PSN

Reconstruction Department

CE 2.0 ANCC Contact Hours

Comparing Patient Satisfaction in Bilateral and Unilateral Breast Reconstruction

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Background: Current literature in breast reconstruction continues to provide answers to questions regarding patient satisfaction in the areas of autologous vs alloplastic reconstruction and silicone vs saline implants. There are no studies, however, that specifically address patient satisfaction with bilateral vs unilateral breast reconstruction. Our goal was to assess patient satisfaction with bilateral compared with unilateral breast reconstruction.

Methods: Over a 4-year period, 108 patients completed either unilateral or bilateral breast reconstruction from a single surgeon. Patient satisfaction in these patients was assessed using a questionnaire developed focusing on clinical outcome measures of aesthetic and functional satisfaction.

Results: A total of 72 anonymous surveys were returned. Statistically significant differences were seen with respect to overall symmetry, aesthetics without clothing, and overall satisfaction between unilateral and bilateral reconstructions. In each of these categories, the average patient satisfaction score was higher for bilateral reconstructions. Furthermore, when comparing unilateral vs bilateral reconstruction in the different reconstruction types, parallel differences in patient satisfaction were noted.

Conclusion: The results of this study suggest that patients were more satisfied with bilateral reconstruction because of improved symmetry, superior aesthetic appearance without clothing, and overall satisfaction with the reconstructive process. Future studies with larger subsets of patients are needed.

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Breast cancer is the most common nonskin cancer in the United States and second leading cause of cancer-related death in women (National Cancer Institute, 2013). Many women with breast cancer will require a mastectomy (Nattinger, 2005), and many are choosing to have postmastectomy breast reconstruction (Christian et al., 2003). As breast reconstruction rates continue to rise (Polednak, 2001), more breast cancer patients will have important questions regarding the difficult challenges and decisions they face.

One of the most crucial questions that can be asked by patients is regarding surgical outcomes in terms of prior patient satisfaction. Importantly, current literature in breast reconstruction continues to provide answers to questions regarding patient satisfaction in the areas of autologous versus alloplastic reconstruction (Chun, Sinha, Turko, Lipsitz, & Pribaz, 2010) and silicone versus saline implants (Macadam, Ho, Cook, Lennox, & Pusic, 2010). There are no studies, however, that specifically address patient satisfaction with bilateral versus unilateral breast reconstruction.

With the oncologic efficacy of bilateral mastectomies having been established (Hartmann, Schaid, & Woods, 1999; Hartmann, Sellers, & Schaid, 2001; Herrinton et al., 2005; McDonnell, Schaid, & Myers, 2001; Meijers-Heijboer et al., 2001; Peralta, Ellenhorn, & Wagman, 2000), it is crucial to provide clear answers regarding outcomes to women faced with a choice of bilateral or unilateral breast reconstruction. Although there are data that assessed patient satisfaction with bilateral reconstruction (Bresser et al., 2006), there is no report of a comparison to unilateral reconstruction. A simple Internet search of "bilateral versus unilateral reconstruction" yields countless Web sites, forums, and personal pages attempting to guide women who have to make this difficult decision (Google, 2014). As the decision to remove and reconstruct one or both breasts may be the toughest decision a woman will have to face, it is crucial for plastic and reconstructive surgeons to provide as much information as necessary so that patients can make a reassured decision.

Currently there are no reports to date of patient satisfaction with bilateral compared with unilateral

Breast Reconstruction Questionnaire

On a scale from 1-5, with 1 being very unsatisfied and 5 being extremely satisfied, how would you rate your satisfaction with your reconstruction in the following areas?

1) Overall breast symmetry: 1 2 3 4 5

2) Aesthetic result (are you pleased with the appearance):
Reconstructed breast:
-With clothing: 1 2 3 4 5
-Without clothing: 1 2 3 4 5
Non reconstructed breast:
-With clothing: 1 2 3 4 5
-Without clothing: 1 2 3 4 5

3) Physical function (ability to exercise, play sports, perform tasks around the house or work): 1 2 3 4 5

4) Sexual function and satisfaction (sensation, fulfillment): 1 2 3 4 5

5) Overall satisfaction with reconstruction: 1 2 3 4 5

6) Overall satisfaction with recovery: 1 2 3 4 5

7) Did you have any problems postoperatively? YES NO
If yes, what problems did you experience?_____
_____

