

Male Breast Cancer: A Case Report

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Citation

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Abstract

Cancer of the breast among men is rare, accounting for less than one percent of cancer incidence and mortality in this sex group¹. The risk of male breast cancer increases with age, and the median age of diagnosis for men is 10 years later than that for females (aged 67 to 71 years). The mean duration of symptoms before presentation ranges from 1-8 months in western countries and 12-15 months in the Asian-African population². We present the case of a 63-year-old man presenting with a left breast lump. After work-up, he underwent left mastectomy with level-2 axillary clearance. Histopathological examination revealed infiltrating ductal carcinoma.

CASE SUMMARY

A 63-year-old man presented to Hospital Universiti Sains Malaysia with a left breast lump. He had noticed the presence of the mass 20 years ago but came to seek treatment after it became hard 3 months prior to the first visit. The mass was painless, located at the lower inner quadrant of the left breast, 2cm in diameter, firm to hard in consistency and not involving skin. There was no nipple discharge and no axillary lymph nodes were palpable. Fine-needle aspiration cytology was consistent with carcinoma. Preoperative chest x-ray showed no evidence of a lung nodule and ultrasound of the hepatobiliary system showed no liver metastasis. He underwent left mastectomy with level-2 axillary clearance.

Histopathological examination revealed infiltrating ductal carcinoma, with free surgical margin, ER/PR positive, and negative axillary nodes. CT scan showed no local recurrence or distant metastasis and he was then followed up by the oncology team.

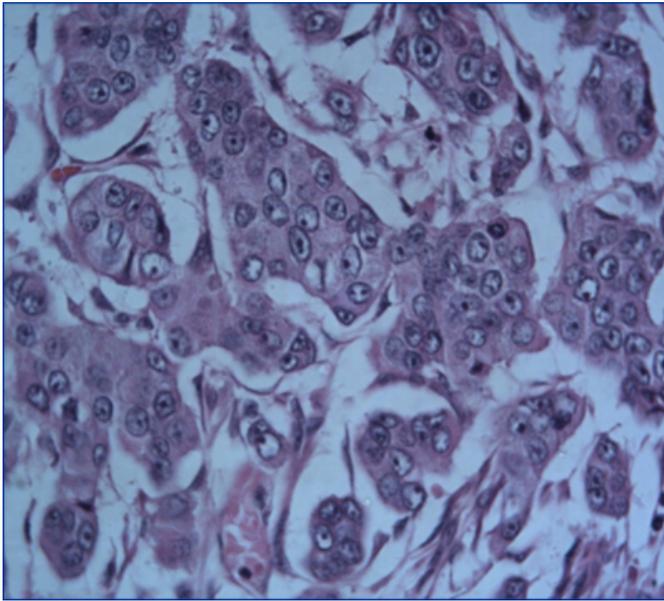
Figure 1

Figure 1: Post mastectomy scar



Figure 2

Figure 2: Moderately pleomorphic cells arranged in small clusters and vague tubules. The nucleoli are prominent. Mitotic activity is infrequent



DISCUSSION

Male breast cancer is a rare tumor and accounts for less than 1% of breast cancers, but the incidence seems to be increasing². Unlike female breast cancer, there is only one peak at the age of 67-71 years, which is approximately 10 years later than the one for female breast cancer.

In contrast to research among women with breast cancer, very little is known about the epidemiology of this disease among men. A recent review article suggested that breast cancer in men, as in women, may be hormonally driven, resulting from androgen deficiency and estrogen excess¹.

Risk factors for male breast cancer include Klinefelter's syndrome, cryptorchidism, orchitis, testicular trauma, orchiectomy, late puberty, and infertility. Gynecomastia is not a significant risk factor for male breast cancer. Similar to female breast cancer, radiation is likely a carcinogen for male breast cancer. Approximately 20% to 30% of male breast cancer patients have a positive breast cancer family history³. Germline mutations in BRCA1 are very rare in male breast cancer patients, but a relationship of male breast cancer with BRCA2 mutations has been reported.

Ethnic variation in breast cancer incidence may provide clues to its development. Israeli data show concordance between breast cancer rates in men and women: rates are highest among Jews born in Israel, lower among Jews born in Africa or Asia, and lowest among non-Jews¹. The mean

age of presentation is mostly in sixties but ranging from twenties to nineties. The duration of symptoms before diagnosis is ranging from a mean of 1-8 months⁴.

