

Exploring the Effect of the Referring General Surgeon's Attitudes on Breast Reconstruction Utilization

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ABSTRACT

Background: Breast reconstruction rates remain low, at 5%-15% of mastectomy patients, despite the safety and high patient satisfaction of these procedures. Reasons for this are multifactorial, including the attitudes and biases of the referring breast surgeon, as well as patient factors. The purpose of this study was to explore attitudes of general surgeons towards breast reconstruction.

Methods: We surveyed 369 general surgeons in Wisconsin with questions about breast surgery. Responses from 135 (36%) surgeons were analyzed.

Results: Seventy-three percent of the respondents performed at least some breast surgery and were eligible for the study. For a little over 50% of the general surgeons surveyed, breast surgery made up less than 10% of their practice. Fifty-one percent never performed a skin-sparing mastectomy. A large number of breast surgeons (40%) did not refer all mastectomy patients for reconstruction. Reasons cited for not referring patients included the concerns over cancer recurrence and advanced patient age. Reasons for patients not undergoing reconstruction included patient's refusal, need for radiation therapy, delaying adjuvant oncologic treatment, patient factors, and having no plastic surgeon available locally.

Conclusions: The decision by a patient to undergo breast reconstruction involves many complex factors. As a specialty, we should focus on improving the availability of breast reconstructive surgeons and educating referring surgeons and patients about reconstructive indications and options in order to positively affect the utilization of breast reconstruction.

INTRODUCTION

The American Society of Plastic Surgeons reported that 56,176 patients underwent breast reconstructive procedures in 2006.¹ Despite the high number of patients undergoing reconstruction, breast reconstruction rates remain low, with only 5%-15% of eligible patients undergoing reconstruction.^{2,3} The reasons for this are complicated and multifactorial. In the United States, there are geographic differences in breast reconstruction rates,⁴ which could be due to differences in cultural values and access to health care. When they examined the Surveillance, Epidemiology, and End Results (SEER) database, Alderman et al found that Atlanta had a 33.6% immediate reconstruction rate compared to Hawaii's rate of 7.6%.³ Sociodemographic factors including age, race, patient income, and geographic location are also correlated with reconstruction rates.^{3,5} Clinical variables, such as stage of disease and need for adjuvant therapy, likely also effect reconstruction utilization.^{3,5}

Other studies have found that the referring general surgeon's biases and level of knowledge regarding reconstruction influence a patient's decision to undergo breast reconstruction.^{2,6-8} Additionally, there are likely other patient factors that influence the decision to choose breast reconstruction. Hawley et al found that patient factors and surgeon demographics accounted for 60% of between-surgeon variation in reconstruction referral.⁹

In the present study, we hypothesized that referring physician biases and recommendations influence whether a patient undergoes breast reconstruction. We set out to characterize and define these biases and examine subgroups of referring physicians.

METHODS

We surveyed 369 general surgeons in Wisconsin. The physician file was obtained from the American College of Surgeons as an electronic database. The survey was administered through the mail with a reminder postcard sent 1 month after the original mailing. No incentive gift for completion of the survey was offered. The sur-

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vey contained 27 questions. Questions were asked about oncologic and reconstructive breast surgery as well as demographic information. A 5-point Likert scale was used for some questions (Strongly Agree to Strongly Disagree). Questions about percentages were left open-ended. Other questions were multiple choices and multiple answers, and included questions about referral and practice patterns. The surveyed general surgeons were given 6 statements that were either positive or negative regarding several aspects of breast reconstruction, and they were asked whether they agreed or disagreed with the statements. The survey was administered in January 2007. Specifically, we set out to examine ideas and opinions about breast reconstruction.

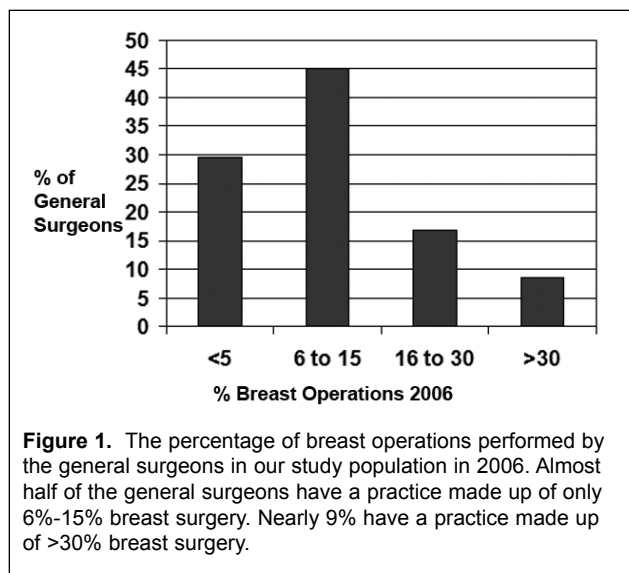
The survey was approved by the University of Wisconsin Health Sciences Internal Review Board and questions were developed in conjunction with the University of Wisconsin Comprehensive Cancer Center Survey Research Shared Service.

