Breast Conserving Surgery for Male Noninvasive Intracystic Papillary Carcinoma : A case report

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(Received April 13, 2009; Accepted November 17, 2009)

We report an exceedingly rare case of male breast cancer on two brothers. The patient has family history that his younger brother had breast cancer 5 years ago. The patient was 70-years old man who presented with chief complaint of an indolent tumor mass of the left breast. Mammography demonstrated a well defined mass with microcalcifications. Noninvasive intracystic papillary carcinoma was diagnosed by excisional biopsy. We performed breast conserving surgery (BCS) with sentinel lymph node biopsy for this patient. The histological diagnosis was same as above, with no metastasis of sentinel lymph node. Immunohistochemical study showed estrogen receptor (ER) and progesterone receptor (PgR) were positive respectively, and human epidermal growth factor receptor type 2 (HER2/c-erbB-2) was negative. After surgery, he underwent radiation therapy of 60 Gy for left chest wall include nipple and areolar area. We report the case of BCS for male breast cancer. The preservation of the nipple areolar complex in male patients may also have a positive psychological impact as is the case in women treated for breast cancer. Our patients report an outstanding cosmetic result. As for the man, breast conserving therapy should be enforced without overt nipple and areolar involvement like a woman.

Key words: male breast cancer, breast conserving surgery, intracystic papillary carcinoma, family history

INTRODUCTION

BCS for male breast cancer is very rare. Because the male breast cancer would be found sometimes in advanced appearance. But we could perform BCS, because our case was found in very early stage. Furthermore, the incidence of male breast cancer in both brothers is extremely rare. So we discuss the BCS and family history in male breast cancer.

CASE REPORT

A 70-years old man who presented with chief complaint of an indolent tumor mass of the left breast without pain. No nipple discharge was noted. In family history, his younger brother experienced the breast cancer in five years ago.

On physical examination, the tumor is measuring 0.8×0.8 cm in size with smooth surface and unclear margins. The tumor is feely movable, elastic hard. There were no palpable lymph nodes in the axillary and supraclavicular fossas.

Mammography revealed a dense mass under the nipple with microcarcifications (Fig. 1). Ultrasonography of the breast showed an irregular border and low echogenicity tumor with calcifications measuring $4.0 \times 4.4 \times 2.7$ mm in size (Fig. 2). Hematological examination showed almost normal including tumor markers.

We performed excisional biopsy under local anesthesia for exact diagnosis. Microscopic findings showed intracystic proliferation of atypical epithelial cells with papillary, solid, and glandular structures (Fig. 3A, B, C). These atypical cells possessed round nuclei with distinct nucleoli and esosinophilic cytoplasm. There was no obvious two cell pattern of epithelial cells and myoepithelial cells. Deposits of calcification were scattered in the tumor nests (Fig. 3B, D). Stromal invasion was not identified. From these findings, this tumor was diagnosed as noninvasive intracystic papillary carcinoma. Additional wide excision and sentinel node biopsy were performed (Bp (2 cm) + SLNB). There were some residual foci of noninvasive intraductal carcinoma with cribriform pattern. No metastasis was identified in the sentinel lymph node. The case was classified as Tis N0 M0 (WHO classification). The carcinoma component was negative for HER2 and positive for ER and PgR respectively. After surgery, he underwent 50 Gy radiation therapy for left chest wall. We did not perform chemo endocrine therapy. There have been no signs of recurrence or metastasis to data. We show the photo of good cosmetic appearance after the operation (Fig. 4).

DISCUSSION

Male breast cancer is extremely rare, accounting for less than 1% of all breast cancer [1]. Male breast cancer typically present with a more advanced stage of disease than do female [2–3]. However, male breast cancer is not biologically more aggressive than female [4]. Historically, most reports indicate that male breast

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Fig. 1 Mammography demonstrated a dense mass under the nipple with microcalcifications in the left breast.



Fig. 2 Ultrasonography of the breast revealed a $4.0 \times 4.4 \times 2.7$ mm tumor with a irregular border and low echogenicity with calcifications.



Fig. 3 Histologic features of intracystic papillary lesion. At lower magnification (a), there is a papillary lesion in dilated cystic space. Atypical epithelial cells are arranged in a cribriform (b) or a papillary (c) fashion. Epithelial cells possess round to ovoid nuclei, and calcifying depositions are detected in tubular lumina (b, d).



Fig. 4 The preservation of the nipple areolar complex after the operation.

cancer have a poorer prognosis [5–7]. However, the authors have previously reported the survival rate of 58 male breast cancer patients compared with 174 female breast cancer patients who were matched by disease stage and age at diagnosis [3]. The survival rates at 10 years were similar for male and female patients. This report concluded that the prognosis of male breast cancer patients of the same age and stage of disease at diagnosis. The 5- and 10-year overall survival rate of 86% and 56% presented in this study support the belief that the prognosis for male and female breast cancer patients is similar for same stage. They found that the presence of family history of breast cancer did not affect the survival on male breast cancer patients.

Approximately 15% to 20% of male breast cancer have a positive family history, although only 7% of the general male population has an affected family member [8]. In men, BRCA1 does not appear to be associated with a significantly increased risk for breast cancer, although mutations in this gene have been described in affected men [9]. However, men with BRCA2 mutations are predisposed to breast cancer. This gene the frequency of BRCA2 mutation in men without a strong family history is much lower. A populationbased study from California found that only 2 of 54 cases (4%) had BRCA2 mutations [10]. Other series report that between 11% and 40% of men with breast cancer carry this mutation [8]. In our case, the patient did not agree to test of BRCA2. Male breast cancer has a higher positive rate of hormone receptor than female breast cancer. In 81% of male breast cancer, estrogen receptor was positive, and progesterone receptor was positive in 74% [8].

While breast-conserving therapy is considered strongly for female breast cancer, the small volume of breast tissue in men is thought to be a contraindication to lumpectomy [11-13]. However, a high percentage of men who develop breast cancer have some degree of breast enlargement that may permit lumpectomy making breast conservation feasible in the appropriately selected patient. Men without overt nipple and areolar involvement can safely undergo wide excision to clear margin and radiation therapy with reasonable local recurrence rate and acceptable cosmesis [14]. Unfortunately, validation of such date will not be possible because of the small number of male breast cancers. None of our patients would have met standard criteria for post mastectomy radiation based on cancer size or lymph node involvement. No patients have shown radiation induced toxicities including lung, cardiac or significant breast volume loss. Other series have reported breast conserving therapy in male breast cancer for ductal carcinoma in situ and invasive breast carcinoma with poor results. Goss et al. reviewed data from 1955-1996 and found eight male breast cancer patients who underwent lumpectomy and axillary lymph node dissection and found that the overall and disease free survival were similar to patients who had undergone mastectomy [15]. Local control was superior in the mastectomy group but radiation and margin status was not reported. In another study of ductal carcinoma in situ in the male breast, local recurrence occurred in three of six patients treated with lumpectomy; however, use of radiation and margin status was not reported [16]. Golshan M. et al. reported no local recurrence in cohort of 7 male patients treated with breast conserving therapy.

The preservation of the nipple areolar complex in male patients may also have a positive psychological impact as is the case in women treated for breast cancer. Our patients report an outstanding cosmetic result. As for the man, breast conserving therapy should be enforced without overt nipple and areolar involvement like a woman.

ACKNOWLEDGEMENTS

We have special thanks to Dr. Goi Sakamoto at breast pathological academy for his advice on the diagnosis of this case.

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