Male Breast Cancer

—A 20-year review of 16 cases at Yonsei University—

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Sixteen cases of male breast cancer seen over a 20-year period were reviewed. The causes of cancer of the male breast are no better understood, but major alterations in hormonal environment could be a significant factor. Some clinical characteristics correspond well with the results of other series. The median age at presentation was 61.7 years. The most frequent initial symption was a painless mass, and the incidences of nipple discharge, central tumor location, and axillary node involvement were high. Males also had a higher incidence of local advancement which was associated with a longer delay in seeking treatment and small breast tissue. The pathologic type was infiltrating ductal type in all cases except one, and all cases showed favorable nuclear grade. Estrogen receptor analysis was performed from the tumor of 2 patients. Both of them showed a high receptor level. There was no locoregional relapse in 5 patients who received adjuvant radiotherapy in contrast to the 2 relapses in 3 patients who underwent surgery alone. And three of the five patients who received radiotherapy suffered from systemic metastasis which suggested the important role of adjuvant chemotherapy as well as radiotherapy. In light of the encouraging results about adjuvant chemotherapy in the treatment for female breast cancer with axillary lymph node involvement, it would be desirable to extend this policy to male breast cancer.

The first reported case of male breast cancer appeared in the medical publication of Francisus Arcaeus (1493-1573) (Somerville 1952). Since that time, about 3376 cases were reported by the year 1985. In Korea, the first case of male breast cancer was reported in 1925 (Ludlow 1925), and sporadic cases have been reportd thereafter (Baik et al. 1968; Baik et al. 1968; Ko et al. 1972).

Indeed, cancer of the male breast is a rare disorder with an estimated frequency of less than 1 per cent of that in women. It accounts for only 0.2-1.5 per cent of all cancers in Western men (Treves and Holleb 1955). Because of its rarity, no individual physician sees enough patients to constitute a controlled prospective study. Very few series have been reported from single institutions (Crichlow 1972; Donegam and Perez-Mesa 1973; Langlands et al. 1976; Roswit and Edlis 1978; Yap et al. 1979).

We have reviewed our experience with carcinoma of the breast in men seen at our institution from January 1970 to February 1990 inclusive, and compared our results with those of other authors.

MATERIALS AND METHODS

We carefully reviewed the records of sixteen men with breast cancer who were referred to Severance Hospital and Yonsei Cancer Center, Yonsei University. Slides for all 16 patients in the report had previously been reviewed at our hospital at the time of initial treatment, and materials from all but one of the 16 patients were available. All the available histological materials were reviewed by one pathologist of our institution, and these formed the basis of this analysis.

Histologic typing of the carcinomas was carried out in accordance with the WHO classification (Scarff and Torloni 1968). Also, the histologic grading followed the WHO recommendation which is based on a previous report (Bloom and Richardson 1957). For the sake of uniformity, the clinical and pathological stages were reclassified according to the International Breast Staging System (TNM) (Beahrs and Meyers 1988). Hormone receptor assays were performed by enzyme immunoassay (EIA), a modified method of McGuire and De La Garza (1973).

Thirteen patients received their primary surgical procedure at our hospital. One patient received definitive local control by radiotherapy and 2 patients received palliative managements. Adjuvant radiotherapy was delivered with Co60 and an 8MeV electron beam to the chest wall, axilla, supraclavicular lymph node area, and internal mammary lymph node area with a total dose of 4600-6400 cGy. Adjuvant chemotherapy was mainly done by CMF protocol (5-fluorouracil 500mg/m² i.v. day 1,8; methotrexate 50mg/m² i.v. day 1,8; cyclophosphamide 100mg/m² p.o. day 1-14). This was repeated at 4 week intervals.

At the time of this analysis, 7 patients were still alive with a median follow-up duration of 28 months (1-134 months). The survival rates were calculated according to the method of Kaplan and Meier (1958).

RESULTS

General Characteristics

Sixteen patients with pathologically proven male breast cancer were reviewed. The age ranged from 29 to 73 years, with a median of 59.0 years. The peak frequency was at the sixth decade of life (Table 1). Associated physical conditions included chest trauma history and, liver cirrhosis, in two patients. No histories of familial breast cancer and bilateral breast cancer were found. One tumor was preceeded by gynecomastia (6.3%). And another patient had an associated primary cancer arising in an other anatomical site, the tonil. The signs of the disease were a painless lump (37.5%), nipple retraction (31.3%), axillary mass (31.3%), skin ulcer (25.0%) and nipple discharge (18.8%), in order of frequency (Table 2). The duration of symptoms before diagnosis ranged widely from two months to twenty years with a median of 23. 5 months.

