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Case Report
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Male Breast Cancer after a 20 Years of Treated Testicular Cancer: A Case Report

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Abstract

Breast cancer in male gender is rare with an incidence of 1% of all breast cancers. There are many theories and risk factors that play a role in the development of breast cancer among males.

The development of a second primary cancer is also rare. Here in we have a case of a male breast cancer that devolved after a 20 years of treated testicular cancer. There are many risk factors that should be studied to know correlation between the two diseases.

In this case report we will show the presentation of the patient, discuss the risk factors and put our treatment plan.

Keywords: Breast cancer; Testicular cancer; Mass; Lump

Introduction

Patients with cured testicular cancer have a higher incidence to develop neoplasms than other normal subjects [1]. Many factors play a role in the development of a second primary cancer among these patients such as the long-term complications of radiotherapy, and the effect of unexplained past hormonal therapy [2]. Male Breast Cancer (MBC) is a rare disease accounting for 1% of all breast cancer cases [3]. The risk factors of MBC include family history of breast cancer especially with the ductal carcinoma *in situ* type, disrupted hormonal status with elevated estrogen and low male androgens, age above 60 years and black ethnicity [2]. The case report presents a case of MBC for a 59-year-old male with a history of orchiectomy surgery and radiotherapy for treatment of testicular cancer.

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Case Presentation

A 59-year-old male presented to the office complaining of a painful lump in his right breast. The patient noticed skin changes three months prior pain. The lump measured 15 mm × 20 mm and was firm and mildly tender (Figure 1). The patient stated that the lump had grown in the past three months. The patient has a history of orchiectomy surgery and radiotherapy for treatment of testicular cancer. The patient also had family history of the first degree with a cured testicular cancer.

Chest abdomen pelvis CT scan

The CT chest-abdomen pelvis with oral and IV contrast showed a right breast enhancing soft tissue lesion measuring about 1.6 cm × 2.3 cm with multiple right axillary lymph nodes; the largest measures about 1.3 cm in short axis for correlation with ultrasound and mammogram finding. Multiple left axillary lymph nodes were noted the largest measures about 0.9 cm short axis. Multiple sub centimeter mediastinal lymph nodes were noted. Multiple bilateral pulmonary nodules were noted in the largest seen posterior segment of the right lower lobe measuring about 1 cm × 1.3 cm mostly represent secondary deposits. No pleural effusion or pneumothorax was seen. Right liver lobe measured about 17.5 cm with evidence of 2 small hypodense lesions too small to be specified and could represent secondary deposits for follow-up. About 0.9 cm splenule was noted Spleen. Both adrenals, pancreas and both kidneys appeared unremarkable apart from bilateral renal cortical cysts the largest seen on the left side measuring about 2 cm × 2 cm. Multiple sub centimeter para-aortic and mesenteric lymph nodes were noted. No ascites was seen. Foci of calcification were noted in the prostate centrally. Left-sided inguinal hernia with internal soft tissue contents for correlation with ultrasound findings. Left femoral neck lytic lesion with sclerotic margin right iliac bone sclerotic lesion for correlation with bone scan (Figure 2).

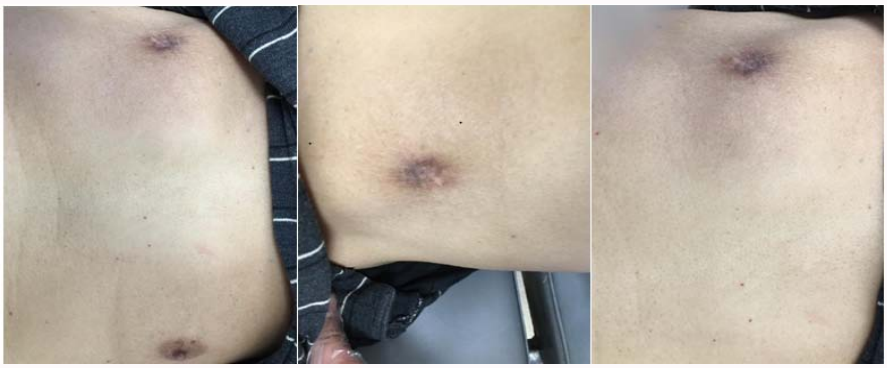

Figure 1: Male breast cancer for a 59-year –old male with a history of orchiecdectomy surgery and radiotherapy for treatment of testicular cancer.

