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Surgical Treatment of Early Breast Cancer: What Would Surgeons Choose for Themselves?

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CONTEXT. Although breast-conserving surgery (BCS) is less invasive than mastectomy and results in similar survival, many women eligible for BCS continue to undergo mastectomy. Whether the persistent use of mastectomy means that women do not understand their options or reflects an informed preference is unknown.

OBJECTIVE. To learn which treatment surgeons would choose when asked to imagine that they themselves had early-stage breast cancer.

DESIGN. Cross-sectional survey.

SAMPLE. Convenience sample of 40 staff and resident surgeons attending surgical grand rounds at Dartmouth–Hitchcock Medical Center in 1998.

MAIN OUTCOME MEASURE. Choice of BCS or mastectomy for the treatment of stage I breast cancer.

RESULTS. Twenty-six male and 14 female surgeons participated in the survey. Half chose BCS and half chose mastectomy for treatment of their hypothetical early-stage breast cancer. Results did not differ by the sex of the surgeon.

CONCLUSION. Even after being reminded of the equivalent 10-year survival statistics, half of the surgeons surveyed said that they would choose mastectomy over BCS for themselves. The assumption that BCS is the "right" choice for early-stage breast cancer may be unwarranted because many patients may have an informed preference for mastectomy.

Although surgery is universally recommended for women with early-stage breast cancer (i.e., stage I or II), the choice of procedure can be controversial. Mastectomy, or complete removal of the breast, was routinely practiced until the mid- to late 1980s, when randomized trials demonstrated that far less disfiguring breast-conserving surgery (BCS)—lumpectomy, axillary lymphadenectomy, and radiation—yielded identical survival rates. BCS is now a well-accepted alternative to mastectomy for most women with early-stage breast cancer. A National Institutes of Health Consensus Conference even concluded that BCS is preferable to mastectomy because it preserves the breast without lessening the probability of cure.[1]

Nonetheless, many women with early-stage breast cancer continue to undergo mastectomy.[2–4] Many authors believe that persistently high rates of mastectomy are inappropriate and suggest that women are unaware that BCS is an option. Others have argued

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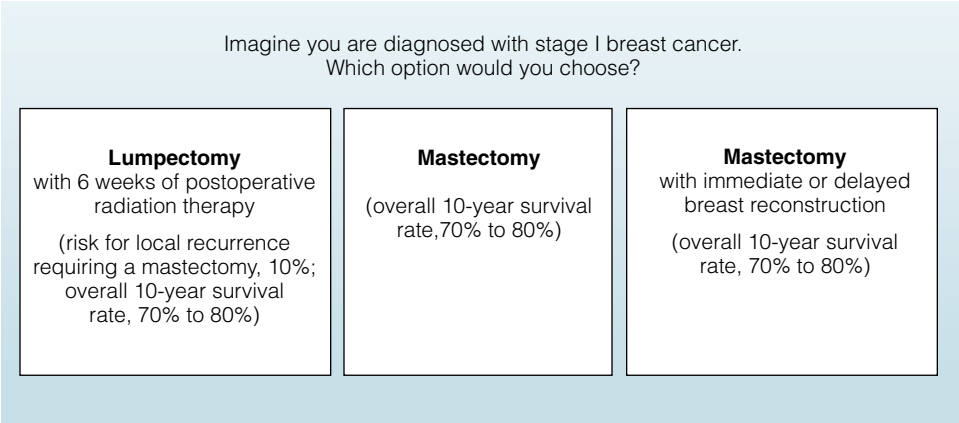

FIGURE 1. Presentation of study question.

that patient preference (presumably for BCS) is being trumped by physician preference or by such nonclinical factors as the local supply of resources (e.g., availability of the radiation therapy required for BCS). The assumption that BCS is the "right" choice is so strong that some authors have used high rates of this surgery as a quality marker in profiling practice patterns.[5,6]

In fact, it is not clear that high rates of BCS would accurately reflect patient preferences. A fully informed woman, given the choice between BCS and mastectomy, may prefer the latter because of concerns about radiation, the risk for recurrence, a desire to finish treatment quickly, or lack of confidence in long-term survival data. We surveyed a group of surgeons (proxies for well-informed patients) to determine which option they would choose if they had early-stage breast cancer.

Methods

Forty staff and resident surgeons attending surgical grand rounds at an academic teaching hospital (Dartmouth–Hitchcock Medical Center, Lebanon, New Hampshire) were surveyed in July 1998. Respondents were told to imagine that they were women with stage I breast cancer and that they were asked to choose among three treatment options (**Figure 1**). They were told to assume that they were a candidate for either BCS or mastectomy, that all treatment choices were associated with a 10-year survival rate of 70% to 80%, and that BCS was accompanied by a 10% risk for local recurrence that would require mastectomy. *Breast-conserving surgery* was defined as lumpectomy, ipsilateral axillary dissection, and postoperative radiation therapy lasting 6 weeks. *Modified radical mastectomy* was defined as amputation of the breast and an ipsilateral axillary node dissection with or without breast reconstruction.

