CASE COMMENTARY

Bilateral Male Breast Cancer: Too Many Concerns?

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Abstract

The male breast cancer accounts for nearly 1% of all breast cancer cases and bilateral involvement occurs in less than 2% of the cases. Estrogen treatment for prostate cancer is a risk factor for primary breast cancer. Bilateral breast carcinomas were found in a 79-year-old Brazilian black man, following prostate cancer treatment with estrogen. Prostate cancer metastases could be found in breast tissue, and might be indistinguishable from primary breast tumours on histological evaluation without immunohistochemistry. Coexistence of prostate cancer with breast cancer increases future-longevity concerns.

Key Words: Breast cancer - prostate cancer - estrogen treatment - lymph node

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Background

The male breast cancer (MBC) incidence is increasing, although case reports are scarce (Agrawal et al. 2006, Jamal et al. 2006) and bilateral tumours remain exceedingly rare (Kahla et al. 2005, Melenhorst et al. 2005). Rates of MBC are higher in black men than in white and Asian Pacific island men (Goodman et al. 2006), however, the aetiological, genetic and epidemiologic factors are not cleared (Carder et al. 2005). Risk factors for MBC include family history, obesity, radiation and occupational exposures, testicular disorders, and endogenous or exogenous increased estrogen levels (Agrawal et al. 2006, Jamal et al. 2006). Life expectancy projections for coming decades show rising number of centenarians, which potentially increases prostate cancer incidence and the consequences of treatment.

Clinical Presentation

A 79-year-old black man with a previous estrogen-treated prostate carcinoma and without family history of breast cancer, presented with non tender bilateral gynaecomastia and a lump in the right supraclavicular region in December 2006 (Figure 1). The breast changes were noted about eight months before admission. There was previous diagnosis of diabetes, and treatment for prostate cancer (Gleason score 4+4) with diethylbestrol following orchiectomy in October 2003 (Agrawal et al. 2006). In adition to gynaecomastia, a hard mass with a diameter of 3 cm was found fixed to the right areola, and another hard mass of near 4 cm in diameter was found also fixed to the left areola, with skin thickening and nipple retraction. Hard enlarged lymph nodes were palpated in the right supraclavicular fossa, but no axillar lymph nodes were detected.

Tumour markers and hormonal remarkable determinations were PSA: 28.7μg/l, CA 15.3: 524.0 IU/ml, CA 125: 59.8 IU/ml, and low total and free testosterone.

Even before the histological confirmatory results, the clinical hypothesis of invasive ductal carcinoma with supraclavicular lymph node metastases was raised with basis on physical examination. The painless subareolar masses were hard and eccentrically positioned, in association with inspissated skin and nipple retraction (Agrawal et al. 2006); moreover, the clustered lymph nodes revealed a stone consistency on palpation, like commonly found in carcinoma implants. Nevertheless, until the final diagnosis could be characterized, several pitfalls and concerns had to be considered by the assistant physicians, as further discussed.

Discussion

The clinical features strongly suggested the hypothesis of advanced breast cancer, but our initial concern was about the rarity of bilateral tumours. Furthermore, gynaecomastia often follows estrogen treatment for prostate cancer, and other benign changes like epidermal cysts, lipoma, papilloma, and pseudoangiomatous hyperplasia are more frequently found than MBC and may also constitute diagnosis pitfalls. Early differentiation with benign conditions can lessen patient psychological trauma, and avoid unnecessary procedures (Chen et al. 2006).

The patient was a 78-year old black man. MBC mean age of detection is about ten years later than female breast cancers (Kahla et al. 2005), black men are at higher risk for advanced cancers and the rates of MBC are higher in this ethnic group (Goodman et al., 2006). However, earlier

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presentations are becoming commoner, and localized is the most common stage at diagnosis in all ethnic groups (Agrawal et al., 2006; Goodman et al., 2006). Although the ductal cell type constitutes the most frequent finding in BMC, in western countries tumours > 3cm are uncommon at the time of presentation (Jamal et al., 2006).

Clinical assessment with biopsy is the hallmark of diagnosis, but mammography, ultrasound and scintigraphy are useful for differentiation between benign and malignant conditions in breast enlargement or tenderness, and palpable lumps (Argawal et al., 2006). Findings like cystic or complex mass, eccentric relationship of the mass to the nipple, nipple retraction or discharge, skin thickening or ulceration, increased breast trabeculation, and palpable axillar lymph nodes are strongly indicative of MBC (Chen et al., 2006).

Different from other reports of bilateral MBC (Kahla et al. 2005, Melenhorst et al. 2005), our patient showed conspicuous lymph nodes in the right supraclavicular fossa.

Although prostate cancer metastases have been rarely found in breast tissue, the hypothesis of cancer implants mimicking primary MBC might be accurately discarded, because prostate cancer is among the most common sources of carcinoma implants in the breast. Moreover, without immunohistochemistry, prostate cancer metastases and primary breast cancer may be indistinguishable on histological studies, and expression of PSA has been described in near 1% of MBC (Carder et al. 2005). Fine-needle aspiration biopsy was the technique chosen to obtain samples from both breasts and lymph nodes (Khalbuss et al. 2006). Differentiation between primary and metastatic breast lesions, and characterization of MBC implants in lymph nodes have included the search for expression of markers as prostate specific antigen, prostate acid phosphatase, and mammaglobin (Carder et al. 2005, Cheng et al. 2006, Khalbuss et al. 2006). Very accurate differentiation is mandatory, because the treatment schedules for primary and metastatic breast cancers are radically different (Carder et al. 2005).

