

CONTENTS

Surgery & Radiation: New Options, New Questions

BY KATY HUMAN

There was something in her sentinel lymph node, doctors told Sandra Fish a few days after her lumpectomy in December 2003. The node looked clear during surgery, she says, but further testing found a shadow of cancer.

“They called it a trace, a microscopic trace,” says Fish. Did that mean a greater risk of her cancer spreading? Did it suggest more aggressive treatment, or further surgical exploration of lymph nodes, which might create uncomfortable side effects?

For early-stage breast cancer, it’s not just chemotherapy treatments that are the subject of debate. Researchers are also struggling to decipher the cryptic information stored in sentinel lymph nodes, how to advise patients on surgical options, and the best techniques for delivering radiation therapy.

“We have significantly more data to sift through to try to give our patients the best advice,” says Patrick Moran, MD, an oncologist with the Rocky Mountain Cancer Center and one of Fish’s doctors.

Lymph Nodes

Today, many clinicians rely on information from one or two sentinel lymph nodes—the ones most intimately connected with the breast— identified and removed during surgery and dissected for evidence that cancerous cells have moved beyond the breast. Increasingly sophisticated laboratory tests can find faint evidence of cancer that might not have been caught a decade ago—a fact that has put clinicians in a quandary since prospective trials have yet to show if those cells, termed “micrometastases,” pose any risk.

Certain tests to more easily detect only a few cancer cells in sentinel lymph node biopsy specimens are not yet used for that very reason, says Anthony Elias, MD, an oncology researcher at the University of Colorado. “It’s really uncertain that it shows anything clinically relevant, yet it may push treatment, push more chemotherapy than is necessarily warranted.”

Fish decided against additional therapy. One oncologist said “it would be overkill” to add more chemotherapy because of a microscopic trace, says Fish, who is cancer-free today.

Surgery

Last year, University of Minnesota researchers reported that many more patients with unilateral breast cancer were seeking double mastectomies despite no clinical evidence that the preventive approach of removing the unaffected breast increases survival, given the existing breast cancer diagnosis and overall low risk of death due to second primary tumors. The rate of contralateral surgery for unilateral cancer increased from 4.2 percent in 1998 to 11 percent in 2003.

The study generated a flurry of debate. In a letter published this year in the *Journal of Clinical Oncology*, one Greek team called for oncologists to rethink the practice of “radical surgery,” especially before offering genetic testing and counseling. In his practice, Moran says, most of the patients opting for double mastectomies carry the BRCA1 or 2 gene, which both carry an increased susceptibility for breast and ovarian cancers.

Bilateral mastectomy does, however, reduce a woman’s chances of recurrence, and the Minnesota authors countered that there are many circumstances in which contralateral surgery is, in fact, a rational choice.

Both sets of researchers called for clinical trials to better evaluate the effectiveness of contralateral surgery on preventing cancer recurrence, especially in high-risk patients. (For more on prophylactic mastectomy, see “Facing a Legacy”)

Radiation

In the field of radiation therapy, two trends have created recent controversy: a move toward hypofractionated radiation, which delivers a higher dose in less time, and the advent of partial breast irradiation as opposed to the whole-breast convention. Both techniques offer the convenience of a shorter treatment time, which is especially appealing to patients who live far from treatment centers, making it a hardship to come in five days a week for five weeks or more.

Canadian researchers reported at the San Antonio Breast Cancer Symposium last year that after 12 years of follow-up, patients who received hypofractionated radiation (about three weeks) or a conventional protocol (about five weeks) had nearly identical survival and recurrence rates, and similar rates of side effects.

Longer follow-up is needed to reveal any heart effects that may appear. Experts suggest the shorter schedule be offered only to a select group of patients—women with low-grade tumors who have small- or medium-sized breasts, those not receiving chemotherapy (the hypofractionated schedule hasn’t been well studied in combination with chemotherapy), and women with cancer in the right breast (the left breast is closer to the heart).

The other patient-friendly radiation approach—partial breast irradiation, or PBI, after lumpectomy—is a technique that makes sense, Elias says.

“The concept is obvious,” he says. “Clearly, the likelihood of having local

recurrence in the region of the breast with the tumor is the highest, and, therefore, why treat the whole breast? We just don't have the long-term data yet, although early results look quite good for low-grade, non-aggressive tumors.”

PBI can be delivered in three ways, and all three are included in a National Cancer Institute study. Two of the methods involve brachytherapy, where radioactive pellets are dropped briefly into tubes inserted into the tumor site. The third technique, three-dimensional conformal external beam radiation, targets the tumor site and a small area of surrounding tissue. Generally, PBI takes a few days to two weeks.

Elias says he and his colleagues are already using PBI for patients with low-risk cancer who live far from treatment centers. For most patients, however, he says he sticks with convention out of caution.