Carcinoma of the Male Breast

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CARCINOMA of the male breast is uncommon when compared to female mammary cancer. Between 1932 and 1967, 31 male patients with this diagnosis were admitted to The New York Hospital-Cornell Medical Center. During the same interval there were 1,758 female patients with breast cancer. Benign mammary tumors in females totaled 2,399 and in males, other than gynecomastia, were 30. At this institution, 1.7% of mammary cancers occurred in males, indicating a male to female ratio of approximately 1 to 57. This figure parallels the less than 2.5% incidence of cancer of the breast in males reported in the series of Treves and Holleb,[24] Moss,[12] Sachs,[16] and Payson and Rosh.[13] Holleb's *et al.*[6] review of the literature compiles an average incidence for cancer of the breast at 0.7% of all cancers in males. In females, cancer of the breast is 23% of all reported cancers.[5]

Patients

Of the 31 patients, 28 were Caucasian and three were Negro. There were no Orientals. The average age at admission was 59.1 years with a range between 42 and 80 years. There was no significant familial history of breast disease or of cancer in these patients. Hypertension, which occurred in four men was the most common medical disease. One patient had prior prostatic carcinoma treated by bilateral orchidectomy and estrogen administration. There were no patients with history of liver disease, gynecomastia, Klinefelter's syndrome or other endocrine disorders. Of 31 patients, 20 were considered candidates for primary curative resections and one underwent completion of a radical mastectomy following simple mastectomy elsewhere. Three patients who had widespread disease had no prior therapy. Six had received primary treatment elsewhere and were admitted with extensive recurrences. One elderly patient was treated by simple mastectomy, because advanced heart disease was considered a contraindication to radical mastectomy.

Signs and Symptoms

The commonest manifestation of mammary carcinoma in the male is a lump in the breast. This occurred in 21 of the 24 patients admitted without prior operation. The average size of tumors, measured clinically before operation, was 3.8 cm. with a range between 1.5 and 6.0 cm. Fixation to the skin or chest occurred in ten patients, nipple retraction in ten and ulceration of the overlying skin in two. Cancer of the male breast was found in three patients who had no palpable tumors. Two patients had bloody nipple discharge and one had

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TABLE 1. *Results of Patients Receiving Primary Therapy by Radical Mastectomy with Positive Axillary Nodes at the New York Hospital-Cornell Medical Center*

No.	Postoperative Radiotherapy	Survival	Death Due to Cancer
1	No	10 years	Alive
2	Yes	6 years	Yes
3	Yes	6 years	Yes
4	Yes	5 years	Yes
5	No	5 years	Yes
6	No	5 years	Alive
7	Yes	3 years	Yes
8	Yes	3 years	Alive
9	No	2 years	Yes
10	Yes	2 months	No
11*	Yes	5 years	Alive

* Patient 11 had axillary dissection followed by radiotherapy two years after simple mastectomy. He is alive 7 years after mastectomy.

skin ulceration. Although Peck [14] found masses in 100% of his patients, Holleb,[6] Treves and Holleb,[24] Huggins and Taylor [8] described cancer of the breast in the absence of palpable masses. Treves [25] reported sanguineous drainage as characteristic of cancer in patients with nipple discharge.

Paget's disease in association with carcinoma occurred in one of our patients and has been similarly reported by others.[18, 21]

TABLE 2. *Results of Patients Receiving Primary Therapy by Radical Mastectomy with Negative Axillary Nodes at the New York Hospital-Cornell Medical Center*

No.	Postoperative Radiotherapy	Survival	Death Due to Cancer
1	No	22 years	Alive
2	Yes	19 years	Alive
3	No	9 years	Alive
4	No	7 years	Alive
5	Yes	3 years	No
6	No	2 years	No
7	No	Lost to follow-up	
8	No	Lost to follow-up	
9	No	Lost to follow-up	
10	No	Lost to follow-up	

Of 25 patients who underwent operations cancers were on the left side in 13 and on the right in 12. Keller [10] and Smith [19] and Huggins and Taylor [8] reported a similar distribution, whereas Sachs [16] and Holleb [6] and Wainwright [26] reported moderate left sided preponderance.

Bilateral cancers did not occur in any patient but was reported by Holleb [6] in 2.5% and Keller [10] in 3.5% of their series of more than 175 patients each. Subsequent cancer in the contralateral breast has not been detected in our series. One patient developed prostatic cancer 6 months after breast cancer.

The majority of palpable cancers in our series were retroareolar. One was located in the right upper outer quadrant and one was in the left upper inner quadrant. Ipsilateral axillary node metastases were detected on pathological examination in 50% of the 20 patients upon whom radical mastectomy was performed. Sachs [16] and Wainwright [26] recorded the incidence of positive axillary nodes to be 48.3% and 54.2%, respectively.

