

# Turning back the clock: the increase in bilateral mastectomies

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When Bernard Fisher of National Surgical Adjuvant Breast and Bowel Project and George Crile Jr of the Cleveland Clinic initiated the conversation about breast cancer patients opting for breast preservation over radical surgery and achieving the same outcomes as those who opted for mastectomy, it was a game-changing concept. They were considered pariahs by their surgical peers, the dominating Halstedian surgeons. But when Fisher and his colleagues published findings<sup>1</sup> that showed equal efficacy for lumpectomy and mastectomy, the world took notice. Surgeons and patients were quick embrace the evidence, and that dramatic change in the approach to treatment continued until 2004, when we started seeing a steady increase in the mastectomy rate, and especially prophylactic mastectomy. There are a number of factors that could be driving that increase, but 2 stand out.<sup>2</sup> First, there are the medical reasons, such as the increased use of magnetic resonance imaging for diagnosis and management of breast cancer, genetic testing, and family history. Second, increasing numbers of younger, educated women with insurance seem to be choosing the bilateral mastectomy route. Both factors are driven by the increase in access to information about breast cancer and its diagnosis and treatment, but we need to be careful that the information is evidence based and carefully weighed when deciding on treatment.

So it is timely that we were recently able to read the findings by Kurian and colleagues on the use of and mortalities associated with bilateral mastectomy compared with breast-conserving surgery with radiation or unilateral mastectomy in women with early-stage, unilateral breast cancer.<sup>3</sup> The findings shed sobering light on the procedures' use and mortality rates, and in doing so, highlight the importance of having access to data that can both guide oncologists in their surgical selections for this population and assist patients in decisions about their therapy. In addition, the findings flag some nonclinical but important issues for practicing oncologists, among them, how do you talk to and educate patients about weighing the clinical and statistical distinctions to be able to make those decisions?



The investigators conducted a 14-year, observational cohort study of data from almost 190,000 women with early-stage breast cancer, of whom 6.2% had opted for the bilateral mastectomy, 55% for breast-conserving surgery with radiation, and 38.8% for unilateral mastectomy. They reported no mortality benefit among patients who had bilateral mastectomies compared with those who elected breast-conserving surgery with radiation (10-year mortality, 18.8% and 16.8%, respectively), but they did find that unilateral mastectomy was linked to higher all-cause mortality (20.1%) than was breast-conserving surgery with radiation.

Kurian and colleagues also noted that the use of bilateral mastectomy had had increased from 2% of all patients in 1998 to 12.3% in 2011 – an annual increase of 14.3%. The increase over the same period was greatest among women who were younger than 40 years (1998: 3.6% vs 2011: 33%), for an annual increase of 17.6%.

Among the proposed reasons for the overall increase was the greater use of diagnostic screening such as magnetic resonance imaging and genetic testing. The increase among women in the under-40 age group might have been because they had a higher probability of carrying the genetic mutations or because they had younger children and therefore sought the more invasive procedure in the hopes of living longer – an “emotional rather than evidence-based decision,” as Kurian and her coauthors put it.

The breakdown of who used the bilateral mastectomy and who elected the unilateral option was revealing, especially if one looks at the nonclinical trends. Clinically, women who used the bilateral procedure were more likely to have a larger tumor, nodal involvement, lobular histology, higher grade status; more broadly, they were more likely to be non-Hispanic white, younger than 50 years, have private insurance, live in high socioeconomic status (SES) neighborhoods, and receive care at a National Cancer Institute-designated cancer center. Women who had the unilateral mastectomy had similar clinical characteristics to the bilateral mastectomy patients, but were more likely to be racial or ethnic minorities, to have public or Medicaid insurance, live in lower- SES neighborhoods, and be treated in hospi-

tals that served lower-SES patients. Kurian and colleagues suggest that comorbidities such as diabetes and cardiovascular disease tend to be more prevalent among the latter population and that the therapies for those conditions could hamper the impact of the cancer therapies and thus affect outcomes – or possibly that some women might not have access to easy transportation to their follow-up radiation therapy, which would also have a negative impact on outcomes.

Some have been quick to attribute the increased use of bilateral mastectomy to the 2013 revelation by actress Angelina Jolie that she underwent a double mastectomy after she learned she had a genetic predisposition to breast cancer. But I don't think that is the case. Certainly her decision might have raised awareness about genetic testing, but the published evidence shows us that the number of bilateral mastectomy started going up in 2004, not in 2013.

Knowledge is power. But in this age of information age, managing knowledge and information is power. The medical community has tremendous responsibility in communicating the actual risk and benefit of procedures to the

patients. Repeated studies have shown that the perceived risk of contralateral breast cancer and benefit from contralateral mastectomy is different from the data. So it is important for us to communicate the data in more effective way to the patients. Our communication could potentially alleviate the patients concerns and fears and at the end the patient needs to make the decision which is comfortable. Our role is to provide the right information.

### References

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