Published in final edited form as:

Breast Cancer Res Treat. 2011 February ; 126(1): 261–264. doi:10.1007/s10549-010-1266-4.

Effects of breast cancer surgery and surgical side effects on body image over time

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Dear Sir,

We thank Munhoz et al. [1] for their thoughtful comments regarding our manuscript [2]. We appreciate their perspective on the impact that our results may have on breast cancer patients' decisions regarding their surgical treatment options and agree that a patient's body image, which is affected by surgical treatment, can have a lasting impact on quality of life. Munhoz et al. [1] and Lee et al. [3] suggested that a patient's personal desires and values are essential considerations during the surgical decision-making process. We agree that a patient's personal preferences should be considered in surgical treatment decisions, but it is necessary to mention that some breast cancers may require specific surgeries. For example, widespread ductal carcinoma in situ (DCIS) [4] and large tumors relative to breast size [5]

(in patients who do not elect to have neoadjuvant chemotherapy) require mastectomy for local control, and in these cases a choice of breast-conserving surgery (BCS) is not offered. All patients in our study were diagnosed with either DCIS or early-stage invasive breast cancer (stages I or IIA), and none of these patients had received neoadjuvant chemotherapy to shrink larger tumors before surgery. In addition, not all patients were eligible to receive post-mastectomy reconstruction because of other health-related factors. These factors may have affected the decision-making process for surgery type and/or reconstruction for some patients in our sample, thus limiting the effect of patients' personal preference in decision-making.

Although we did not measure patients' personal preference for surgical treatment or the appropriateness of the surgical treatment received, patients reported their level of involvement in decision-making about the type of surgical treatment they received [6], which we have not previously reported. Recall that at the second interview, 6 months after surgery, patients who received mastectomy with reconstruction still reported significantly more body image problems compared with patients who received mastectomy alone in a model that controlled for surgical-side-effects severity [2]. At the second interview, 80% of our sample indicated that they had been "very involved" in their surgical treatment decisions, 13% had been "involved a fair bit," and 7% had been "not at all involved."

In response to the letter from Munhoz et al. [1], we further examined the interaction between type of surgery and involvement in surgical treatment decisions on patients' body image and found this interaction effect to be significant at the second interview ($P = 0.015$). Specifically, patients who received mastectomy with reconstruction and were either "involved a fair bit" or "not at all involved" in their surgical treatment decisions reported more body image problems compared with patients who received either BCS or mastectomy alone and had similarly lower levels of involvement in surgical treatment decisions (see Fig. 1). We previously reported that women who received mastectomy with reconstruction had more body image problems 6 months after the definitive surgical treatment [2], but the current analysis suggests that a perceived lack of involvement in surgical treatment decisions might negatively affect body image in patients receiving mastectomy with reconstruction more so than in patients receiving BCS or mastectomy alone.

Helping patients receiving reconstruction feel that they are more involved in the surgical decision-making process may help alleviate future problems with body image. In addition, it is possible that patients who had mastectomy with reconstruction and who reported lower levels of involvement in surgical treatment decisions might be experiencing regret regarding surgical treatment decisions at the 6-month interview, since they may still be struggling with surgical side effects during the reconstruction process, which can take up to a year or more to complete. These patients might think that they made the wrong decision regarding their surgical treatment, especially since we only saw this difference in patients who reported lower levels of involvement in their surgical treatment decisions. Differences in patients' body image by their level of involvement in treatment decisions, however, disappeared by the 1-year follow-up interview. Also, body image in patients who felt "very involved" in their surgical treatment decisions was similar across all types of surgery. Thus, it remains to be seen whether regret over surgical treatment decisions, which was not measured in our study, plays a role in body image after surgery. We hope these results can inform the decision-making process for both patients and surgeons.

Acknowledgments

This study was supported by a grant from the National Cancer Institute and Breast Cancer Stamp Fund (R01 CA102777) to Dr. Jeffe and by the National Cancer Institute Cancer Center Support Grant (P30 CA91842) to the

Alvin J. Siteman Cancer Center at Washington University School of Medicine and Barnes-Jewish Hospital in St. Louis, Missouri, which supports in part the Health Behavior, Communication and Outreach Core.

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Fig. 1. Patients' body image at the 6-month post-surgery interview, by the type of surgical treatment and perceived level of involvement in surgical treatment decisions