

A surgical subculture

The use of mastectomy to treat breast cancer

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Abstract

THE RESULTS OF THE STUDY by Dr. Vivek Goel and associates (see page 25 of this issue) are similar to those of studies conducted in the United States that have found that the use of breast-conserving surgery to treat breast cancer is inconsistent. The current understanding of the biological basis of the treatment of breast cancer stresses the limited role of extensive surgery and the value of radiation therapy and other forms of adjuvant treatment in reducing the rates of local recurrence. During the Montreal Forum on Breast Cancer, held in November 1992, participants expressed a wish for consistency in medical practice in this area. However, the goal of consistency may not be served by guidelines that present only a summary of scientific findings. Guidelines must present clear recommendations, and the diffusion of these recommendations into general medical practice must involve regional medical groups and their opinion leaders.

Résumé

LES RÉSULTATS DE L'ÉTUDE réalisée par le Dr Vivek Goel et ses collaborateurs (voir page 25 du présent numéro) sont semblables à ceux d'études réalisées aux États-Unis et à la suite desquelles on a conclu que le recours au traitement conservateur du cancer du sein par la chirurgie n'est pas uniforme. Les connaissances actuelles du fondement biologique du traitement du cancer du sein mettent l'accent sur le rôle limité de l'intervention chirurgicale majeure et sur la valeur de la radiothérapie et d'autres traitements adjuvants dans la réduction des taux de rechute locale. Au cours du Forum de Montréal sur le cancer du sein qui s'est tenu en novembre 1992, des participants ont dit souhaiter qu'on uniformise la pratique médicale dans ce domaine. Il se peut toutefois que des guides qui ne présentent qu'un résumé de constatations scientifiques ne servent pas le but de l'uniformité. Les guides doivent présenter des recommandations claires et la diffusion de ces recommandations dans la pratique générale de la médecine doit passer par les groupes médicaux régionaux et leurs meneurs d'opinion.

Controversies still exist in the treatment of breast cancer. However, the extent of surgical treatment should no longer be controversial. In an article in this issue (see page 25), Dr. Vivek Goel and associates compare patterns of care for patients with node-negative breast cancer in two Canadian provinces in 1991, and describe considerable differences in initial treatment. In British Columbia 44% of women with node-negative breast cancer retained their breast after surgery, as did 68% of women undergoing surgery in Ontario. However, far more women in British Columbia than in Ontario had radiation therapy after their breast-conserving surgery. The authors explore to what extent the decision to treat node-negative breast cancer through mastectomy or breast-conserving surgery followed by radiation therapy was influenced by the patient's age, residence, income and distance from a radiation-therapy facility. The properties of the tumour itself are compared as well. The authors also record the surgeon's year of graduation and academic affiliation as well as whether the hospital where surgery was performed was a community or a teaching hospital. They find some interesting differences, but these differences cannot explain the large varia-



Editorial

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tion between the two provinces in rates of breast-conserving surgery.

This observation is not new. Several studies cited by the authors have shown varying rates of breast-conserving surgery in the United States, where this procedure is practised less frequently than in Canada. Johantgen and associates,¹ in a national sample drawn from more than 500 US hospitals and 87 449 discharges, showed that the percentage of patients with breast cancer who had breast-

conserving surgery was 9.9% in 1981 and 14.5% in 1987. Lazowich and collaborators² used data from a population-based cancer registry to show that the frequency of breast-conserving surgery in the Seattle-Puget Sound, Wash., region peaked in

1985; in that year, 46.3% of patients with stage I breast cancer and 30.1% of those with stage II cancer were given breast-conserving surgery. This peak was, however, followed by a return to rates similar to those before 1985 for surgery for women with stage II cancer, and by a more moderate decline for surgery for women with stage I breast cancer. Margolese³ noted in 1992 that an analysis of recent accrual patterns for adjuvant-therapy protocols under the National Surgical Adjuvant Breast and Bowel Project showed that approximately two-thirds of patients from Canadian centres were treated by lumpectomy, whereas three-quarters of the women referred from US centres were treated by mastectomy.

As Goel and associates point out, breast-conserving surgery and mastectomy are equivalent in terms of survival after a diagnosis of stage I or stage II breast cancer. Radiation therapy after surgery serves to prevent an otherwise high rate of recurrence in the breast (53% at 10 years).⁴ When radiation therapy is given after breast-conserving surgery, survival curves and disease-free survival curves are the same as those after mastectomy.