Primary lesion

Nine (56.3%) of the cancers were in the left breast and 7 (43.7%) were in the right (1.3:1). None were

Table 1. Patient characteristics

Age (years)	
Range	29-73
Median	59.0
Location of tumor	
Left	9 (56.3%)
Right	6 (43.7%)
Left:Right ratio	1.3:1
Site of tumor	
Central	15 (93.8%)
Upper outer quadrant	1 (6.2%)
Size of tumor	
0-2cm	5 (31.3%)
2-5cm	8 (50.0%)
>5cm	2 (12.5%)
Unknown	1 (6.2%)
Number of LN involved	
0	7 (43.6%)
1-3	3 (18.8%)
≥4	3 (18.8%)
Unknown	3 (18.8%)
Stage	
I	3 (18.8%)
II	4 (25.0%)
III	7 (43.8%)
IV	2 (12.4%)
Histological type	
Infiltrating ductal carcinoma	15 (93.8%)
Tubular carcinoma	1 (6.2%)
Differentiation	
Poor	3 (18.8%)
Moderate	8 (50.0%)
Well	4 (25.0%)
Unknown	1 (6.2%)
Nuclear grade	
I	10 (62.5%)
II	5 (31.3%)
III	0 (0.0%)
unknown	1 (6.2%)
Interval between symptom onset and diagnosis	
Range	2 months-20 years
Median	23.5 months

LN: lymph node

bilateral. Tumors were situated in the central portion of the breast, usually beneath the nipple, in 93.8% (15/16) of the patients. In one patient (7%), the tumor was located in the upper outer quadrant. The size of the primary breast lesion varied from 1.0cm to 8.0cm in diameter with a median size of 3.7cm (Table 1).

Table 2. Clinical assessment of male breast cancer

Symptom	No. of patients	%
Lump only	6	37.5
Lump plus		
nipple retraction	5	31.3
nipple ulceration	4	25.0
nipple discharge	3	18.8
skin fixation	1	6.2
skin ulceration	4	25.0
skin redness	1	6.2
palpable lymph node	5	31.3
satellite lesion	2	12.5
arm swelling	1	6.2
distant metastasis	2	12.5

Table 3. Classification of cancer of the male breast

Classification	Number of patients
Primary cancer	16
Operable	13
Inoperable	3

Table 4. Ipsilateral axillary lymph node state

	Pathologically		
	Positive	Negative	Total
Clinically			
Positive	2 (15.4%)	2 (15.4%)	4 (30.8%)
Negative	4 (30.8%)	5 (38.4%)	9 (69.2%)
Total	6 (46.2%)	7 (53.8%)	13

Accuracy : 53.8%
False positivity : 50.0%
False negativity: 44.4%

Table 5. TNM stage of patients

T stage	N stage	M stage
T1 3 (18.8%)	N0 7 (43.8%)	M0 14 (87.5%)
T2 5 (31.3%)	N1 6 (37.5%)	M1 2 (12.5%)
T3 1 (6.2%)	N2 2+(12.5%)	
T4 6 (37.5%)	Nx 1* (6.2%)	
T4a 4		
T4b 2		
Tx 1 (6.2%)		

+ Clinical staging
* One palliative with simple mastectomy & low axilla dissection

Axillary status

Axillary lymph nodes were palpated in four of 13 (30.8%) operated patients (Table 4). Axillary node metastasis was pathologically confirmed in 6 (46.2%). and the median number of positive axillary nodes was 16 (range; 5-35). The clinical assessment of axillary lymph node metastasis could be compared to pathologic findings. The clinical impresseon of lymph node metastasis was correct in 7 patients (53.8%), falsely negative in 4 (44.4%), and falsely positive in 2 (50.0%) (Table 3). Axillary metastasis was found in 6 of 8 patients (75.0%) with primary tumors larger than 2cm, and was not found in 5 patients with tumors 2cm or less in diameter.

Stage

Stage according to the TNM system is summarized in Table 5. Among 16 patients, 3 patients (23.1%) presented disseminated disease at the initial diagnosis, and 13 (76.9%) had localized disease (Table 3). In 13 mastectomized patients, 6 patients (46.2%) where a pathologic T stage was documented had T1 or T2 lesions. A T4a lesion was found in 4 patients (30.8%), and T4b in 1 patient (7.7%) (Table 5). In one patient who had definitive local control with radiotherapy, the clinical TNM state was T4bN2MO. Stage I was 3 cases (18.8%), stage II was 4 cases (25.0%) (IIA, 1:IIB, 3), stage III was 7 cases (43.8%) (IIIA,1:IIIB, 6), and stage IV was 2 cases (12.5%). The preponderance of advanced cases is a notable feature of the disease in men.

