Contralateral male breast cancer with a positive family history – a case report with review of literature

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Abstract Male breast cancer is an uncommon disease. The incidence of male breast cancer has been found to be gradually but steadily increasing. However, because of rarity of this disease, it is not exhaustively studied and discussed when compared to the female counterpart. The occurrence of a contralateral breast cancer in a male is much rarer. We are reporting a case of contralateral male breast cancer with a positive family history. This is an uncommonly reported entity. The relevant literature has been reviewed and a brief discussion on the current concepts on male breast cancer has been added.

Keywords Male breast cancer · Contralateral · Family history

Introduction

Male breast cancer represents about 1% of all male malignancies and is responsible for about 0.1% of mortality due to malignancies in men. Approximately 1% of breast cancers occur in men [1]. The incidence of contralateral breast cancer in men has been reported to be around 2.7% [2]. Only few similar cases have been reported in the worldwide literature.

Case report

A 68-year-old male patient presented to us with complaints of a subareolar lump in the left breast and serous discharge through the left nipple since 4 months. The patient gave a past history of surgical removal (modified radical mastectomy with axillary clearance) of the right breast, 2 years back for similar complaints and histopathological examination of the excised specimen was diagnostic of infiltrating ductal carcinoma, scirrhous type with increased fibrosis and the excised lymph nodes showed features of metastatic adenocarcinoma. Postoperatively the patient had received adjuvant chemotherapy and radiotherapy. Incidentally the patient also gave a positive family history. His younger sister, 48-year-old, has also undergone modified radical mastectomy with axillary clearance 1 year back. Biopsy of the specimen revealed infiltrating ductal carcinoma and tested positive for oestrogen and progesterone receptors.

On general examination, the patient was obese with a body weight of 100 kg, height of 180 cm and a body mass index (BMI) of 30.86 kg/m². On local examination of the left breast, a hard irregular lump of size 2 × 2 cm was

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palpable in upper outer quadrant. It was fixed to the underlying structures. The skin overlying the lump was also fixed (Fig. 1). There was a thin serous discharge from the nipple. Axillary nodes were not palpable. Other organ systems were clinically normal. Both the testes were normal. On per rectal digital examination, the prostate was found to be normal.

The routine basic blood investigations were within normal limits. X-ray of the chest and USG of the abdomen and pelvis were normal. FNAC of the lump was suggestive of ductal carcinoma. Modified radical mastectomy (MRM) with axillary clearance was done. Histopathological examination of the specimen revealed infiltrating ductal carcinoma (Fig. 2) confirming the FNAC diagnosis. The tumour tested positive for oestrogen and progesterone receptors. All excised lymph nodes were negative. Preoperative mammography and testing for BRCA1 and BRCA2 mutations were not done, as they are not available in our set up.

Discussion

The various known risk factors for male breast cancer are positive family history, BRCA2 mutations, Klinefelter syndrome, obesity, radiation exposure, exogenous oestrogen, and testicular disorders including cryptorchidism, mumps orchitis and orchiectomy. Other suspected risk factors include cirrhosis liver, gynaecomastia, history of prostate cancer and prostate cancer treatment, occupational exposure to high temperature (presumably causing testicular damage), polycyclic aromatic hydrocarbons and electromagnetic field, alcohol intake and dietary factors [3].

Approximately 20–30% of male breast cancer patients give a family history of breast cancer [3, 4]. Family history of male or female breast cancer is associated with a 2- to 3-fold increase in the risk of breast cancer in men [3].

Whether the risk of contralateral male breast cancer is also increased due to positive family history is not known as only few cases have been published and no randomised study reports are available to the best of our knowledge. In our patient, the risk factor identified for his primary breast cancer from history and hospital records was only obesity. Subsequently his sister developed breast cancer 1 year later and underwent surgery. Contralateral breast cancer in our patient was diagnosed 2 years after the primary cancer and an additional association noted now is the family history.

Carcinomas account for about 96% of all malignant neoplasm of the male breast, while sarcomas constitute the remaining 4%. The majority of the carcinomas are ductal carcinomas. Lobular carcinoma occurs rarely, as the male breast lacks the terminal lobules. Papillary carcinoma and secretory carcinoma are very rare varieties of male breast cancer. Very rarely metastatic spread to the male breast has been described from prostatic cancer, urinary bladder carcinoma, cutaneous melanoma, renal adenocarcinoma, lymphoma and leukaemia [5]. In such cases of metastatic spread to the male breast cancer, histological examination with immunocytochemical studies are gold standard in the identification of the unknown neoplasm [6].

Male breast cancer has a high rate of hormone receptor expression, the rate of expression increasing with the patient's age [7]. Approximately 90% of the tumours express oestrogen receptors and about 81% express progesterone receptors [7]. However the her2-neu proto-oncogene is less likely to be over-expressed in these tumours when compared to the female breast cancer [8].

The tumour most commonly presents as a painless, irregular, firm to hard, eccentric, unilateral subareolar breast lump occasionally associated with nipple discharge, retraction or ulceration with a slight predilection for the left side. The nipple discharge is usually bloody in nature. Serous discharge is seen in a small proportion of patients

Fig. 1 Lump in the left breast

Fig. 2 HPE: Infiltrating ductal carcinoma

(only 15% of the patients) [4]. In our patient nipple discharge was present and was serous in nature.

Tumour size and lymph node involvement are two definite prognostic factors similar to female breast cancer. However the overall survival rates are lower for men due to older age and more advanced disease at presentation [7].

Modified radical mastectomy with axillary dissection is the standard primary treatment modality. Sentinel node biopsy is being evaluated for patients with node negative disease. Radiotherapy can be used as an adjuvant treatment to reduce local recurrences. It can also be used in the management of locally advanced inoperable tumours and loco regional recurrences in previously non-irradiated patients. Adjuvant hormone therapy with tamoxifen for 5 years has been recommended for all men with receptor positive tumours [4]. Adjuvant chemotherapy with the standard CMF (cyclophosphamide, methotrexate, 5-fluorouracil) or anthracycline based regimens has been recommended for men with node positive disease and primary tumour more than 1 cm [4]. Metastatic disease can be managed using systemic therapy in the form of hormonal therapy, chemotherapy or a combination of both. Hormonal modalities include orchiectomy, luteinising hormone-releasing hormone, tamoxifen, anti-androgens, aromatase inhibitors and aminoglutethimide. Standard chemotherapy regimens of CMF or CAF (cyclophosphamide, adriamycin, 5-fluorouracil) are recommended after failure of hormonal therapy [4].

Any lump in a male breast should be taken seriously and investigated promptly to rule out malignancy especially if there is a positive family history. Apart from this the patients with known primary breast cancer should

be followed up regularly for any suspicious lump in the contralateral breast.

Conflict of interest The authors do not have any disclosable interest

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