Inflammatory changes as described by Treves [23] were noted on clinical examination of the diseased breasts of two patients.

The average duration of the first sign or symptom prior to seeking medical advice was 15.5 months with a range of one week to six years.

Pathology

All of the primary cancers were infiltrating ductal carcinoma. No instances of sarcoma, medullary or papillary carcinoma were recorded.

Therapy and End Results

Results of treatment are summarized in Tables 1 and 2. In 20 patients after the diagnosis was established radical mastectomies were performed. In the twenty-first patient axillary dissection was done 2 years

TABLE 3. *Palliative Therapy of Males with Advanced Breast Carcinoma at the New York Hospital-Cornell Medical Center*

No.	Treatment of Primary	Time of Recurrence after Primary Therapy	Type and Time of Palliation after Primary Therapy	Time of Death after Primary Therapy
1	Radical Mastectomy	3 years	Chest wall resection and radiation, 3 years; Radiation, bilateral orchidectomy and corticosteroids, 8 years; Hypophysectomy, 10 years	12 years
2	Radical Mastectomy	4 years	Radiation, 4 years	7 years
3	Radical Mastectomy	3 years	Bilateral orchidectomy and estrogens, 3 years; Hypophysectomy, 4 years	5 years
4	Radical Mastectomy	4 years	Radiation, bilateral orchidectomy and estrogens, 4 years	4.5 years
5	Simple Mastectomy	Advanced disease at initial diagnosis	Radiation after simple mastectomy	3 years
6	Simple Mastectomy	Advanced disease at initial diagnosis	Hypophysectomy, 1 month	4 months
7	None	Advanced disease at initial diagnosis	Radiation	Lost to follow-up
8	Radical Mastectomy	3 years	Radiation and adrenalectomy, 3 yrs.; Hypophysectomy, 4 yrs.	Lost to follow-up
9	Local Excision	3 years	Radiation and estrogens, 3 yrs.	Lost to follow-up

after simple mastectomy had been done elsewhere. Axillary dissection was prompted by metastasis in the axilla.

Ten patients had axillary metastases on pathologic examination of the surgical specimens. Six of these with regional metastases received x-ray therapy following operation. One patient is alive and free of cancer 3 years following treatment. One died in the early postoperative period while receiving radiation therapy. The remaining four patients died 6, 6, 5, and 3 years after therapy. Of four patients with axillary metastases who received no additional treatment, two survived 10 and 5 years following operation, one died at 2 years and the other at 5 years following operation, both with widespread cancer.

Four patients whose cancers were limited to the breast on pathologic examination have been lost to follow-up. Of the remaining six who had no axillary extension four are alive and clinically free of metastases at 22, 19, 9 and 7 years following radical mastectomy. One patient died with acute cholecystitis three years following radical mastectomy and postoperative radiotherapy. At autopsy there was no evidence of metastases. The final patient died from myocardial infarct 2 years after mastectomy and was clinically free of cancer at the time of death. Only two patients whose cancers were limited to the breast were given radiotherapy following operation. The twenty-first patient, who was subjected to axillary dissection for regional recurrence, also received x-ray therapy after operation and is alive and well 7 years following simple mastectomy.

One patient had no evidence of metastasis on clinical evaluation. Because of advanced age (80 years) and cardiac decompensation simple mastectomy was done. Six months later prostatectomy followed by

bilateral orchidectomy was performed for carcinoma of the prostate at another hospital. He died of undetermined cause approximately 10 months later.

Nine patients had advanced cancers of the breast at the time of first visit to this hospital. The clinical courses of these patients are summarized in Table 3.

One patient (6), had prostatic carcinoma treated by bilateral orchidectomy and estrogen administration 5 months prior to the diagnosis of cancer of the breast. At this time he had metastases to bone, liver and nodes. Simple mastectomy was followed by hypophysectomy, but he failed rapidly and died after 4 months. In a second patient (5), simple mastectomy was performed in the presence of advanced disease. This was followed by irradiation of the axillae and distant metastases. He died of cancer 3 years after treatment. In a third patient (7) with cancer of the breast, a supraclavicular node excised established the diagnosis of extension. One year after radiotherapy he had pulmonary metastasis and was then lost to follow-up.

Six patients with advanced cancers came to this hospital after primary treatment at other institutions. These patients were treated by combinations of modalities varying from local excisions of recurrent lesions to hormone administration and ablative operations on the testes, adrenals or pituitary.