Painless mass is the predominant presentation in 13% to 90% of patients. Changes in the nipple-areola complex occur in up to one third of patients in the form of nipple fixation or retraction, inversion, oedema, or eczema. Bloody discharge is associated in 75% of cases with malignancies. Serous discharge occurs in approximately 15% of patients. Ulceration of the skin is reported in approximately 27% of patients⁴.

Male breast carcinomas appear to be biologically similar to female breast cancers but there are some basic pathological differences. They are predominantly ductal in origin as the male breast normally contains ducts only and no lobules. Infiltrating ductal carcinoma is the most common subtype of male breast cancer (84% to 94%). Both ductal carcinomas in situ and lobular carcinoma occur much less frequently in males compared with females. It has been reported that in-situ lobular carcinoma is extremely rare (comprising only 1% of cases) because of the absence of terminal lobules in the male breast^{1,2}. It is reported that 90% of MBC express ER (estrogen receptors), whereas 81-96% express PR (progesterone receptors)².

Clinical examination remains the key in evaluation of a palpable mass in men. On ultrasound, a hypo-echoic mass with mostly irregular or less commonly circumscribed margins may be observed. Primary mammographic characteristics in men include a mass, subareolar or eccentric to the nipple and mostly well-defined with speculated margins. Micro-calcifications are observed less commonly than in women, and are coarser in appearance. Fine-needle aspiration (FNA)/core biopsy guided by palpation and/or excisional biopsy are necessary to make the diagnosis⁴.

The mainstay of breast cancer surgery for men is modified radical mastectomy. This procedure involves removal of the ipsilateral breast tissue, the nipple-areolar complex, and levels I and II of the axillary contents (axillary lymph nodes underneath and lateral to the smaller pectoral muscle). Because nearly all male breast cancers approach the deep surgical margin, the fascia of the pectoral muscle should be stripped off the greater pectoral muscle during surgery. For patients for whom deep margin status is of concern, a portion of the pectoral muscle should be resected³.

Adjuvant chemotherapy with cytotoxic agents has been

shown to favorably influence survival in men with lymph node-positive cancer. A review from the University of Texas M.D. Anderson Cancer Center reported that 11 male patients with stage II or III breast cancer treated with either 5-fluorouracil, doxorubicin, and cyclophosphamide (FAC) or cyclophosphamide, methotrexate, and 5-fluorouracil (CMF) had a 64% (seven of 11) disease-free survival rate after a median follow-up 52 months³.

Since male breast carcinomas are predominantly central in location, adjuvant radiotherapy may include the internal mammary nodes in addition to the routine fields used in women. The indications for postmastectomy radiation are based on the failure patterns in women. Radiation is generally indicated when the risk of locoregional recurrence following mastectomy and systemic treatment exceeds 15% or 20%. The pathologic features that predict local recurrence rates in excess of 15% include 1) T3 or T4 primary disease; 2) involvement of four or more axillary lymph nodes, and 3) involvement of one to three axillary lymph nodes and either extracapsular extension of disease measuring over 2mm or 10 or fewer lymph nodes recovered from the axillary dissection. In women, radiation has been shown to decrease locoregional recurrences by two thirds, which translates into an improvement in survival in selected patients⁴.

Breast cancer is more often hormone receptor-positive in men than in women, and approximately 80% of breast cancers in men have hormone receptors. Therefore, hormonal therapy plays an important role in the treatment of male breast cancer. For men, tamoxifen is the mainstay of hormonal therapy for breast cancer. In small series, the response rate to tamoxifen in men with metastatic disease has ranged from 25% to 80%, depending on whether patients had undergone orchiectomy before and whether they were selected for estrogen-receptor positivity^{2,5}.

Unlike in females, the use of aromatase inhibitors in men (anastrozole, letrozole, and exemestane) may be problematic because the testicular production of estrogen is independent of aromatase and accounts for approximately 20% of circulating estrogens. The remaining 80% of circulating estrogens in men result from the conversion of androgens through aromatase⁵.

The most important independent prognostic factors appear to be tumour size, grade, lymphatic invasion, axillary node status and stage. Due to late presentation; men have more advanced disease at diagnosis than women. Sites of metastases are similar to those in women and include bone, lung, liver, brain and others. Median survival from the time of presentation with metastatic disease is approximately 26.5 months⁴.

In conclusion, screening for male breast carcinoma is not practical due to the small percentage of involved patients. However, due to lack of self-awareness, these patients usually presented late with delayed diagnosis, and larger tumor size at presentation resulting in a higher morbidity and mortality.

References

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