Carcinoma of the Breast

Possible Significance of Menstrual Cycle in Results of Operation

FRANK R. RUFF, M.D., *Fresno*

SUMMARY

Among 55 patients upon whom mastectomy was done for cancer of the breast, survival without evidence of metastasis (after varying periods of follow-up) was significantly higher for those who were operated upon in the seven days preceding the beginning of menses than it was for those who underwent operation in any of the three other seven-day periods in the menstrual cycle. Moreover, in a comparison of results of operations done in each of the four seven-day periods, there was a graduating increase in mortality and metastasis from the first period (the seven days preceding menses) through the fourth period.

The results of the study of this small series are considered not conclusive but indicative of possible profit in studies of larger and better controlled series.

A COMMON experience in surgical treatment of cancer of the breast is that while operation in one case may be successful, the same procedure in another, identical by all conventional means of assay, may be a failure. One patient following the operation may live out a long life entirely free of the disease, while another of the same age with cancer of the same extent and at the same site, proven by biopsy to be of the same type and grade, and removed with the same skill, may die of the original lesion or of metastasis.

In the belief that an explanation might lie in some chemical, physical or hormonal factor which had not been properly considered, the author in 1945 turned to a consideration of the time of operation in relation to the menstrual cycle. Review of the literature and questioning of surgeons, internists and pathologists led to the conclusion that there is universal agreement that the best time to operate for removal of cancer of the breast is "just as soon as possible."

MATERIAL FOR STUDY

In the period 1945-48 the author, a radiologist working closely with surgeons and hence with opportunity to observe the results of operations. treated 154 patients following mastectomy for cancer of the breast. For purposes of study to ascertain what bearing the time of operation within the menstrual cycle might have upon prognosis, 99 of the 154 cases were excluded because the patients were past the physical menopause or because of incomplete records. In the remaining 55, the series upon which this report is made, there was positive diagnosis of cancer in all cases but neither the grade of malignancy nor the extent of the lesion was taken into account as this information was not uniformly available. The operations were done by a number of surgeons. As the series includes patients operated upon over a four-year span of time, the period of follow-up varies accordingly. Other data as to the ages of the patients, survival after operation and evidence of metastasis are shown in Table 1.

METHOD OF STUDY

For the purposes of the study, the menstrual cycle was divided into four seven-day periods. The seven days immediately preceding the beginning of menses was designated Period I, with Periods II, III and IV made up, respectively, of the first to the seventh day from the start of menses, the eighth to the fourteenth day and the fifteenth to the twenty-first day.

Review of hospital records disclosed that of the 55 patients, 15 were operated upon in Period I, 10 in Period II, 16 in Period III, and 14 in Period IV. Results following operations done in each of the four time brackets are shown in Table 2.

Thus it can be seen that in those cases in which the operation was done in Period I the results with regard to survival and absence of evidence of metastases were better, percentagewise, than the results

TABLE 1

Age Groups Years	No.	Per Cent	Alive	Per Cent	Dead	Per Cent	Total Metas.	Per Cent	Alive; No Evidence of of Metas.	Per Cent
20-30	4	7	3	75	1	25	4	100	0	0
30-40	18	33	12	67	6	33	13	72	5	28
40-50	33	60	22	66	11	33	16	48	17	52
Total	55	100	37	67	18	33	33	60	22	40

TABLE 2

Time of Operation	Number of Patients	Alive	Per Cent	Dead	Per Cent	Metas.	Per Cent	No Evidence of Metas.
1st period, 1 to 7 days before menses	15	13	87	2	13	4	26	74%
2nd period, first 7 days after beginning of menses	10	8	80	2	20	6	60	40%
3rd period, 7 to 14 days after beginning of menses	16	10	63	6	37	10	63	37%
4th period, 14 to 21 days after beginning of menses	14	5	36	9	64	12	86	14%
Total	55	36	65	19	35	32	58	42%

following operations done in any of the other three periods. Moreover, the disparity between results widened progressively from Period I through Period IV.

DISCUSSION

It is recognized that there are many factors not considered in this study which, if they were included, might considerably affect the comparisons made. The age of the patients, for instance, was not taken into account, although as is indicated in Table 1 there was pronounced difference in results as between the younger and older patients. And, as previously indicated, there may have been variations with regard to the grade of malignancy, the extent of the lesion and the surgical skill with which the operations were done. However, even if these inconstant factors were resolved, it is doubtful that the broad differences in results as between operations done in one period and those done in the others could have been accidental.

Because the series was small and the method of study not foreclosed to error, the results are not looked upon as conclusive that there is a "best" period in the menstrual cycle in which to perform mastectomy for cancer of the breast. However, as the results are believed to be at least indicative, they are offered in the hope that similar studies may be carried out by others who have access to records of larger series of cases and opportunity to eliminate inconstants that might dilute conclusions.

Fresno Community Hospital.