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Breast MRI scan could determine need for radiation therapy


SEATTLE -- For women whose breast cancer has spread to their lymph nodes, a magnetic resonance imaging (MRI) scan could replace exploratory surgery as the method for determining whether those women need radiation therapy to treat their disease, according to a study to be presented during the annual meeting of the American Society for Therapeutic Radiology and Oncology (ASTRO) which opens today in Boston.

In a retrospective study of 167 patients who underwent radiation therapy for invasive breast cancer after surgical staging of their tumors, physician researchers at the Seattle Cancer Care Alliance and University of Washington Medical Center found that the tumors' physiological information shown on MRI scans correlated with surgically based findings of cancer having spread to lymph nodes. This suggests that breast MRI could help determine if women scheduled to undergo surgery will later need radiation therapy and how much.

The findings are significant because the standard of care for women with breast cancer has evolved during the past five years. In the past, decisions regarding radiation therapy were made after surgery and before chemotherapy, according to lead author Christopher Loiselle, M.D., a resident in the Department of Radiation Oncology at UW Medical Center. Today, increasing numbers of women may be treated with chemotherapy before surgery.

"When you give chemotherapy first, and then perform the surgery to remove the cancer and sample the lymph nodes, you reduce your ability to know whether there was cancer in the axillary (underarm) lymph nodes before the patient was treated with chemotherapy," Loiselle said. "This raises the question: is there another way to stage those lymph nodes? Our study showed that tumor characteristics as seen on an MRI scan may be the answer."

The ultimate benefit is that some women can be spared radiation therapy, especially those with smaller tumors and tumors that have not spread to the lymph nodes, he said..



A contrast dye used routinely in MRI scans not only highlights the size and location of the tumor but also details the blood vessels feeding the tumor. The kinetics or activity of the contrast dye in the tumor provided some key parameters for comparing MRI to traditional surgical tumor staging, he said.

"MRI is evolving rapidly as a diagnostic tool for breast cancer, particularly among women with high risk for the disease, because not only does it give us traditional anatomic information about tumors but information about the biology of the tumor as well," Loiselle said.

Prospective studies will need to be done to confirm the value of MRI scans in staging tumors for radiation therapy, he said.

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About Seattle Cancer Care Alliance

Seattle Cancer Care Alliance, established in 1998, unites the adult and pediatric cancer-care services of Fred Hutchinson Cancer Research Center, UW Medicine and Children's Hospital and Regional Medical Center. A major focus of SCCA is to speed the transfer of new diagnostic and treatment techniques from the research setting to the patient bedside while providing premier, patient-focused cancer care. Patients who come to SCCA receive the latest research-based cancer therapies as well as cutting-edge treatments for a number of non-malignant diseases under development by its partner organizations. SCCA has three clinical-care sites: an outpatient clinic on the Fred Hutchinson campus, a pediatric-inpatient unit at Children's and an adult-inpatient unit at UW Medical Center. For more information about SCCA, visit www.seattlecca.org.