The interval between primary treatment and diagnosis of recurrent cancer varied from 2 to 4 years. One man (1) entered this hospital with recurrence in the chest wall 3 years following radical mastectomy and irradiation therapy at another institution. The local recurrence was excised and additional x-ray therapy administered. A second recurrence appeared 5 years later (8 years after mastectomy) following which bilateral orchidectomy was performed. A third exacerbation 2 years following orchidectomy was treated by hypophysectomy. The patient lived an additional 2 years before a fourth and final exacerbation resulted in death. This patient had 8 years of palliation and despite recurrences survived 12 years following initial operation. A second (2) patient had undergone radical mastectomy and regional radiotherapy at another hospital. On admission here, 4 years later, he had unilateral pulmonary metastasis. After a biopsy additional irradiation therapy was applied to the lung. He lived 3 more years and eventually died with widespread cancer 7 years after primary treatment. One (3) patient underwent bilateral orchidectomy and estrogen therapy for recurrence 3 years after radical mastectomy. Hypophysectomy 1 year later was followed by death in 12 months. Another patient (4) who was treated by radiotherapy, estrogens and bilateral orchidectomy for recurrence 4 years after radical mastectomy died 7 months after therapy.

One patient (8) with metastases to bone was treated by x-ray therapy and adrenalectomy 3 years after radical mastectomy. One year later, hypophesectomy was performed after which he was lost to follow-up. A final patient (9) with skeletal recurrence 3 years after local excision was treated by radiotherapy and estrogens. He was also lost to follow-up.

Of the 31 male patients with cancer of the breast, seven were lost to follow-up and 24 remained for survival analysis. Of these, 13 survived more than 5 years, a 54% crude 5 year survival.

Discussion

The etiology of carcinoma of the male breast is unknown. Trauma has been implicated, but as in females there is no good evidence of a relationship.[4, 26] Estrogen administration following orchidectomy for carcinoma of the prostate has been suggested as a causative factor.[1, 11] Since estrogens are given for prostatic cancer there should be an increased incidence in these patients. Experience in this institution and reports in the literature fail to disclose such

an increase.[2, 6] Two other observations add to the evidence that estrogen administration has a limited causal relationship to the cancer of the breast in men. First, inoperable mammary carcinoma in men may occasionally be palliated by estrogen therapy or by orchidectomy.[22] Second, the combination of gynecomastia and carcinoma [4, 6] is probably coincidental. In 656 men undergoing operations for gynecomastia, none had mammary cancer, or developed it subsequently.

In Keller's [10] Veterans Hospitals experience there was no socio-economic or medical factor common in the background of their patients. Klinefelter's syndrome has been implicated by two authors.[9, 17]

In our experience carcinoma of the male breast is a slow growing, moderately aggressive disease. Symptoms can be directly related to the level of spread and to prognosis. Radical mastectomy prior to invasion of regional nodes provides the longest survival. Further, even in patients with positive nodes, six of ten undergoing radical mastectomy survived more than 5 years.

The average duration of signs or symptoms in patients with local disease was 6.4 months, contrasted to an 18.5 month's in those with positive nodes and 44 months in those with widespread disease. Delay in diagnosis and surgical intervention adversely affects prognosis. Nipple retraction, skin ulceration or nipple discharge, even without a palpable mass should prompt immediate biopsy. Three patients operated upon prior to the development of a breast mass had negative lymph nodes.

In Holleb's [6] analysis of Memorial Hospital patients there was a 5-year survival rate of 29.8% in 184 unselected patients. For 117 operable patients 5-year survival free of disease was 42.7% and the 5-year clinical cure, 57.1%. For patients with infiltrating duct carcinoma, there was an 80% 5-year survival in patients with tumors confined to the breast. This was reduced to 27% if the nodes were involved.

Men with cancer of the breast must be followed carefully and recurrences treated aggressively. For single metastasis, local excision followed by radiation may result in excellent palliation. Multiple recurrences are amenable to endocrine modification.

Objective remission achieved by bilateral orchidectomy, adrenalectomy or hypophysectomy has been reported.[3, 7, 15, 22]

In view of the benefits of orchidectomy this procedure should be included in initial management of inoperable or recurrent cancer. Holleb [6] reported a 45% one year or more remission following orchidectomy in 38 patients with disseminated disease. Progressive therapy including either adrenalectomy or hypophysectomy or both is justified in appropriate circumstances.

Summary

Over the 35-year period, 1932–1967, thirty one patients with cancer of the male breast were admitted to The New York Hospital-Cornell Medical Center. Twenty were considered suitable candidates for primary treatment and all were subjected to radical mastectomies. One half of these patients had axillary metastases and six received radiation therapy following operation.

The crude five-year survival rate for patients receiving primary treatment was 54%.

The view is presented that cancer of the male breast is a relatively slow growing tumor and that nearly direct relation exists between duration of symptoms and the stage of the disease.

It is concluded that there is an excellent prognosis in patients with symptoms of six months or less duration. Aggressive treatment of recurrences can eradicate the disease and provide excellent palliation.

Remission of disseminated cancer of the male breast through endocrine manipulation is reported in selected patients.

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