# Breast Cancer Recurrence May Depend On Surgeon

Ductal carcinoma in situ (DCIS), or non-invasive breast cancer, is typically treated with either breast-conserving surgery—with or without follow-up radiation—or mastectomy. The treatment choice depends on clinical factors, the treating surgeon, and patient preferences, with long-term health outcomes (disease-free survival) depending on the treatments received. According to a study published in *The Journal of the National Cancer Institute* , however, health outcomes are also associated with the treating surgeon.

To determine the comparative effectiveness of treatment strategies, Andrew W. Dick, Ph.D., of the RAND Corporation, and colleagues, conducted a retrospective study of women diagnosed with DCIS between 1985 and 2000 with as many as 18 years of follow-up. The researchers collected extensive data on the patients, including the rate of ipsilateral recurrence, or recurrent breast cancer in the same breast; whether the women had been treated with mastectomy or breast conserving surgery—with or without radiation therapy; and their margin status (margin of tissue surrounding their resected tumors). They defined margins as positive (in which cancer cells extend to the edge of the resected tissue), negative (cancer cells are more than two millimeters away from the edge of the tissue), or close (in which cancer cells are present within two millimeters of the edge).

According to the researchers, the two most important determinants of recurrent breast cancer are the tumor margins and whether or not the women have received radiation therapy following breast-conserving surgery. "BCS in the absence of radiation therapy resulted in substantially lower ipsilateral event-free survival than either BCS followed by radiation therapy or mastectomy," the authors write, adding, "Regardless of treatments, positive or close margins following the last surgical treatment substantially compromised ipsilateral event-free survival." Both of these important determinants of outcomes, however, varied markedly by the treating surgeon.

The authors write that the wide variability in treatment by surgeons may reflect differences in surgeons' knowledge, attitudes, and beliefs, especially given the lack of consensus on what constitutes a negative margin. "Lack of knowledge about the importance of margins, and differences in beliefs about the role of radiation therapy in local control, together with differences in physician-patient communication during the decision-making process could explain the substantial variation in the acceptance of positive margins and the determination not to proceed to mastectomy," the authors write.

Nevertheless, they estimate that with modest reductions in variation by surgeon,

based only on changes among those surgeons with low rates of radiation therapy and high rates of positive or close margins, ipsilateral 5 and 10-year event rates could be reduced by 15 to 30 percent. In an accompanying editorial, Beth A. Virnig, Ph.D., and Todd M. Tuttle, M.D., of the University of Minnesota, write that the study poses a perplexing question; "How should women select a provider knowing that up to 35 percent of the variation in outcomes is based on their choice of physician, but that there are no actionable characteristics that can be taken into account?"

They suggest one solution could be publishing the scores for all physicians performing breast cancer surgery in a particular area. In any case, the variability in surgeons' treatment choice provides a potential opportunity to improve or standardize DCIS care. They write, "The challenge is then for the professional community to identify factors that are associated with the currently unexplained physician variability and to use that information to promote identification of high-quality providers or quality improvement activities."

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