Nonmastectomy Therapy for Breast Cancer: Where Do We Go From Here?

In this issue of the Mayo Clinic Proceedings (pages 515 to 524), Pisansky and colleagues present an excellent summary of the rationale, supportive evidence, and technical means for performing nonmastectomy therapy (lumpectomy and breast irradiation) for breast cancer. In addition, they summarize 165 cases of breast cancer managed with nonmastectomy techniques during a 10-year period and report local recurrence and cosmesis outcomes that rival the best series previously reported in the literature. One could hardly quarrel with any opinions or interpretations of this accomplished clinical group. I would like to amplify on one aspect of nonmastectomy therapy that the Pisansky report does not address: the underutilization of this technique to treat primary breast cancer in the United States.

Limited Utilization.—Of note is the fact that an institution as large, well respected, and prestigious as the Mayo Clinic could accumulate only 165 cases of breast cancer treated with nonmastectomy techniques during a period of 10 years. Perhaps several factors contribute to this low number. Certainly the Mayo Clinic is a major referral center, and many patients most likely are counseled to have lumpectomy and irradiation. Most of these women return to their local health-care providers to have this procedure performed or to undergo the radiation component of their therapy. Undoubtedly, patients at the Mayo Clinic are given an even-handed and complete explanation of therapeutic alternatives based on an extremely thorough understanding of the issues involved in nonmastectomy treatment, as evidenced by the current report. In many regions of the United States, however, this impartial approach to breast cancer does not exist. During the past few years, five studies of the use of lumpectomy for treating stage I and II breast cancer have been published. These investigations indicate that approximately 35% of women with stage I breast cancer have breast-sparing treatment and 15% of women with stage II disease are similarly treated. Use of lumpectomy decreases with advancing age of the patient, increasing size of the tumor, and presence of involved lymph nodes, and it can vary threefold to fourfold among various geographic regions of the United States. These relatively low utilization rates exist despite the fact that numerous randomized trials have shown that nonmastectomy therapy is equivalent to mastectomy in every way except the need to undergo breast amputation.

Physician Bias.—The major reason for underutilization of breast-sparing therapy most likely relates to physician bias against this technique. In my own practice, I always precede a discussion of primary treatment alternatives with the question, “What have your physicians recommended about the treatment of your breast cancer?” I continue to be amazed at the large number of patients who tell me that treatment options have been discussed but that the referring physician has recommended a mastectomy because it is still the “best” therapy. In a recent survey of practicing surgeons in Colorado, only 44% of survey respondents stated that they believed that lumpectomy and irradiation were actually equivalent to mastectomy. Of the remainder, 34% believed that breast-sparing techniques were equivalent to mastectomy yet still attempted to influence their patients to have mastectomy, and 22% still believed that the two treatments were not equivalent and overtly recommended mastectomy. These types of attitudes help explain why only 28% of Colorado women with T1 breast cancer were treated with lumpectomy from 1986 through 1990. No doubt such attitudes persist throughout the United States, and physicians—especially those with extensive experience in the performance of mastectomy—remain reluctant to change their practice patterns.

Intraductal Involvement.—Some of the underutilization of lumpectomy represents a true misunderstanding or misinterpretation of the current literature on nonmastectomy therapy. For example, although some investigators have reported that an extensive intraductal component may contribute to a high rate of local failure, such a marker for local recurrence of breast cancer has not been found in all studies, nor has it been found in patients in whom reexcision has achieved surgical margins free of cancer. Nonetheless, patients are frequently referred to me and my colleagues for a second opinion because physicians believe that “intraductal cancer” on the pathology report renders such patients unsuitable for lumpectomy and irradiation—a tragic overinterpretation of this predictive factor. The presence of intraductal carcinoma should alert physicians to pay close attention to surgical margins but is not an absolute or even a relative contraindication to the use of breast-sparing techniques.

Central Lesion.—Physicians still cite the presence of a “central lesion” as a reason not to use breast-sparing therapy. Studies, however, have substantiated that central lesions can be treated with lumpectomy. Even if the nipple-areolar complex must be excised, this procedure is obviously less cosmetically distorting than removal of the entire breast. Many physicians inappropriately believe that the presence of cancer in lymph nodes renders a woman unsuitable for breast-sparing therapy. For example, in a report by Lazovich and associates, women with T1, N1
cancer had a lumpectomy utilization rate only 60% of that in patients with T1, N0 cancer after adjustment for age and year of diagnosis. Paradoxically, the greater the risk of systemic disease, the more extensive the local surgical procedure some physicians choose to use. Not only does this approach seem counterintuitive, but no data support this bias. On the contrary, women with involved lymph nodes who were given chemotherapy in the National Surgical Adjuvant Breast Project B-06 trial actually had a lower rate of local failure in the breast after lumpectomy and irradiation than did patients with no involvement of nodes who were treated without systemic chemotherapy.13

**Age of Patient.**—Clearly, a strong age bias exists against the use of lumpectomy—that is, older women are far less likely to receive such treatment than younger women. This age bias represents, in part, physician attitude and has no solid foundation in the scientific literature. Women of all ages with breast cancer are candidates for nonmastectomy treatment. As women advance well into their 70s and beyond, irradiation is occasionally withheld, and patients are treated with lumpectomy and, frequently, tamoxifen citrate.14 The concept that a mastectomy is more appropriate for older women than their younger counterparts should be abandoned.

**Fear of Irradiation.**—The most common explanation from patients about why they “selected” mastectomy therapy relates to a “fear of radiation therapy.”10 Many of these patients know a friend or a loved one who received radiation therapy many years ago when instrumentation and techniques were less refined, or they have generalized the toxic effects of irradiation associated with aggressive treatment to the abdomen and pelvis or the head and neck region. Often, physicians have had similar experiences and reinforce these attitudes in their patients. The reality is that current radiation treatment for breast cancer causes few symptoms, and most patients will be able to manage a full schedule of normal activities during breast radiation therapy.

**Recommendations.**—A common principle of cancer therapy is that techniques that remove less tissue and produce less functional or cosmetic alteration are preferred if they can be shown to yield results that are equal to those from more radical surgical operations. For example, although amputation of an extremity in patients with a soft tissue sarcoma is associated with outstanding cure rates, the ability of wide local excision and irradiation to produce similar cure rates in this disease have made limb-sparing therapy the preferred management in such patients.15 In breast cancer therapy, when removal of the pectoralis major muscle was shown to be unnecessary, radical mastectomy was replaced by modified radical mastectomy in virtually all patients.16 It has now been incontrovertibly shown, as emphasized by Pisansky and coworkers in their current study, that removal of the entire breast is unnecessary to achieve a high cure rate in the treatment of primary breast cancer. It is time for physicians who are responsible for the care of women with primary localized breast cancer to embrace these carefully derived clinical research findings and to make breast-sparing therapy widely available to their patients.

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**REFERENCES**