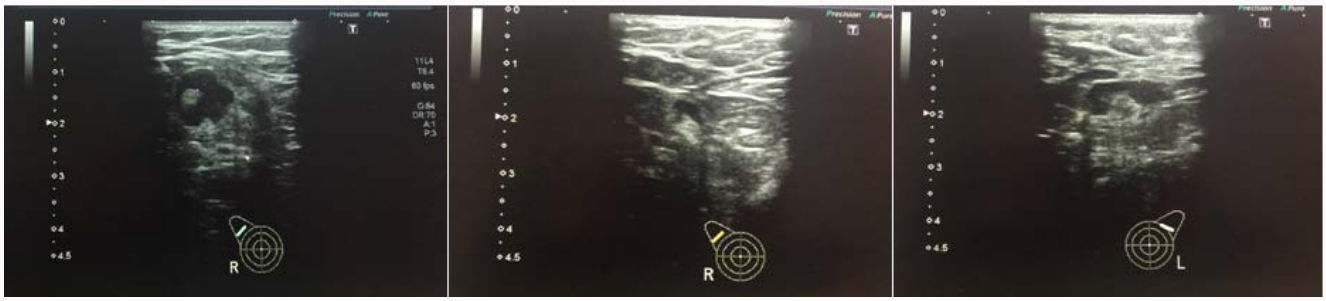

Figure 2: Breast CT scan.

Laboratory findings

The level of free testosterone was 9.9 pmol/L (12.49-89.17), Estradiol was 91.542 pmol/L (28-156), Progesterone was 0.606 nmol/L (0.7-4.3), and total testosterone was 3.293 nmol/L (9.9-27.8).

Histopathology

Sections showed multiple small needle core biopsies, two fragments of them showing sheets foci of sheet of invasive mammary carcinoma and revealed positive E-cadherin, positive HER2/neu negative (score (+1)).

Supplementary report: ER: Positive score: 5+2=7/8 PR: Positive score: 4+2=6/8 KI67: More than 30%.

Discussion

In recent years, male breast cancer patients have had worse survival outcomes compared with those of female patients. The 5-year survival rate for male patients was lower than that for female patients (82.8% *vs.* 88.5%). After controlling for other factors, the risk of death in men was 43% greater than that in women during the follow-up period [4]. So more attention should be paid to the males who are complaining of any symptoms that suggest breast neoplasms.

Socioeconomic factors, cancer stage, tumor characteristics (size and grade), and high Charlson-Dayoscore contributed to higher mortality among male patients diagnosed with breast cancer. Surgery was most effective, followed by radiation, chemotherapy, and hormonal therapy. Patients with positive ER or PR expression demonstrated better survival. Adjusting for socioeconomic factors, biomarker identification and timely, appropriately chosen treatment are likely to reduce the risk for mortality [5].

Women with breast cancer have an increased risk of developing a second, breast or non-breast, malignancy and the same appears to apply to male breast cancer patients [6]. Risk factors like age, testicular disease, benign breast conditions, family history, Klinefelter's syndrome, liver cirrhosis, chest wall irradiation, hormonal treatment, and obesity and alcohol consumption have also been implicated in male breast carcinogenesis [7].

In men population we can say that suspected genetic factors include AR gene mutations, CYP17 polymorphism, Cowden syndrome, and CHEK2. Epidemiologic risk factors for MBC include disorders relating to hormonal imbalances, such as obesity, testicular disorders (e.g., cryptorchidism, mumps orchitis, and orchiectomy), and radiation exposure. Suspected epidemiologic risk factors include prostate cancer, prostate cancer treatment, gynecomastia, occupational exposures (e.g., electromagnetic fields, polycyclic aromatic hydrocarbons, and high temperatures), dietary factors (e.g., meat intake and fruit and vegetable consumption), and alcohol intake [4]. In our patient there was a previous unexplained history of treatment of hormonal replacement therapy after he had gone the orchidectomy. There is no any significant role of the chemotherapy among our studied patient to the formation of his second primary cancer. Cisplatin was not associated with a significantly increased risk of second cancers compared with non-cisplatin-based chemotherapy [8].

Among men with a prior testicular cancer, the risk of second cancers was markedly increased for testicular cancer, and the risk remained high even more than 15 years after the initial diagnosis [9]. Here our patient has had a breast ductal carcinoma of stage 4 after 20 years of treated testicular cancer.

Age-specific incidence patterns showed that the biology of male breast cancer resembled that of late-onset female breast cancer. Similar breast cancer incidence trends among men and women suggested that there are common breast cancer risk factors that affect

both sexes, especially estrogen receptor positive breast cancer [10].

Male breast cancers have high rates of hormone-receptor expression. Approximately 90% of male breast cancers express the estrogen receptor, and 81% express the progesterone receptor. Cancers of the male breast are significantly more likely than cancers of the female breast to express hormone receptors, even after adjustment for tumor stage, grade, and patient age [11].

The management plan was to transfer the patient to the oncologist to follow-up with a palliative modality as the patient is having multiple metastatic sites liver and lung. On radiotherapy (6 cycles AC) and stated hormonal treatment (Tamoxifen). There are limited data regarding the indications for adjuvant radiation therapy in male patients, but generally similar guidelines are recommended in men as in women [8]. Adjuvant hormonal therapy clearly has a role in male breast cancer patients with hormone receptor–positive tumors. In the metastatic setting, Tamoxifen clearly has activity against male breast cancer [12].

Conclusion

Male breast cancer is a rare condition that has a bad prognosis than typical female breast cancer. There are many factors that can predispose the patient to develop a second primary cancer in his life. There is a deficiency in the researches about the development of a second tumor after having a testicular tumor. No enough data about the epidemiology or prognosis of such a case.

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