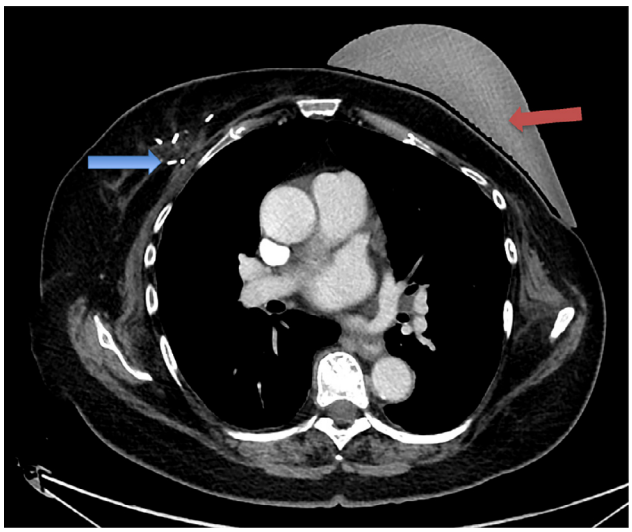

Fig. 1 – Post lumpectomy changes with surgical clips in the right breast for treatment of DCIS (blue arrow). Post left mastectomy changes with an external breast form prosthesis following treatment of remote invasive breast cancer (red arrow). (Color version of figure is available online.)

hydronephrosis, secondary to a new urinary bladder mass. Her family history is significant for her mother having endometrial cancer and her aunt having colon cancer. She is a retired paralegal and does not have a history of smoking, drinking or use of illicit drugs. She has no reported occupational toxin exposures.

The patient was diagnosed with left-sided Stage 3 breast cancer with axillary nodal metastases in 1987 and is status post left mastectomy, left axillary nodal dissection, chemotherapy, and radiation. Tumor subtype, markers, and additional details from her initial diagnosis are unfortunately not available from her initial outside institution, despite multiple requests to obtain prior records. She subsequently did not receive treatment for over 20 years. In April of 2015, the patient was found to have new right breast calcifications, biopsy of which revealed right-sided ductal carcinoma in situ, 100% estrogen receptor (ER) positive, 80% progesterone receptor (PR) positive and human epidermal growth factor receptor 2 positive. The patient underwent lumpectomy, which was followed by repeat excision for positive margins (Fig. 1). No invasive cancer was detected. Radiation therapy was not administered and the patient began a tamoxifen regimen of 20 mg per day.

October 2015, the patient underwent MRI for right-sided hip pain that showed lesions concerning for metastatic disease, later confirmed by biopsy. The pathology revealed ER-, PR-, HER1+. In December 2015, computed tomography (CT) scan of the chest showed numerous small sclerotic foci, suggestive of metastatic disease. In December 2016, abdominopelvic CT showed scattered lytic and blastic bone lesions throughout the spine and pelvis consistent with metastatic disease (Fig. 2). She received capcitabine and denosumab for her metastatic disease and she has continued that regimen.

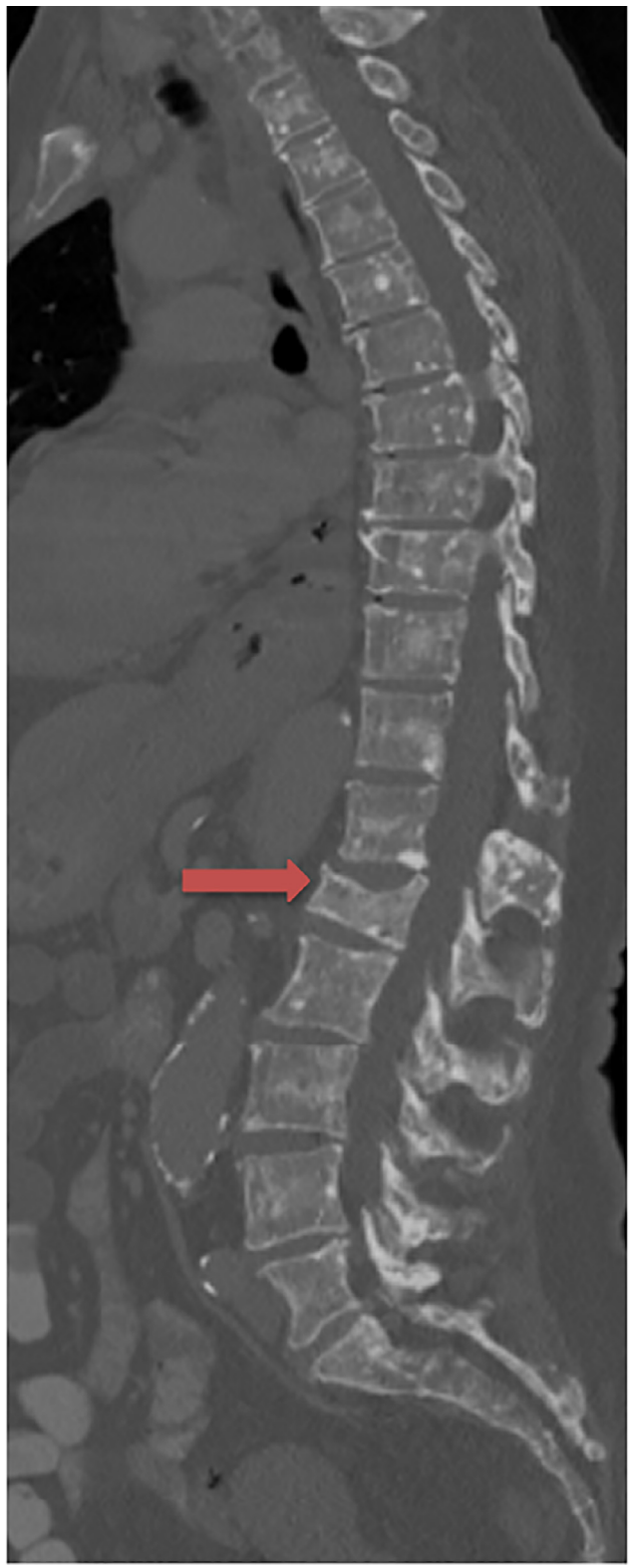

Fig. 2 – Sagittal bone window image from a contrast-enhanced CT scan of the chest, abdomen and pelvis. Diffusely mottled appearance of the bones secondary to extensive mixed lytic and sclerotic breast cancer metastases. A compression fracture is noted at the L1 vertebral body (red arrow). (Color version of figure is available online.)