Mammary Carcinoma in Old Age *

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IN RECENT years there has been an increasing interest in the relationship of the age of the patient with mammary carcinoma to the prognosis of her disease. The results of treatment in the younger age group were recently reviewed by Kleinfeld, Haagensen and Cooley [11] who demonstrated clearly an increased malignancy and poorer prognosis in young patients.

The prognosis of mammary carcinoma in advanced age, however, presents a more complicated problem. As life expectancy increases, there should be an increasing number of older women with breast carcinoma who may be expected to survive long enough, if their breast disease can be controlled, to reach the 5-year mark, or even the 10-year mark. Clinicians, however, have too often treated these elderly patients less vigorously, assuming that they cannot withstand a radical mastectomy, and that the progress of their disease is usually not so rapid as in younger patients. The results of this kind of conservative treatment have been inferior, and the assumption upon which it is based needs to be tested critically.

There is a wide diversity of opinion regarding the malignancy of the disease in the aged. MacDonald [13] in his review of 2,636 cases stated that age is not an important prognostic factor. Evans and Leucutia [7] found a distinct excess of 5- and 10-year cures in the group under 40 years of age. In the series of cases reported by Richards [15] the lowest rate of survival was among women over 71. Harrington [10] reported that in patients with localized disease the highest percentage of 5-year survival was in the third and fifth decades of life, and in patients with axillary node metastases it was in the sixth decade. Kraft and Black [12] have recently studied a group of 75 women with mammary carcinoma who were 75 years of age or older. They concluded that the disease is not less malignant in their older patients. Ratzkowski [14] found no correlation between the age at onset of the disease and length of survival.

On the other hand, some studies support the opinion that the disease is less malignant in old age. Cade [5] stated that there is some evidence that in very old patients the disease does not materially shorten life. Scandalakis [18] also concluded that the results of treatment were better in older patients. Ryan,[16] in his report of breast cancer in Connecticut, found that with advancing age, there is an increasing tendency for the cancer to be found in a localized stage at the time of diagnosis. In his series the disease was localized in 40.6 per cent of the patients in the 45–54 year age group, as compared with 51 per cent of the group 75 years of age and over.

The natural history of untreated mammary carcinoma provides additional interesting information regarding the significance of the age of onset of the disease. Daland [6] collected the histories of 100 untreated patients, and found a mean dura-

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TABLE 1. *Five-Year Results of Radical Mastectomy Personal Series, 1935–1955. (19 Patients Dying of Intercurrent Disease in Less Than 5 Years Omitted)*

Columbia Clinical Stage	Age Group	No. Patients	5-Year Survival No.	5-Year Survival %
	35–under	14	7	50.0
A	36–64	263	236	89.7
	65–over	54	47	87.0
	35–under	10	5	50.0
B	36–64	101	60	59.4
	65–over	22	17	77.3
	35–under	4	2	50.0
C	36–64	45	18	40.0
	65–over	13	7	53.8
	35–under	0	0	0.0
D	36–64	8	0	0.0
	65–over	3	2	66.7
Total		537	401	74.7

tion of life of 40.5 months. Shimkin [17] reported a mean survival time of 36 months for untreated carcinoma of the breast in women over 75 years of age. Recently Bloom [2] *et al.* have published a review of 250 untreated cases of breast carcinoma from the records of the Middlesex Hospital between 1805 and 1933. They found a 5-year survival rate of 26 per cent in the 60–69-year age group, and a 12 per cent survival rate in the 70–88-year age group, yet concluded that there is no definite relationship between age and prognosis. Bloom's mean survival rate of 36 months agrees closely with that reported by other investigators. In his computations, however, patients dying of intercurrent disease were not excluded. It is therefore reasonable to assume that had there been such a correction, the 5-year survival in the elderly group would have increased considerably.

Correlation of Age and Survival Rates in a Personal Series of Cases: We believe that statistical studies of the results of different methods of treatment are misleading when they compare results in patients in all stages of the disease. Comparisons of results should be made between groups of cases in similar stages of advancement if they are to be valid. For this purpose a simple and accurate clinical classification of mammary carcinoma is required. The Columbia Clinical Classification meets these requirements, and has been used in the most comprehensive comparison of different methods of treatment for breast carcinoma yet attempted.[8]

Our personal series of 556 consecutive radical mastectomies for breast carcinoma leads itself to study of the question of the relationship of old age to prognosis. All the cases were selected for operation according to consistent criteria of operability, and a standardized radical mastectomy was performed in all. No operative deaths were recorded and no case was lost in follow up.