Survival after a diagnosis of breast cancer is determined by whether cancer has spread to sites distant from the tumour at the time of surgery. According to our present understanding of the biologic aspects of this disease, the extent of surgery for the primary tumour, beyond its complete removal, is irrelevant. The size of the free margin around the tumour and the use of postsurgical radiation therapy to the whole breast influence the rate of recurrence in the breast only, not the survival rate. We have also learned that resecting lymph nodes from the axilla is largely of diagnostic and prognostic value. Radiation therapy to lymph nodes is now prescribed only when the extent of involvement of the axillary lymph nodes predicts a

high risk of regrowth of the tumour in these lymph nodes. As Fisher and Ore⁵ stated in 1993, "Physicians currently influenced by the Halstedian paradigm are being governed by the science of a previous era."

We can therefore conclude that there are few medical reasons for removing the whole breast in stage I and II breast cancer. Removal of the breast is limited to situations in which there are several tumours in one breast or the tumour is so large that removing the necessary tissue

would create an unacceptable cosmetic result. Since radiation therapy is required after breast-conserving surgery to equalize the risk of recurrence in the breast to the risk of local recurrence after mastectomy, patients for whom radiation therapy is contraindicated

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or who choose not to have radiation therapy may prefer to have a mastectomy. Although research is continuing to determine whether radiation therapy may be safely omitted after removal of very small tumours, so far researchers have found no group of patients in whom surgical removal without subsequent radiation treatment results in acceptable local recurrence rates. (It is important to note that adjuvant treatment with chemotherapy or tamoxifen also contributes to lowering the rate of local recurrence.)

A report entitled *Breast Cancer: Unanswered Questions* issued in 1992 by the House of Commons Standing Committee on Health highlighted, among other things, the need for greater consistency in service delivery and more consensus on the issues.⁶ In the report on the National Forum on Breast Cancer, held in Montreal in November 1992, one of the guiding principles, viewed as fundamentally important to all future study and action in the field of breast cancer, was consistency in clinical practice and guideline development.⁶ Participants saw this as a matter of considerable concern.

Goel and associates' study clearly indicates a lack of consistency in the extent of surgery and radiation therapy for patients with stage I and stage II breast cancer, who make up most of the patients with breast cancer in Canada. Not all provinces have practice guidelines; at the time of the study, British Columbia had guidelines, but Ontario did not. National Canadian guidelines are now being prepared.

An important issue is how well guidelines will create consistency in the initial treatment of breast cancer. The experience is disappointing. In 1977, the US National Institutes of Health set up their Consensus Development Program. In a study to determine whether quality of care improved in regard to 12 recommendations issued by four



consensus panels before 1987, including recommendations concerning surgical management of breast cancer, Kosecoff and colleagues⁷ found that the recommendations had mainly failed to stimulate change in physician practice. In a critical appraisal of the “outcomes movement” and the feasibility of guidelines, Epstein⁸ found that, in many instances, guidelines are unlikely to produce more rational or efficient care. Even legislation requiring the disclosure of options in the treatment of breast cancer appeared to have only a slight and transient effect on the rate of use of breast-conserving surgery in Detroit, Atlanta, New Mexico and Hawaii.⁹

In a lucid analysis of the diffusion of new medical technologies and procedures to local physician practice, Greer¹⁰ described the complicated aspects of behavioural change in physicians. Her analysis was based on personal interviews with 290 physicians in the United States, Canada and the United Kingdom. She described physicians as participants in local subcultures who were, therefore, subject to norms and group dynamics. She found the problem of uncertainty at the foundation of the culture of medicine and cited the three mechanisms identified by Katz that medical students learn to use in coping with uncertainty: coherence (ensuring that treatments “make sense”), orthodoxy (choosing and adhering to a position held by an admired teacher or role model) and specialization (narrowing the field of vision). She discerned a startling, universal scepticism concerning the usefulness of the scientific literature to practising physicians. Greer’s analysis goes far in explaining the puzzling and dismaying finding that medical practice fails to incorporate new medical knowledge consistently. Her analysis also points the way to improving this process by building structures of local participation, with the use of opinion leaders to bring together research and practice.

When national Canadian guidelines are introduced, we can only hope that they will be more than summaries of scientific evidence. The scientific evidence, taken at face value, suggests that breast-conserving treatment with follow-up radiation therapy is equivalent to mastectomy, yielding similar survival and disease-free survival rates. The literature on psychological adjustment after breast-conserving surgery and mastectomy also suggests that there are important differences in adjustment after the

two forms of surgery and favours conservation of the breast,¹¹ although it also shows, not surprisingly, that breast preservation does not categorically eliminate all psychological morbidity.

To bring about more consistent medical practice, we may have to say that, for most patients with breast cancer, mastectomy is an outdated treatment and breast conservation, with the help of radiation therapy, is usually not only feasible but also safe.

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