Conservative Treatment of Breast Cancer:
A Trial in Progress at the Cancer Institute of Milan

UMBERTO VERONESI, M.D.
Istituto Nazionale Tumori, Milan, Italy

In 1973, a clinical trial was started in patients with stage I breast cancer comparing conservative treatment consisting of partial mastectomy plus axillary dissection plus postoperative radiotherapy to the involved breast with conventional radical mastectomy. Patients with positive lymph nodes in the partial mastectomy group have been further randomized to receive either additional radiotherapy to the supraclavicular and internal mammary node areas or no additional radiotherapy. By June 1976, 302 patients had entered the trial. To date there are no significant differences between the conservative and radical surgical treatment groups in regard to local cancer recurrence, the incidence of distant metastases or the development of cancer in the contralateral breast, but it is too early to have obtained meaningful results.

In the last 10 years substantial modifications have been introduced in the treatment of breast cancer. Conventional radical mastectomy has been partly replaced by a variety of operations, either more conservative or more extensive, as a consequence of a better "staging" of the disease. Radiotherapy has been introduced as the main treatment in cancers of limited extent, and chemotherapy seems to play a role as an adjuvant after surgical treatment in cases with an elevated risk of local or distant recurrence. However, no agreement has been reached on the indications for various forms of conservative treatment and on the extent to which the breast may be preserved. In fact, conservative treatments include total mastectomy without dissection of axillary nodes (which may or may not be irradiated), modified radical mastectomy preserving the pectoralis muscles, lumpectomy followed by radical radiotherapy, and irradiation alone of the breast and regional lymph node areas. In our opinion the definition of conservative treatment should be applied only to treatments which "conserve" the breast, the other forms such as total mastectomy being defined only as "less mutilating" procedures when compared to Halsted radical mastectomy. Furthermore, we believe that surgical axillary dissection should always be performed in any type of treatment of breast cancer as an eventual stem in the staging procedure. In addition, we think that a careful preoperative exploration of both breasts by the most sophisticated techniques of mammography and xerography is necessary to identify multifocal areas of invasive carcinoma.

During the decade 1960-1970 we evaluated in a small number of patients who refused the radical mastectomy a more conservative procedure consisting of a resection of an entire quadrant of the breast plus axillary dissection and irradiation of the remaining breast tissue. The cosmetic results proved to be satisfactory and a protocol for a clinical trial comparing this procedure with the radical mastectomy was formulated in 1970. However, for various reasons the trial could not be implemented until 1973. The trial applies to patients classified as T1N0M0, with tumors of less than 2 cm in diameter. The resection of the mammary tissue comprises an entire quadrant of the breast together with the overlying skin and the corresponding portion of the fascial sheet of the pectoralis major muscle. Whenever possible, the axillary dissection is performed en-bloc and in continuity with the breast quadrantectomy, a procedure that is feasible when the tumor is located in the upper and/or outer quadrants of the breast. For tumors of the lower inner quadrants the axillary dissection is performed with a separate incision. Axillary dissection is intended to prevent recurrences due to occult lymph node metastases which account for about 25% of cases classified as T1N0. The presence or absence of axillary involvement also provides valuable information in determining prognosis and for planning future treatment. After surgery the patients receive 6000 rads of radiation to the residual breast tissue over 5 to 6 weeks, starting 15 days after

Reprint requests: Umberto Veronesi, M.D., Istituto Nazionale Tumori, Milano, Italy
Table 1. Different types of treatments in non-disseminated breast cancer

<table>
<thead>
<tr>
<th>TNM Category</th>
<th>Treatment</th>
</tr>
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<tbody>
<tr>
<td>T1 N0</td>
<td>Resection of the breast</td>
</tr>
<tr>
<td></td>
<td>Axillary dissection</td>
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<tr>
<td></td>
<td>Radiotherapy to the residual breast</td>
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<tr>
<td>T2 N0</td>
<td>Modified radical mastectomy</td>
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<tr>
<td>T3 N0</td>
<td>Radical mastectomy</td>
</tr>
<tr>
<td>T1-2-3 N1</td>
<td>Radical mastectomy</td>
</tr>
<tr>
<td></td>
<td>Chemotherapy plus radiotherapy</td>
</tr>
<tr>
<td>T3 N2</td>
<td>Radical mastectomy</td>
</tr>
<tr>
<td>T1-2-3 N1</td>
<td>Internal mammary dissection</td>
</tr>
<tr>
<td>N3 N0</td>
<td>Superradical mastectomy</td>
</tr>
<tr>
<td>T4b T4</td>
<td>Chemotherapy plus radiotherapy</td>
</tr>
</tbody>
</table>

= Trial in progress

Table 2. Treatment protocol of the clinical trial comparing partial breast resection with radical mastectomy in T1N0 cases (September 1973 to December 1975)

Radical mastectomy

Breast resection

Axillary dissection

Radiotherapy on the residual breast

N--

N+

No further treatment

Random

Radiotherapy to supraclavicular and internal mammary areas

Stratification = premenopause or postmenopause

Table 3. Treatment protocol comparing partial breast resection with radical mastectomy since January 1976

T1 N0 N10

Random

Radical mastectomy

Breast resection

Axillary dissection

Radiotherapy of residual breast tissue

N--

N+

No further treatment

Chemotherapy (CMF for 1 year)

operation. From 1973 to the end of 1975 patients with positive lymph nodes were further randomized, 50% receiving radiotherapy to supraclavicular and internal mammary nodes and 50% having no further treatment. At the beginning of 1976 the program was changed and all N+ cases are now submitted to adjuvant chemotherapy with CMF for 1 year.

The cosmetic results have been good in most cases. The psychological results also have been satisfactory in 85% of patients; however, in only half of them is this due to the cosmetic factor while the other half of the patients feel psychologically relieved because they believe that the conservative surgery is a sign of a less malignant disease.

We started this trial in September 1973 and by June 1976, 302 patients had entered the trial. One hundred forty-eight were treated with radical mastectomy and 154 received conservative surgery plus radiotherapy. Axillary metastases were found in 21% of the radical mastectomy and in 25% of the conservative surgery groups. It is too early to give any meaningful results at this time. Two local recurrences have occurred in each group. Four cases in the radical mastectomy group developed distant metastases. By the end of 1977 some 500 cases will be entered into this clinical trial. If, after an adequate period of follow-up, conservative treatment results in the same recurrence-free survival rate as does radical mastectomy, limited surgery will find an important place in breast cancer therapy.

Résumé

En 1973, nous avons entrepris, sur des malades atteintes de cancer mammaire au stade I, un essai clinique comparant la mastectomie radicale conventionnelle à la mastectomie partielle avec dissection axillaire et radiothérapie postopératoire sur le sein.