Pathology

Among the 15 patients for whom we could reevaluate the pathologic materials, the microscopic finding was an infiltrative ductal cancer in all but one, and that of the remaining one was a tubular carcinoma. Twelve of the infiltrative carcinomas were solid throughout, forming solid masses of tumor cells without appreciable papillary or ductal formation either within the ducts or in invaded stroma. Solid infiltrative areas were also present in the remaining two, but in each case part of the tumor, often peripheral, was better organized, having a cribriform pattern or showing some papillary formation. No medullary, mucoid or lobular carcinomas were found. In evaluating the degree of histologic differentiation, three patients had a poorly differentiated tumor (20.0%), 8 patients had a moderately differentiated

Table 6. Histologic grading

	Tubule formation	Hyperchromatism & mitosis	Pleomorphism
Points	1 2 3	1 2 3	1 2 3
Number of Patients	4 9 2	15 0 0	2 12 1
	Grade 1	Grade 2	Grade 3
Points	3 - 5	6 - 7	8 - 9
Number of Patients (%)	10 (66.7)	5 (33.3)	0 (0.0)

Table 7. Treatment and prognosis of the patients

No.	Treatment of primary	Adjuvant treatment	Site of recurrence	Time of recurrence after primary treat	Type of palliation after relapse	Survival
1.	RM	RT	—	—	—	>3 months follow-up loss
2.	RM	RT	lung & liver	30 months	none	31 months expire
3.	RM	RT	lung	7.6 year	none	9 years expire
4.	MRM	RT	—	—	—	>36 months follow-up loss
5.	MRM	RT	lung	6.7 year	CT	7.0 year alive
6.	neoadjuvant CT+MRM	CT+RT	—	—	—	33 months follow-up loss
7.	MRM	none	axilla skin	6.6 year 26 months	resection & CT resection & HT	11.2 year alive
8.	MRM	none	bone bone skin	13 months 3 months 12 months	orchietomy CT CT+RT	33 months expire
9.	MRM	none	—	—	—	3 months expire
10.	RM	CT	—	—	—	2 months alive
11.	RM	CT	—	—	—	2 months alive
12.	RM	CT	—	—	—	2 months alive
13.	SM	CT	—	—	—	2 months alive
14.	RT	—	—	—	—	6 months expire
15.	palliative lumpectomy	palliative RT	—	—	—	>5 months follow-up loss
16.	palliative SM	palliative CT+HT	—	—	—	2 months alive

RM: radical mastectomy, MRM: modified radical mastectomy, SM: simple mastectomy, RT: radiotherapy, CT: chemotherapy, HT: hormonal therapy

tumor (53.3%), and the remaining 4 had a well differentiated tumor (26.7%). The nuclear grade was 1 in 10 patients (66.7%), and 2 in 5 patients (33.3%). There were no grade 3 patients in our study (Table 6).

Hormone receptors

Hormone receptor assay was available only in two patients whose estrogen receptors were positive. Progesterone receptor assay was done in one patient which was negative.

Treatment

Thirteen patients had mastectomies; radical mastectomy in 6, modified radical mastectomy in 6, and simple mastectomy in one patient. Three patients were treated with operation alone. Adjuvant radiotherapy was done in 6 patients, and another 4 patients who had mastectomies very recently are scheduled to receive adjuvant radiotherapy. Radiotherapy in one patient with locally advanced disease(IIIB) failed to reduce the progression.
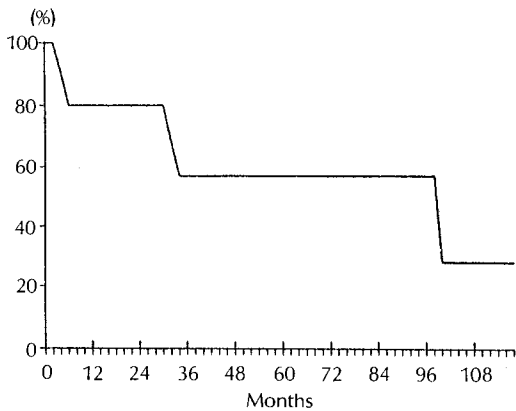
(%)