In studying this series of cases from the viewpoint of significance of age, it seemed desirable to exclude those patients dying of causes other than mammary carcinoma. Nineteen patients were excluded on these grounds during the first 5 years of follow up, and 14 additional patients during the

TABLE 2. *Ten-Year Results of Radical Mastectomy Personal Series, 1935–1952. (37 Patients Dying of Intercurrent Disease in Less Than 10 Years Omitted)*

Columbia Clinical Stage	Age Group	No. Patients	10-Year Survival No.	10-Year Survival %
	35–less	11	4	36.4
A	36–64	185	144	77.8
	65–over	39	25	64.1
	35–less	8	2	25.0
B	36–64	92	41	44.6
	65–over	17	8	47.1
	35–less	2	1	50.0
C	36–64	40	7	17.5
	65–over	9	2	22.2
	35–less	—	—	—
D	36–64	8	0	0.0
	65–over	2	2	100.0
Total		413	236	57.1

second 5-year follow-up period. All 33 of these patients died without known evidence of local recurrence or distant metastases. All the remaining cases were divided into three age groups, 35 years or under, 36 to 64 years, and 65 years or older.

The 5- and 10-year survival rates after radical mastectomy are presented in Tables 1 and 2. The number of patients 35 years old or younger in the different clinical stages is so small that the survival rates for these young patients have little significance. The tables show, however, that in Stage A there is no apparent difference in the results of treatment in the middle-aged patients as compared with the aged patients. In Stages B and C, on the other hand, the aged patients show the best survival rates. The number of patients in Stage D is too small to have any statistical meaning. Nevertheless it is interesting to note that the two Stage D patients who survived 10 years were both aged women.

The extent of axillary node involvement in this series of cases is presented in Table 3. The data demonstrate that although the old patients have a higher percentage of lymph node metastasis (46.7%) than the middle aged (40.4%) group of patients, this fact has not significantly altered the 5-year survival rate.

Correlation of Age and Time of Recurrence in a Personal Series of Cases: In a further analysis of our data, the patients who succumbed to their disease before the end of the 10-year period were studied. There were 413 patients operated upon between 1935 and 1952, and 67 were 65 years of age or older. Table 4 shows the average interval before local recurrence or distant metastases in the different age groups. There is an impressive difference in this interval in the older age group as compared with the two younger age groups. The first clinical evidence of recurrent disease appeared more than one year later in the older patients, a fact which demonstrates a lower degree of malignancy in the aged.

TABLE 3. *Axillary Involvement in Patients with Radical Mastectomy Who Were Followed for 5 Years After Operation. Personal Series, 1935–1955. (19 Patients Who Died of Intercurrent Disease in Less Than 5 Years Are Omitted)*

Age Group	No. Patients	% with Involved Axillary Nodes	5-Year Survival Rate
35–less	28	67.8	50.0%
36–64	417	40.4	75.3%
65–over	92	46.7	78.5%
Total	537	49.9	74.7%

Operability of Elderly Patients: The question of the ability of aged patients to withstand radical mastectomy deserves careful consideration in the light of modern surgical methods. There is a widely held impression that elderly patients will not tolerate radical surgery. In an earlier study [9] we made of 1,544 primary cases of breast carcinoma from Presbyterian Hospital (1915–1947), a total of 42 patients were not operated upon because it was thought they were poor surgical risks. Berg and Robbins [1] found at the Memorial Hospital that operation carried a definitely increased operative mortality (3.4%) in the older age group and advise the use of extended simple mastectomy.

Our personal series of 556 consecutive radical mastectomies included 92 patients 65 years of age or older. The operative procedure in 87 of these patients was our usual radical mastectomy with a skin graft. One of the best indications of the thoroughness of radical mastectomy is the time required to perform this operation. Table 5 shows the duration of operation in our 87 older patients as well as its duration in our personal series of cases as a whole. It will be seen that our operating time in the older patients was 45 minutes shorter. This was achieved by making a special effort to hasten the dissection without omitting any of its principal features.

TABLE 4. *Interval Before Recurrence in 413 Patients with a 10 Year Follow-up Personal Series, 1935–52 (Omitting 37 Patients Who Died of Intercurrent Disease in Less Than 10 Years)*

Columbia Clinical Stage	Age Group	Number Patients	Patients Who Succumbed to Ca. in 10 Years	
			No.	Average Interval in Months Before Rec.
	36–less	11	8	28
A	36–64	185	48	44
	65–more	39	17	51
	35–less	8	7	37
B	36–64	92	54	30
	65–more	17	10	50
	35–less	2	1	23
C	36–64	40	35	24
	65–more	9	7	26
	35–less	—	—	—
D	36–64	8	8	14
	65–more	2	—	—
Total	35–less	21	16	31
	36–64	325	145	32
	65–more	67	34	45
Total		413	195	

In three other aged patients, aged 65, 69 and 80, respectively, the breast was large and there was sufficient skin to perform an adequate excision and close the wound primarily. This shortened the operating time somewhat: it was 190, 180, and 255 minutes, respectively. None of these three patients developed local recurrence of her disease. In two other aged patients the extent of the operation was somewhat curtailed. The details of these cases are presented.