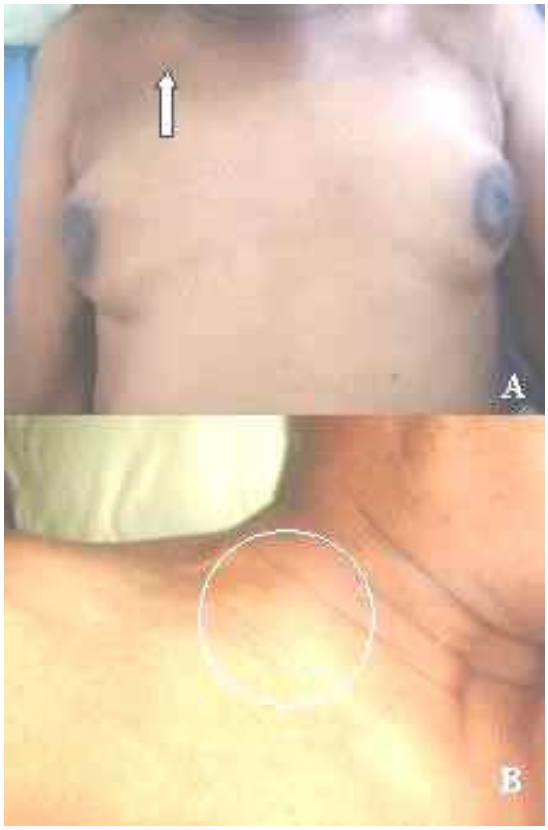

Figure 1. A) Frontal aspect of Bilateral Gynaecomastia with Left Nipple Retraction, Additionally to Right Supraclavicular Lump (arrow). B) Detail of the Clustered Lymph Nodes (encircled) in the Supraclavicular Area

Recent data indicate that most of the increased risk of MBC associated with prostate cancer is due to the estrogen treatment, but genetic studies have been required to discard familial predisposition due to BRCA2 mutations (Agrawal et al. 2006, Karlssonab et al. 2006). Another possible concern would be bilateral loss of vision, that could be due to uveal metastases from MBC. Compared to women breast cancer, uveal implants in men appear sooner, more often with bilateral and multifocal tumours (Lam et al. 2006); here, ophthalmologic evaluation revealed diabetic retinopathy and absence of metastases.

Lessons from practice emphasize the need for higher awareness about early detection of MBC, before expansion of the risk group of prostate cancer patients treated with estrogen.

References

Agrawal A, Ayantunde AA, Rampaul R, Robertson JF (2007). Male breast cancer: a review of clinical management. *Breast Cancer Res Treat*, **103**, 11-21.

Carder PJ, Speirs V, Ramsdale J, Lansdown MR (2005). Expression of prostate specific antigen in male breast cancer. *J Clin Pathol*, **58**, 69-71.

Chen L, Chantra PK, Larsen LH et al (2006). Imaging characteristics of malignant lesions of the male breast. *Radiographics*, **26**, 993-1006.

Cheng CW, Chan LW, Ng CF et al (2006). Breast metastasis from prostate cancer and interpretation of immunoreactivity to prostate-specific antigen. *Int J Urol*, **13**, 463-5.

Goodman MT, Tung KH, Wilkens LR (2006). Comparative epidemiology of breast cancer among men and women in the US, 1996 to 2000. *Cancer Causes Control*, **17**, 127-36.

Jamal S, Mamoon N, Mushtaq S, Luqman M (2006). Carcinoma of the male breast: a study of 141 cases from northern Pakistan. *Asian Pac J Cancer Prev*, **7**, 119-21.

Kahla PB, Cassaro S, Vladimir FG, Wayne MG, Cammarata A (2005). Bilateral synchronous breast cancer in a male. *Mount Sinai J Med*, **72**, 120-3.

Karlssonab CT, Malmerab B, Wiklundb F, Grönberg H (2006). Breast cancer as a second primary in patients with prostate cancer-estrogen treatment or association with family history of cancer? *J Urol*, **176**, 538-43.

Khalbuss WE, Ambaye A, Goodison S, Loya A, Masood S (2006). Papillary carcinoma of the breast in a male patient with a treated prostatic carcinoma diagnosed by fine-needle aspiration biopsy: a case report and review of the literature. *Diagn Cytopathol*, **34**, 214-7.

Lam A, Shields CL, Shields JA (2006). Uveal metastases from breast carcinoma in three male patients. *Ophthalmic Surg Lasers Imaging*, **37**, 320-3.

Melenhorst J, van Berlo CL, Nijhuis PH (2005). Simultaneous bilateral breast cancer in a male: a case report and review of the literature. *Acta Chir Belg*, **105**, 531-2.