Fig. 1. *Overall survival of the patients*

Table 8. Sites of metastasis

Sites	Number of patients
Local	
Axilla	1*
Distant	
Lung	.3
Lung & liver	1
Bone & skin	1
Local & Distant	
Operation scar & bone	1*

* Operation alone

Postoperative adjuvant chemotherapy was done in one patients with CMF regimen. Of particular note in the case with clinical staging of supraclavicular lymph node metastasis (M1) is a preoperative chemotherapy. The supraclavicular mass turned out to be a sparganosis after surgery. Four recently mastectomized patients are on an adjuvant chemotherapy program with CMF. In one patient with a high estrogen receptor content, an adjuvant treatment with tamoxifen is planned with chemotherapy.

Palliative treatment included simple mastectomy, irradiation, hormonal teatment, and chemotherapy. Simple mastectomy with chemohormonal therapy and lumpectomy with palliative radiotherapy were used in two cases with stage IV tumors. In the latter patient, the radiotherapy controlled the bone pain effectively for 2 months, but failed to produce regression in the skin lesion. In the former, the response could not be evaluated due to a short treatment period. Palliative chemotherapy was done in three episodes of relapse. In one patient with an axillary mass, a primary resection and 3 courses of chemotherapy were done with a response duration of 26 months. In the second patient, chemotherapy was done after failure of orchiectomy. The response duration was 12 months. In the third patient with lung metastasis, only one course of chemotherapy was administered. In this patient, the response could not be evaluated. Castration was done in one patient with bone recurrence and bone pain was relieved for 3 months. Tamoxifen was tried in two patients with distant failure. One patient with skin relapse took tamoxifen after resection of the mass. He is alive without any evidence of relapse for 2 years. Recently, we are trying combined chemo-hormonal therapy after simple mastectomy in stage IV patient with an estrogen

receptor positive tumor (Table 7).

The crude 5-year survival was 57% and 10-year survival was 28% (Fig. 1). Among 13 patients with curative resection, the duration of follow-up was variable from 6 months to 117 months (median 57 months). And the median disease-free interval was 46 months (range; 13-90 months).

Pattern of recurrence

Two out of 16 patients had developed disseminated disease at presentation; one patient had locally systemic recurrence (skin), and another patient developed systemic disease in lung and bones. Among 5 patients who received adjuvant radiotherapy, 3 patients relapsed in distant organs (2 in lung; 1 in lung and liver). In contrast to this, 2 patients who were treated with operation alone relapsed in local and systemic areas (bone) in one patient, and in the axilla in the second patient. One interesting patient with neoadjuvant chemotherapy is alive for 30 months with adjuvant chemoradiotherapy. And one more patient with adjuvant radiotherapy is still alive for 36 months without evidence of relapse (Table 8).

DISCUSSION

In general characteristics, the clinical features of male breast cancer are similar to those found in female cases except for some factors like age, location, tumor grade and hormone receptor state. Many authors have emphasized that men develop breast cancer at a later age than women (Crichlow 1972; Roswit and Edlis 1978). The median age of men in our series was 59.0 years which was a decade older than the median age of women with breast cancer (Meyskens *et al.* 1976; Koh *et al.* 1985). In men, the association of breast trauma with mammary cancer is unclear. Only one

of our patients (6.2%) gave a history of antecedent trauma which was the same ratio compared to the 8% by Liechty et al. (1966), but lower compared to the 30% of Sachs' review (1941). Disturbances of hormone metabolism have long been implicated in the development of breast cancer in males (Cuenca and Becker 1968; Lynch et al. 1974; Nirmul et al. 1983). Especially, hyperestrogenism secondary to bilharziasis and liver fibrosis has been suggested as a possible cause of the high incidence in Egypt (El-Gazayerli and Abdel-Aziz 1963). In out study, there was a long history of liver cirrhosis in one patient and a history of gynecomastia in another. Unfortunately, no hormone measurements were available in these patients. In this series, 6.2% of the patients had an additional primary tumor. The low incidence of other primary tumors in our series compared with those reported in the literature (Huggins and Taylor 1955; Yap et al. 1979) might result from the small patient number. The delay from onset of symptoms to diagnosis has been decreased from 18 months before 1974 to 10 months after 1981, showing a considerable shortening in recent years (Crichlow 1972; Meyskens et al. 1976). But unfortunately in our experience, the median duration was 23.5 months with no difference between the 1970s and 1980s.

