Breast MRI may lead to overdiagnosis for older women

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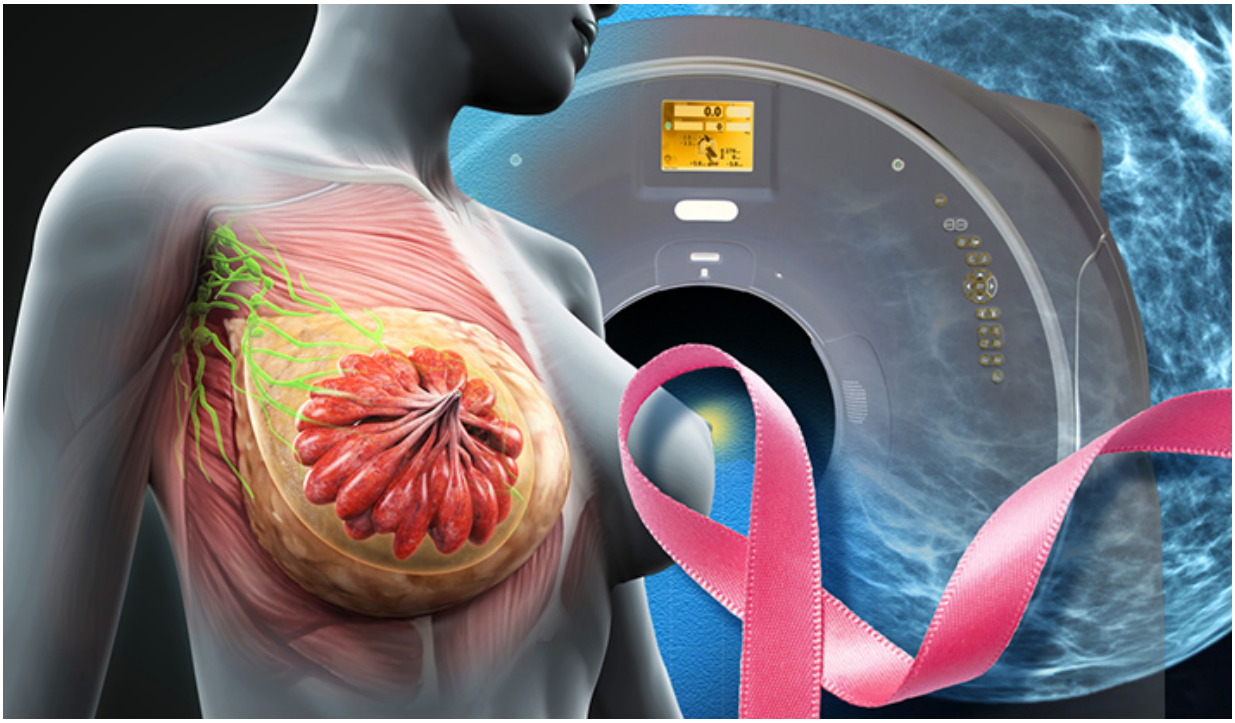

Credit: Patrick Lynch / Yale University

Magnetic resonance imaging (MRI) of the breast has become part of routine medical care for many women undergoing breast cancer surgery, but these highly sensitive tests might identify health problems that would not otherwise impact patients—or lead to "overdiagnosis," according to a Yale School of Medicine study.

Published in the *Journal of Clinical Oncology*, the study examined whether preoperative MRI use would allow doctors to identify breast cancer in the opposite breast (the one not affected by the diagnosed cancer) earlier, and therefore reduce the likelihood of advanced diseases in the future.

The researchers found that that nearly half of additional breast cancers detected by the preoperative MRI were overdiagnosed, which means that many of the cancers not detected by MRI would not have become clinically evident over the subsequent five years.

"This overdiagnosis is associated with false positive findings, psychological stress, more cancer detection, and costs, but does not prevent advanced disease or improve health outcomes," said lead author Dr. Shiyi Wang, assistant professor of chronic disease epidemiology at Yale School of Public Health and a faculty member in the Cancer Outcomes, Public Policy, and Effectiveness Research (COPPER) Center at Yale School of Medicine and Yale Cancer Center.

Wang and his colleagues analyzed the Surveillance, Epidemiology, and End Results-Medicare dataset. The team compared two groups of women who had breast cancer in terms of the occurrence of breast cancer in the opposite breast (i.e., contralateral breast cancer): One group had received an MRI, and another group did not.

The team found that after five years, the MRI group had a higher incidence of cancer in the opposite breast than the non-MRI group (7.2% vs. 4.0%). "Specifically, MRI use would approximately double the detection rate of early-stage contralateral breast cancer, but would not decrease advanced-stage contralateral breast cancer occurrences after a five-year follow-up," said Wang. "There was no evidence that MRI use was benefiting women because the rate of advanced cancer, whose prognosis is harmful, was similar in the MRI and the non-MRI groups."

Dr. Cary Gross, senior author of the study and professor of internal medicine at Yale School of Medicine, said, "Patients and physicians need to carefully balance risks and benefits of preoperative MRI. Preoperative breast MRI was associated with a large increase of detection rate of early-stage contralateral breast cancers, which led to additional treatments of the opposite breast."

"This early detection by MRI use and the associated treatments would increase women's suffering and stress, but did not prevent advance diseases or improve health outcomes," added Gross, who is a member of Yale Cancer Center.

More information: S.-Y. Wang et al. Preoperative Breast Magnetic Resonance Imaging and Contralateral Breast Cancer Occurrence Among Older Women With Breast Cancer, *Journal of Clinical Oncology* (2015). DOI: 10.1200/JCO.2015.62.9741

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