What type of surgery did you have? (check all that apply)
Bilateral mastectomy with bilateral reconstruction: _____
Unilateral mastectomy with unilateral reconstruction: _____
Tissue from abdomen breast reconstruction_____
Tissue from back breast reconstruction_____
Tissue from buttock/thigh breast reconstruction_____
Tissue expander/implant breast reconstruction_____
Additional breast surgery:
nipple reconstruction: _____
breast lift or reduction: _____
breast revision surgery: _____

FIGURE 1. Breast reconstruction questionnaire.

reconstruction. Although many current studies utilize the BREAST-Q (Pusic et al., 2009; Scientific Advisory Committee of the Medical Outcomes Trust, 2002; U.S. Food and Drug Administration, 2006), our goal was to compare patient satisfaction between patients having bilateral and unilateral breast reconstructions using a practical and direct questionnaire.

PATIENTS AND METHODS

Since 2009, a total of 108 patients have underwent breast reconstruction performed at a single institution (Loyola University Medical Center, Maywood, IL) by the senior author (D.V.). Patient charts were reviewed for patients who completed either unilateral or bilateral breast reconstruction with the permission of the institutional review board at Loyola University Medical Center.

Patient satisfaction was assessed using a questionnaire developed under the direction of the senior author focusing on clinical outcome measures of aesthetic and functional satisfaction (Figure 1). Patients were asked to assess the following areas on a 5-point scale (1 = *very unsatisfied*, 5 = *extremely satisfied*): overall breast symmetry, aesthetic result with and without clothing, physical function, sexual function, recovery, and overall satisfaction. Surveys were mailed to each of the patients in a single envelope.

TABLE 1 Types of Breast Reconstruction for Responders to Survey

	Unilateral	Bilateral
Tissue expander and implant reconstruction	13	20
Latissimus dorsi reconstruction	15	5
Free abdominal tissue reconstruction	13	6

For statistical analysis, the main outcome variables were questionnaire satisfaction scores. Study results were calculated using proportions and means with standard deviations. The questionnaire data were analyzed using Student's *t* test. Statistical significance was defined as having a $p < .05$.

RESULTS

A total of 72 of the 108 anonymous surveys were completed and received. Of the responders, 41 had unilateral reconstruction and 31 had bilateral reconstruction. The distributions are shown in Table 1. Free abdominal tissue reconstructions were all transverse rectus abdominus myocutaneous (TRAM) flaps with the exception of one patient who had a unilateral deep inferior epigastric perforator (DIEP) flap.

The overall results from the patient satisfaction survey for all patients are shown in Table 2. Of note, statistically significant differences were seen with respect to overall symmetry, aesthetics without clothing, and overall satisfaction between unilateral and bilateral reconstructions. In each of these categories, the average patient satisfaction score was higher for bilateral reconstructions.

Results for the different types of breast reconstructions are shown in Tables 3–5. For tissue expander/implant reconstruction, bilateral reconstruction showed statistically significant higher patient satisfaction in overall symmetry, aesthetics without clothing, and overall satisfaction.

TABLE 2 Overall Results Comparing Patient Satisfaction in Unilateral Versus Bilateral Reconstruction

	Unilateral	Bilateral	*p*
Overall symmetry	3.44	4.41	<.01
Aesthetics w/clothing	4.45	4.55	*ns*
Aesthetics w/o clothing	3.27	4.04	<.01
Physical function	4.36	4.45	*ns*
Sexual satisfaction	3.20	3.01	*ns*
Recovery	4.32	4.25	*ns*
Overall satisfaction	3.80	4.42	<.01

Note. ns = not statistically significant.

TABLE 3 Tissue Expander/Implant Patient Satisfaction Results

	Unilateral	Bilateral	*p*
Overall symmetry	3.17	4.37	<.05
Aesthetics w/clothing	4.50	4.17	*ns*
Aesthetics w/o clothing	3.33	4.20	<.05
Physical function	4.75	4.80	*ns*
Sexual satisfaction	3.00	3.40	*ns*
Recovery	4.75	4.60	*ns*
Overall satisfaction	3.65	4.60	<.05

Note. ns = not statistically significant.