As in all of our cases, a painless mass just beneath the areola is almost a universal initial symptom of carcinoma of the male breast. Also, abnormalities of the nipple or discharge were commonly found (Seltzer et al. 1970). A detailed study of nipple discharge in male breast cancer revealed an incidence of 13.7% of malignant lesions. Conversely, in 75% of patients with bloody discharge, cancer was diagnosed at approximately 3 times the frequency observed in females (Crichlow 1972). In previous reports, tumors were located more in the left breast, at a ratio of 1 to 1.07 in favor of the left breast, which approximates, but is less than, the 1 to 1.3 ratio reported for females (Crichlow 1972; Ajayi et al. 1982). Our patient showed the same ratio as that of females (1:1.3). But the predilection for the left breast remains unexplained in both males and females. Another difference in tumor location in the male breast is that men more often had primaries adjacent to the nipple and with signs of local advancement, which was considered commonly as the cause of poor prognosis in males. Fifteen cases (93.8%) of our study had a mass in the subareolar area, and more than half the patients had locally advanced or metastatic lesions on presentation, again confirming the fact that the preponderance of advanced cases is a notable feature of the disease in men. It was the same ratio as the other institutes

reported (Sachs 1941; Donegan and Perez-Mesa 1973; Langland et al. 1976; Yap et al. 1979).

Study of coexisting populations of males and females with breast cancer showed no differences in frequency of clinical node involvement (Sachs 1941). And the most important factor determining prognosis was axillary node metastasis, considering the fact that the percentage of men with positive axillary node involvement was the same as that for women (Mausner et al. 1969), especially in stage II disease (Pearson et al. 1989). In our series, 30.8% of operable patients showed an axillary mass at presentation. But the accuracy was only 53.8%. Moreover, the false negative rate (44.4%) and false positive (50%) rate were high like those previously reported, 48% and 37% respectively (Cutler and Connelly 1968). There is little doubt that patients with a primary tumor greater than 5cm in size and involvement of the ipsilateral axillary lymph nodes constitute a poor prognosis group (Mausner et al. 1969). In our series, although the prognosis could not be compared dut to the small patient number, the primary tumor size and the microscopic nodal state were well correlated. Among patients with a primary mass size less than 2cm, there was no axillary metastasis. In patients who had a large tumor mass more than 2cm in diameter, axillary metastasis was found in 75.0%. These two prognostic factors are equally applicable in male the and the prognosis of male patients is comparable to that of female breast cancer patients.

More than half of the patients (56.3%) had locally advanced or metastatic lesions on presentation, which was the same compared to the 54% of Scheike's report (1974). But fortunately, the resection rate was higher (81.3%), as others reported (Sachs 1941; Huggins and Taylor 1955; Stephenson and Gordon 1969). The preponderance of locally advanced disease at initial presentation is a more notable feature in men than in women due to the low incidence, rapid invasion to the chest wall and skin from small remnant breast tissue, and central location. Regarding the encouraging reports about combined modality treatment for locally advanced female breast cancer (Hortobugyi et al. 1990), preoperative chemotherapy would be an attractive method for locally advanced male breast cancer.

A popular notion exists that neoplasms of the male and female breast are similar in type and differentiation. The most common histologic type is infiltrating ductal carcinoma which composed 85% of cases (Visfeldt and Scheike 1973). The same result was found in this study and all of our cases except one were infiltrative ductal carcinoma. In recent years there has

been a revival of histopathologic nucleus grading for neoplasms of the female breast. Hultborn and Tornberg (1960) have shown favorable prognosis in low grade malignancy compared to unfavorable prognosis in high grade lesions. And they reported that 75% of infiltrating ductal cancers showed high grade malignancy in females. Even though we did not have an adequate patient number, there was no high grade tumor. But a similar result was reported by Visfeldt and Scheike (1974), suggesting a lower incidence of high grade tumor in males than females.

Wittloff (1974) provided the first report of the existence of estrogen receptors in a case of male breast carcinoma. After that, the literature reported that eighty-four percent of patients had a positive estrogen receptor content which is greater than that in women with breast cancer (Gupta *et al.* 1980; Friedman *et al.* 1981). Because the hormonal receptor assay was started in 1988 at our hospital, only two cases were evaluated for estrogen receptor content. These two cases showed a high level of estrogen receptor content. Concerning the fact that estrogen rich tumors respond objectively to appropriate endocrine therapy in 55-60% of cases, whereas only 5% of estrogen receptor poor tumors do (Ribeiro 1985), we tried tamoxifen in the two positive patients, but the response rate was unevaluable yet due to the short treatment period.

