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Editorial

How Does It Feel? Sentinel Node Biopsy Is Better

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For nearly a century, axillary lymph node dissection (ALND) was part of the standard operation for most women undergoing surgical staging and treatment of breast cancer. This began to change precipitously after the report in 1998 by Krag et al.[1] demonstrating that sentinel lymph node biopsy (SNB) for pathologically staging clinically node-negative breast cancer was feasible and accurate. After dozens of subsequent studies within several years, a paradigm shift in surgery has occurred such that by a mere 7 years after the initial Krag et al. report, an American Society of Clinical Oncology Expert Panel concluded that SNB is an appropriate initial alternative to routine staging ALND for patients with early-stage breast cancer with clinically disease-negative axillary nodes.[2] Another example of such a dramatic shift in the surgical approach to one of the most common human malignancies would be hard to find. In the basis of Surveillance, Epidemiology, and End Results program registry data, breast cancer is newly diagnosed in >200,000 women in the United States annually, and with the success of early detection programs that use mammography along with clinical and self-breast examination, >60% are diagnosed while the cancer is still confined to the breast.[3] Conservatively, then, >120,000 women a year in the United States alone can be spared the unnecessary morbidity of an ALND by undergoing an SNB that proves their breast cancer is a node-negative stage.

But what exactly is that "unnecessary morbidity" that an ALND engenders, and that an SNB prevents? Any surgeon who performs SNB for breast cancer and compares it to the notion of a standard ALND would anecdotally conclude that the SNB must be "better": the incision is certainly smaller; the amount of tissue removed is less; those pesky intercostal brachial nerves, which are routinely sacrificed in ALND, are usually not even seen in SNB; the significant retraction of the pectoralis major muscle required for proper visualization of axillary levels II and III in ALND is unnecessary in SNB; there is no need for suction drain placement after SNB; and most surgeons would be hard-pressed to think of a patient who underwent SNB with a reasonable harvest of nodes (four nodes or fewer) who went on to develop clinically apparent upper extremity lymphedema—although most of us know of many patients who underwent ALND who still must deal with the ravages of that dreaded complication.

The amazing thing is, despite multiple small or noncomparative studies of short follow-up (≤12 months), the actual objective and definable long-term (5 years) comparison of the morbidity of SNB versus ALND has never been published, which is no surprise considering that SNB for breast cancer has not been commonly available for more than 5 years. This is what makes the article by Baron et al.[4] in this issue of *Annals of Surgical Oncology* such a seminal report, and the new standard by which we can objectively understand the short- and longer-term physical, psychological, and quality-of-life (QOL) aspects to a procedure now performed >100,000 times a year in the United States alone. By using a variety of vali-

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dated objective scoring tools (the highly detailed Breast Sensation Assessment Scale, a QOL tool; and Likert-type scales), the authors completed interval and 5-year follow-up assessments on 187 patients, of whom 133 underwent SNB alone and 54 underwent completion ALND. They not only assessed whether a ''bad'' sensation was present or not (prevalence), but also whether this bad sensation bothered the patient (severity and distress).

As one might expect, there is a significantly higher prevalence of some sensations and the distress that some sensations cause in the immediate postoperative period (3–15 days after surgery) after ALND compared with SNB. Interestingly however, 5 years after surgery, there was no difference in distress for any of the 18 sensation categories in patients undergoing SNB versus ALND. Another interesting finding was that even though these sensations did not ''bother'' them, many patients still reported having the sensations after SNB 5 years later. Finally, the QOL data showed that even in women who experienced sensations 5 years after either surgery, it did not negatively affect their QOL. For the 30% or so of women who had at least one QOL issue 5 years later, most are related to the cancer itself or to their personal body image, not the presence or absence of some nondistressing sensations after axillary staging surgery.

What can we conclude from this important study? First of all, as most of us had suspected and as other data have shown, in the postoperative and short-term periods (≤12 months), SNB causes less discomfort and distress than ALND. This alone is cause enough to be satisfied with SNB staging for breast cancer because it also is at least as accurate as standard ALND—and probably even more so when one considers that we are performing more detailed analysis on the few sentinel nodes (serial sections; immunohistochemical stains) than we ever did or could on the one or two dozen nodes removed in a standard ALND.

There are very few surgical developments in cancer treatment that are both more accurate and less painful, but SNB for breast cancer is one of them. We can conclude that we should not be telling our patients, or ourselves, that SNB causes less distress to them in the long term, or that their QOL will be better in the long term thanks to the important development of SNB, because that is not defensible on the basis of the available data. For our patients, their QOL centers on the treatment teams' ability to eradicate their cancer, and to reassure them as we reasonably can that it is so, while preserving their personal body image in a way that has meaning to them. Removing 2 instead of 22 lymph nodes is not going to accomplish that, but thanks to the work of Baron et al., we can at least assure our patients that it will initially be a less painful journey.

REFERENCES

1. Krag D, Weaver D, Ashikaga T, et al. The sentinel node in breast cancer: a multicenter validation study. *N Engl J Med* 1998; 339:941–6.
2. Lyman GH, Giuliano AE, Somerfield MR, et al. American Society of Clinical Oncology guideline recommendations for sentinel lymph node biopsy in early-stage breast cancer. *J Clin Oncol* 2005; 23:7703–20.
3. Jemal A, Siegel R, Ward E, et al. Cancer statistics 2006. *CA Cancer J Clin* 2006; 56:106–130.
4. Baron RH, Fey JV, Borgen PI, Stempel MM, Hardick KR, Van Zee KJ. Eighteen sensations after breast cancer surgery: a 5-year comparison of sentinel lymph node biopsy and axillary lymph node dissection. *Ann Surg Oncol* (in press).