For latissimus dorsi reconstruction, overall symmetry and overall satisfaction scores were significantly higher in the bilateral reconstructions. The free abdominal tissue reconstructions showed a higher overall symmetry score with bilateral compared to unilateral reconstruction.

DISCUSSION

This is the first study that specifically assesses patient satisfaction with unilateral versus bilateral breast reconstruction. Even the most recent literature regarding patient satisfaction in the setting of breast reconstruction calls for studies that address this issue (Yeuh et al., 2010). Although some women facing breast reconstruction have medical and oncologic reasons that may influence their decision (Meijers-Heijboer et al., 2001), our goal was to provide patients with information from purely an aesthetic viewpoint. Furthermore, we wanted to further isolate and examine breast reconstruction to provide the clearest answers possible to patients, as studies have already examined patient satisfaction for mastectomy (Borgen, Hill, & Tran, 1998; Frost, Schaid, & Sellers, 2000; Hatcher, Fallowfield, & A'Hern, 2001; Stefanek, Helzlsouer, Wilcox, & Houn, 1995).

TABLE 4 Latissimus Dorsi Patient Satisfaction Results

	Unilateral	Bilateral	*p*
Overall symmetry	3.24	4.22	<.05
Aesthetics w/clothing	4.22	4.20	*ns*
Aesthetics w/o clothing	2.78	3.68	*ns*
Physical function	4.22	4.40	*ns*
Sexual satisfaction	3.38	3.12	*ns*
Recovery	4.12	3.77	*ns*
Overall satisfaction	3.52	4.19	<.05

Note. ns = not statistically significant.

TABLE 5 Free Abdominal Tissue Patient Satisfaction Results

	Unilateral	Bilateral	*p*
Overall symmetry	3.91	4.65	<.05
Aesthetics w/clothing	4.63	5.00	*ns*
Aesthetics w/o clothing	3.71	4.25	*ns*
Physical function	4.11	4.00	*ns*
Sexual satisfaction	3.11	3.75	*ns*
Recovery	4.11	3.82	*ns*
Overall satisfaction	4.22	4.36	*ns*

Note. ns = not statistically significant.

The results of this study suggest that patients were more satisfied with bilateral reconstruction due to improved symmetry, superior aesthetic appearance without clothing, and overall satisfaction with the reconstructive process. These results were often mirrored when looking at the individual types of reconstruction. For instance, patients undergoing implant-based reconstruction also noted improved symmetry, aesthetics without clothing, and overall satisfaction with bilateral reconstruction. For the autologous-based reconstructions, patients who had latissimus reconstructions noted improved symmetry and overall satisfaction while those who had either a TRAM or DIEP reconstruction noted improved symmetry only. Especially as the number of bilateral mastectomies and subsequent need for reconstruction increases, it will be reassuring to patients that bilateral procedures are often viewed favorably by most patients (Patani, Devalia, Anderson, & Mokbel, 2008).

There are some limitations to this study design. First, there is a selection bias by nature of the retrospective nature of this analysis, patients cannot be randomized to the type of reconstruction they had. Second, our patient population is relatively small; nevertheless, we were able to see statistically significant results and were able to limit confounding information by examining all patients operated on by the same surgeon. A larger analysis would also allow differentiation between TRAM and DIEP reconstruction, which were included together in this study. Third, as this was an anonymous survey, we were unable to assess whether patient satisfaction changed over time. This is obviously an important consideration as the literature has documented that changes over time do occur (Alderman, Kuhn, Lowery, & Wilkins, 2007). Finally, this study is subject to recall bias, as some patients may not have recalled the details of their reconstruction.

Future studies regarding the differences in satisfaction between unilateral and bilateral reconstructions are likely to benefit from larger sample sizes. It must be considered that from an oncologic perspective, performing bilateral mastectomies may not always lower cancer risk and that complications can arise in reconstruction of a prophylactically removed breast. Obviously, there are many difficult decisions that patients, surgical oncologists, and reconstructive breast surgeons are faced with. Nevertheless, we are pleased with our results for overall satisfaction that clearly delineate a significant difference in overall satisfaction between the two groups. As many of our patients continue their personal search for information and comfort in crucial decisions facing breast reconstruction, we hope to have provided some simple answers to a not-so-simple question.

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