Results

Of the 40 surgeons surveyed, 26 were male and 14 were female. Half of the respondents chose mastectomy (**Figure 2**). The results were identical for male and female surgeons (13 men and 7 women chose mastectomy). Among the 20 respondents who chose mastectomy, 16 desired breast reconstruction. The proportion choosing reconstruction did not differ significantly by sex (85% of men vs. 71% of women; $P > 0.2$).

Discussion

During the past decade, treatment of early-stage breast cancer has evolved dramatically: BCS has replaced mastectomy as the treatment option preferred by professional societies and expert panels.[1] Even so, mastectomy remains a common treatment.[2–4] Many physicians are troubled by this fact because they assume that properly informed women would select the less-deforming surgery. Our findings challenge this assumption.

We asked surgeons which treatment they would choose if they received a diagnosis of early-stage breast cancer. Strikingly, half of the surgeons chose mastectomy for themselves. Given the surgeons' experience with issues of survival and recurrence, as well as personal familiarity with the results of both BCS and mastectomy, it would be implausible to call these choices un-

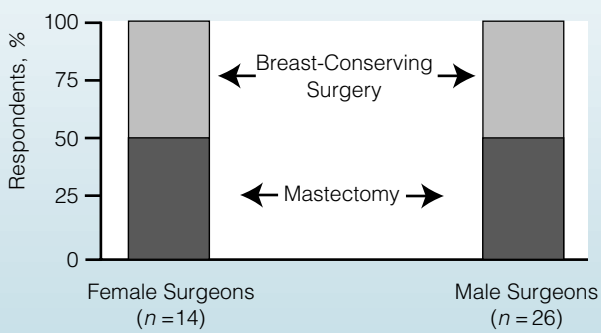

FIGURE 2. Treatment choices for male and female surgeons. Mastectomy includes surgery done with and without breast reconstruction.

informed. Instead, our findings suggest that BCS, as opposed to mastectomy, is not the right choice for everyone. Therefore, the prevailing assumption that high rates of BCS are optimal does not account for the varying preferences of informed patients.

We studied patient preference for the choice between BCS and mastectomy. Other factors have been shown to influence the choice of treatment, including physician characteristics, such as the propensity to recommend one treatment over another[7, 8]; system factors, such as the availability of radiation services (which are necessary for BCS[3]); and issues that affect patient access, such as type of insurance coverage (rates of BCS are lower for patients without health insurance).[9]

Because our survey is based on hypothetical rather than actual choices, our results should be interpreted with caution. Real patients, even those who are highly informed, may approach the decision differently, although it is impossible to predict the direction of any bias introduced. Surgeon responses might also have been influenced by "social desirability"; that is, surgeons might give the answer perceived to be the most socially acceptable rather than accurately reporting their own preferences. Given the sanction of BCS over mastectomy by professional organizations, however, one would expect social desirability to favor BCS.

Finally, although we examined preferences, we did not ask respondents to provide the reasons for their choices. Each treatment involves trade-offs. BCS is less disfiguring, but it necessitates weeks of radiation treatment and a higher risk for local recurrence than does mastectomy. Consequently, women concerned about the potential hazard of radiation exposure, the inconvenience of protracted treatment, or the chance of local recurrence may prefer mastectomy. Moreover, some may not believe that long-term survival is truly equivalent for the two treatments and feel safer by having the entire affected breast removed. Finally, the availability of reconstruction (chosen by 80% of the surgeons who opted for mastectomy) can mitigate the disfiguring effects of mastectomy.

Our results argue against the notion that BCS is always the right choice for the treatment of early-stage breast cancer. Even informed, medically sophisticated decision makers differ markedly in their own preferences. Choosing between BCS and mastectomy involves many personal factors. Rather than designating a "preferred" treatment (e.g., using rates of BCS to measure quality[5, 6]), efforts should focus on helping patients with early-stage breast cancer identify their preferences and make choices that reflect these preferences.

Take-Home Points

- **For women with early-stage breast cancer, the chance of survival after breast-conserving surgery (BCS) is equivalent to that after mastectomy.**
- **Because BCS is less invasive than mastectomy, the proportion of women treated with this surgery has been proposed as an indicator of quality.**
- **Despite research showing the benefits of BCS, many women continue to undergo mastectomy, a finding many physicians consider troubling.**
- **Half of the surgeons surveyed said that they would choose mastectomy for themselves if they had early-stage breast cancer.**
- **The assumption that BCS is always the "right" choice is unwarranted because patients may have an informed preference for mastectomy.**

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