Prior to 1961, the standard treatment for operable male breast cancer was a radical mastectomy with or without postoperative radiotherapy (Liechty *et al.* 1966). The decision as to whether a simple or radical mastectomy was indicated was based primarily on the age, site of the primary tumor, and the extent of metastatic nodal involvement (Robison and Montague 1982). But there were continuing reports that there was no significant difference in local recurrence between those patients having a radical mastectomy and those having had a simple mastectomy and adjuvant radiotherapy (Scheike 1974; Robison and Montagene 1982; Ouriel *et al.* 1984). Moreover, another institute reported the fact that patients who had a simple mastectomy survived an average of 15 months longer than those who had radical mastectomies (Ribeiro 1985). So, since 1961, a simple mastectomy with adjuvant radiotherapy is now the most common treatment modality. In our institution, radical mastectomy with or without radiotherapy was a standard treatment during the 1970s, but now it has been changed to simple or modified radical mastectomy with an adjuvant treatment program.

Since all breast tumors in men are centrally located, adjuvant radiotherapy should be delivered to the peripheral lymphatic area, consisting of the ipsilateral internal mammary, supraclavicular, and infraclavicular nodes. This local adjuvent radiotherapy does not influence overall survival in male breast cancer, but does decrease the incidence of chest wall recurrence (Robison and Montague 1982). In our series, a similar trend was found. Local relapses occurred in two of three surgically managed patients, while three distant relapses occurred in 5 patients who received adjuvant radiotherapy. Survival after recurrence is short and is similar to that observed for women with recurrent breast cancer, since there seem to be little differences from female breast cancer in the biologic behavior (Erlichman *et al.* 1984). Based on our previous experiences as above, we are planning adjuvant chemradiotherapy for four recently operated patients to decrease local and distant failure.

Traditionally, orchiectomy was a standard hormonal treatment in advanced disease with a 48% response rate and 11 month response duration (Treves 1959). Adrenalectomy and hypophysectomy were a sequential therapy with a greater response rate (53% and 50% respectively) than in females (Li *et al.* 1969; Kennedy and Kiang 1971) if prior orchiectomy had failed to render a response. But the most important obstacle in hormonal treatment, although bilateral orchiectomy is a simple procedure virtually devoid of complications, is that it is often rejected by patients for psychologic or cultural reasons. So the excellect tolerance to tamoxifen and a rate of response (48%) similar to the rate of response to orchiectomy (45-68%) (Hortobagyi *et al.* 1979; Becher *et al.* 1981) justifies the consideration of this durg in the primary treatment of metastatic breast cancer in men in order to postpone orchiectomy. Another advantage of tamoxifen is that it does not preclude further hormonal treatment. In our institution, we experienced one case of orchiectomy with favorable response. However, our strategy of hormonal treatment first is changing to the administration of tamoxifen after evaluation of the estrogen receptor state as both an adjuvant and a palliative aim.

The crude 5-year survival of our male breast cancer patients was 57%, like that of the reported survival of 22-54% (Cortese and Cornell 1970; Ajayi *et al.* 1982). If analogue stages of the disease in the two sexes at the time of treatment are compared, there is no evidence to support the opinion that cancer of the male breast is more lethal than the corresponding disease in women (Turell 1968; Langlands *et al.* 1976). In operable male breast cancer, the 5-year and 10-year survivals are 72% and 40% respectively (Heller *et al.* 1977), similar to the survivals of females. But the same

5-year survival rate showed some difference in the 10-year survival with lymph node metastasis. In men with no axillary metastasis, the 5- and 10-year survivals were 90% and 79% respectively. However, after 10 years, only 11% of men with positive axillary nodes had survived (Heller *et al.* 1977). Because of the poor prognosis in men with axillary nodal involment, adjuvant therapy should be considered at least in this high risk group.

In conclusion, this retrospective review of male breast cancer reemphasizes the aspects of greater delay of diagnosis, higher age, central tumor location, lower tumor grading, locally advanced stage, and estrogen receptor status. Lymph node involvement may play a crucial role in the poor prognosis´factor in men as it does in women. So adjuvant chemotherapy and radiotherapy would be beneficial in male breast cancer as in female, especially for the cases of axillary node involvement. And in view of the high frequency of estrogen receptor positive cancers in men, adjuvant hormonal therapy can be added according to estrogen receptor status.

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