

October 13, 2008

The Doctor Is In: Radiation oncologists offer new approaches to treating breast cancer

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Research breakthroughs in the field of radiation oncology are improving medical treatment for breast cancer, a disease that will strike an estimated 180,000 women and almost 2,000 men in the United States this year.

Radiation oncologists —cancer doctors who also oversee the care of patients undergoing radiation treatment —are increasingly able to diagnose breast cancer in its earliest stages and to offer new radiation regimens that may help women forgo mastectomies.

While they are not advised for all women, magnetic resonance imaging scans are proving to be an effective diagnostic tool that enables physicians to pick up the very early signs of breast cancer when they are used in conjunction with mammograms. Currently, this use of MRIs is recommended only for women with a strong family history of breast or ovarian cancer, and for those who carry a genetic mutation known as BRCA1 or BRCA2, or who have already been diagnosed with the disease.

In terms of new treatment regimens, accelerated partial breast irradiation is showing promise in clinical trials, though it is still considered experimental. With this approach, radiation is delivered to a specific target area rather than the whole breast. This shortened schedule of treatment, however, is appropriate only for women with early-stage cancers, in which tumors have been removed by lumpectomy and the cancer has not spread to the lymph nodes.

In general, breast cancer patients undergo radiation treatments after a lumpectomy in which the malignant tumor and a small amount of breast tissue surrounding it are removed, or sometimes after mastectomy (surgical removal of the whole breast). Unlike other whole-body cancer treatments, such as chemotherapy or hormonal therapy, radiation is a localized therapy confined to one part of the anatomy. To treat breast cancer, patients are positioned in a CT scanner to map out the best angles for protecting the lungs and heart from radiation; then patients are exposed to a beam for one to two minutes per session.

Typically, breast cancer patients have been treated five days a week for five to seven weeks. Recently, however, Canadian research shows that three weeks of radiation treatment may be just as effective.

While not every breast cancer patient may be eligible for some of the new treatments, all women can benefit from breakthroughs in mammography technology. Today's digital mammograms and computer-aided diagnostic capabilities enable radiologists to pinpoint the areas of the breast needing surgical biopsy. Further, software used with digital mammograms makes it easier to identify subtle changes in breast tissue when a patient's mammograms are compared year to year.