Practice Patterns of Sentinel Node Biopsy at Five Comprehensive Cancer Centers

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Data from six prospective randomized trials are available in which axillary node dissection (AND) was compared with observation as initial treatment for invasive breast cancer. It is noteworthy that all of these trials reported an observed survival that was higher in the group that initially had AND. The overall survival increase reported in the AND group ranged from 4% to 18% (1-6). Analysis of the combined data from all six trials, which included more than 2400 cases, resulted in a statistically significant survival advantage associated with AND of 5.4% (95% confidence interval [CI] = 2.7% to 8.0%) (7). These randomized trials of AND versus observation may be considered out-of-date; however, the data from these trials have not been challenged by modern, prospective randomized clinical trials with sufficient power to detect survival differences of this relatively modest magnitude.

Analysis of trends of modern practice patterns for the surgical management of breast cancer patients, which is the subject of the Edge et al. (8) article in this issue of the Journal, has been performed by others on large populations of breast cancer patients in which long-term outcomes are available. For example, a recent analysis by Bland et al. (9) from the National Cancer Data Base includes data contributed from 1450 hospitals. Bland et al. observed that there was a trend to increasingly omit AND. Interestingly, AND was more likely to be omitted in stage I patients, patients with lower grade primary lesions, and patients with lower incomes. The 10-year relative survival for stage I breast cancer patients in whom AND was omitted.

The survey by Edge et al. (8) of practice patterns at five comprehensive cancer centers indicates that sentinel node biopsy (SNB) alone and omission of AND was more frequently performed in patients with earlier stage breast cancer than in patients with later stage disease. Focusing on early-stage breast cancer, White et al. (10) analyzed the Rhode Island State Tumor Registry of more than 1000 patients with T1a or T1b cancers. Omission of AND from the treatment of those patients was associated with a statistically significant reduction in overall survival. Because such reviews are not controlled for a variety of potential biases, they do not necessarily provide definitive information regarding long-term outcomes. However, such reviews do indicate where further studies should be performed. Collectively, the older randomized trials of observation versus AND and modern reviews of large datasets do provide boundaries for the range of survival differences that might be expected between AND and lesser nodal surgery. This information helps researchers design clinical trials comparing AND with sentinel node surgery. In addition, these datasets provide a platform of information that might be provided to patients considering SNB and omission of AND outside clinical trials.

Although there are considerable data on the long-term impact of AND, there are no such long-term data comparing SNB with standard AND. Prospective randomized clinical trials are underway to acquire this important information. It appears that the goal of the article by Edge et al. is that “widespread use of SNB outside of the clinical trial setting...may affect accrual and generalizability of ongoing clinical trials of SNB.” We question this conclusion regarding the possible impact of the use of SNB on accrual. The studies for which Edge et al. are concerned about the use of SNB having a possible negative impact have either already completed accrual (i.e., the American College of Surgeons Oncology Group [ACOSOG] Z0010 trial) or are expected to complete accrual within the next few months (i.e., the National Surgical Adjuvant Breast and Bowel Project [NSABP] B-32 trial). In addition, we believe that the results of ongoing clinical trials of SNB will be generalizable, because the patients on these trials have been entered in a well-stratified manner and represent a broad spectrum of clinical practices from across North America.

A striking aspect of the study by Edge et al. (8) is the rate of entry of patients onto SNB clinical trials performed by the five comprehensive cancer centers described in their article. Of more than 3000 patients, less than 0.02% (48/3003) of patients were entered onto an SNB protocol and no patients were entered onto randomized SNB trials. This rate of entry of patients onto SNB trials stands in contrast to 129 other institutions participating in the ACOSOG sentinel node studies and the 227 surgeons at 75 additional institutions entering patients onto the NSABP B-32 trial. The National Initiative on Cancer Care Quality was developed to respond to concerns by the Institute of Medicine about the quality of cancer care in the United States. One measure of that quality is the rate at which clinical trials are offered to patients. It is difficult to imagine that, of the 3000 patients treated at the five comprehensive cancer centers in the Edge et al. article, none were interested in participating in SNB trials. Analysis of this issue has been recently performed (11) in regard to SNB and highlights the concerns that women, as opposed to their surgeons, have regarding the issue of morbidity versus even a small possible reduction in mortality. Certainly, these centers have a broad portfolio of innovative clinical trials to...
offer patients, and profoundly important research emerges from all of them. However, Edge et al., in their article, are trying to generalize from the routine practice patterns of five selected cancer centers to the rest of the country. The strength of that connection may be diminished by the low accrual of patients to surgical studies at the five cancer centers compared with the broad availability of surgical trials that have been offered to breast cancer patients at more than 350 institutions.

It is also unclear to what extent the rate of introduction of SNB procedures detailed in the Edge et al. article might differ from that at institutions that chose to enter patients onto SNB studies. It is likely that the rate of introduction and the percentage of patients receiving SNB are the same, if not higher, at many centers participating in SNB studies as they are at the five cancer centers participating in the Edge et al. study, because centers that participated in SNB studies followed a specific study start date, used study-specific standardized techniques and, as demonstrated by rapid accrual, were clearly able to integrate SNB into their practice. This issue is an important one because the Edge et al. study was designed to generalize the activity of SNB use at select cancer centers to the rest of the country.

In reviewing an article on standards of care, it is also reasonable to discuss how standard and how routine the care was. It appears that there was considerable heterogeneity of the types of surgical procedures offered to patients among the five comprehensive centers in the Edge et al. article. For example, the article says, “Patterns of axillary surgery varied substantially by definitive surgery type.” Even during the last 6 months of the study period, the “mature phase,” the rate of performing only SNB varied by more than 200%, depending on center location. The rate of using SNB plus AND varied even more between centers, from a low of 9% to a high of 73%. It is, of course, understandable that rates of implementation of a new procedure will result in variability in practice patterns. However, the lack of homogeneity of performance rates of various surgical procedures, even after a number of years, highlights the lack of clear data to guide therapeutic choices and weakens the argument for generalizing the events occurring at the selected five comprehensive cancer centers in the Edge et al. article to the rest of the country.

REFERENCES