Case Reports

Case 1. (Unit History 643027), age 72. She had moderately severe hypertensive cardiovascular disease for 7 years and had taken digitalis intermittently. Her carcinoma was situated in the upper outer sector of her left breast. It was 4 cm. in diameter and was accompanied by marked skin retraction. There was a 1-cm. clinically involved axillary node.

It was decided to limit the operative attack somewhat because of her cardiovascular disease. Accordingly, the pectoralis major was not removed. The pectoralis minor was cut across to give access to the upper axilla. Twenty-one axillary nodes were removed: three from the central group of nodes contained metastases. The skin flaps were brought together without a graft. Operating time was 190 minutes.

The patient stood the operation well. She had no recurrence of her breast carcinoma but died of a cerebral hemorrhage 6 years and 2 months after her mastectomy.

Case 2. (Unit History 763478), age 89. She was, except for crippling arthritis, in comparatively good health. Her carcinoma was 5 cm. in diameter and was situated in the upper central portion of her left breast. There was a 1-cm. clinically involved axillary node.

Because of her advanced age a limited operation was done in which the pectoralis major was not removed. Only the lateral half of the axilla was dissected. Twenty-five nodes were removed. None contained metastases. The wound was closed without skin grafting. Operating time was 200 minutes.

She stood the operation well. There was never any recurrence of her carcinoma. She died of cardiovascular disease within one month of her 100th birthday, 11 years after her mastectomy.

Our experience has taught us that neither moderately advanced cardiovascular disease nor advanced age are presently contraindications to radical mastectomy. With expert anesthesia and careful pre- and postoperative care these patients tolerate operation well, provided that the dissection is performed gently and with exact hemostasis.

It may be wise to curtail the extent of the operation somewhat in exceptional cases, but even in these cases the operation must include careful removal of the entire breast and a dissection of the axilla.

There is no place, in our opinion, for simple mastectomy. If this is done, it must be supplemented by irradiation. It is more difficult for these decrepit and aged patients to get through protracted daily irradiation for 6 or 8 weeks than it is to have a skillfully performed radical mastectomy.

Elderly patients should be gotten out of bed earlier than younger patients. We try to get them up by their fourth to sixth postoperative day.

Patients who have had previous thrombophlebitis must be watched with special care for recurrence of the thrombophlebitis and for embolism. They probably should be given anticoagulation therapy prophylactically beginning on the second postoperative day.

Diabetes is common in these elderly patients with cardiovascular disease. Its management presents no special problem.

There were no operative deaths and no serious postoperative complications in the 92 patients of age 65 and over in our personal series of radical mastectomies. While good fortune has no doubt played a part in the record, we have made a great effort to care for our patients personally.

The 5- and 10-year survival rates in this group of aged patients, after elimination of patients dying of intercurrent disease, were 78.5 and 55.2 per cent, respectively. These results show what radical mastectomy can achieve in mammary carcinoma in advanced age.

TABLE 5. *Duration of Radical Mastectomy in 87 Patients Age 65 and Older Personal Series (1935–55)*

Minutes	No. Patients
100–200	2
200–300	53
300–400	3
400 and over	1

Average duration of operation in 87 patients 65 years and older—245 minutes.

Average duration of operation in 556 patients of all ages—330 minutes.

Summary

The question of the significance of advanced age in the prognosis of mammary carcinoma has been studied in a personal series of 556 cases. All the patients were classified preoperatively according to Columbia Clinical Classification and treated by standardized radical mastectomy. No case was lost in follow up.

The 5- and 10-year results show a better prognosis in older women (65 years of age and older) than in younger patients. The difference is more evident in relatively advanced but still operable cases.

Analysis of the patients who succumbed to the disease before the end of the 10-year period indicate a lesser degree of malignancy of mammary carcinoma in old age. The data show that the first evidence of persistent disease appeared more than 1 year later in the elderly group.

No operative deaths and no serious postoperative complications were recorded in this series of 92 patients of 65 years and over, indicating that advanced age by itself is not a contraindication for adequate surgery.

We believe that with careful pre- and postoperative care radical mastectomy is the treatment of choice for operable mammary carcinoma in the aged.

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Erratum

In the list of Books Received published in the December issue, p. 1016, the following correction is made:

Correctable Renal Hypertension. Winter, Chester C., Philadelphia, Lea & Febiger, 190 pages, 120 illustrations, 16 tables, $7.50.