Data analysis was performed using R for Windows version 2.4.0. For subgroup analysis, a chi-squared test was done to look for significance between 2 groups. Urban surgeons were defined as surgeons who practice in the 3 largest urban areas of Wisconsin (Madison, Milwaukee, and Green Bay) and rural surgeons were the remaining surgeons. We also compared answers between surgeons who had been in practice <15 years and >15 years. These years were chosen as the cutoff because it split the study population approximately in half.

RESULTS

Responses were received from 135 (36%) of surgeons surveyed, with 84% male and 16% female. Seventy-four percent of respondents trained in an academic setting and 22% trained in a community program, while 4% trained in an "other" setting. Five percent of the surgeons received post-residency training in surgical oncology or breast oncology. Sixty-five percent of the respondents had been in practice >15 years.

Figure 1 shows the number of breast operations performed by our sample population in 2006. For a little over 50% of the general surgeons surveyed, breast surgery made up less than 10% of their practice. Interestingly, 51% of the surgeons never perform a skin-sparing mastectomy and 90% never perform a nipple-sparing mastectomy. A majority (74%) of these surgeons stated that they discuss breast reconstruction with all of their mastectomy patients, but a substantial number of surgeons (33%) do not routinely refer eligible patients to plastic surgeons to discuss breast reconstruction.



We examined factors affecting referral for breast reconstruction. Thirty-seven percent of respondents consider age to be a factor when deciding which patients to refer for breast reconstruction. Also, 44% refer only if there is a low chance of breast cancer recurrence. However, if the patient expresses concern about her own sexual image, then she is likely to be referred by 44% of respondents. The majority of general surgeons stated that the factors that we asked about (eg, age, patient's acceptance of mastectomy, patient's own sexual image, etc) made no difference on the decision to send a patient to a plastic surgeon.

Patient refusal was cited by surgeons as a common reason (62%) that patients do not get breast reconstruction. Other less common, but significant, reasons that patients are not being referred for breast reconstruction include delay in oncological treatment (18%), the patient will receive radiation therapy (19%), reconstruction was not offered (11%), and no plastic surgeon was available (6%).

A significant number of surgeons (17%) refer their patients to plastic surgeons after mastectomy. Patient deferral to see a plastic surgeon pre-mastectomy was the most common reason cited (42%). Other reasons for post-mastectomy referral include difficulty in coordinating immediate breast reconstruction with a plastic surgeon (18%), having no plastic surgeon available (17%), and need for radiation therapy (19%).

Forty-seven percent of respondents never refer a patient who has received a partial mastectomy, while 52% sometimes refer a patient to a plastic surgeon. Ninety percent of general surgeons surveyed never perform "onco-plastic" surgical procedures.

Table 1 summarizes the response data to several

Table 1. Statements Posed to General Surgeons in Wisconsin

Statement	Strongly Agree / Agree (%)	Neutral (%)	Disagree / Strongly Disagree (%)
Surgeons should pursue Breast Conservation Treatment rather than reconstruction.	68	33	9
Aesthetic results are worth monetary costs.	62	35	3
I am reluctant to damage healthy tissue.	5	9	86
Reconstruction imposes too high a burden.	0	9	91
Reconstruction may mask a local recurrence.	29	29	42
Reconstruction restores femininity.	74	25	2

statements. In response to the statement, “Breast reconstruction masks breast cancer local recurrences,” 29% of surgeons agreed with the statement and 29% were neutral on this statement.

Subgroup analysis was performed to examine differences between surgeons who had been in practice less than and more than 15 years, and between urban and rural surgeons. Urban surgeons in this population are more likely to consider the patient’s income status (urban=29% versus rural=0%, $P<0.05$) and the patient’s age (urban=14% versus rural=0%, $P<0.05$) as factors in determining whether they would refer the patient to a plastic surgeon (Figure 2). Conversely, rural surgeons were more likely to consider if the patient had comorbidities (urban=29% versus rural=44%, $P<0.05$). Also, rural surgeons were more likely to only refer patients if the chance of recurrence is low (urban=47% versus rural=0%, $P<0.05$). No difference existed between urban and rural surgeons with regard to considering health insurance, as most respondents answered “Makes No Difference” (urban=100% versus rural=87%, $P=0.33$). Both groups considered the patient’s acceptance of the mastectomy (urban=50% versus rural=44%, $P=0.24$) and life expectancy (urban=39% versus rural=47% $P=0.08$) as significant factors.

Surgeons who had been in practice <15 years were more likely to agree with the statement, “I am reluctant to damage a healthy part of a woman’s body for breast reconstruction” (14% versus 0%, $P<0.05$) than surgeons in practice >15 years. No other significant differences were found when comparing answers from surgeons in the practice-length groups.

DISCUSSION

A large number of the respondents in our survey (74%) said they routinely discuss breast reconstruction with all of their patients. This number is higher than in a nationwide study performed in Japan in which only 23% of surgeons “usually” gave breast reconstruction material to their patients.² Obviously, the discussion will be different with every patient and knowing what informa-

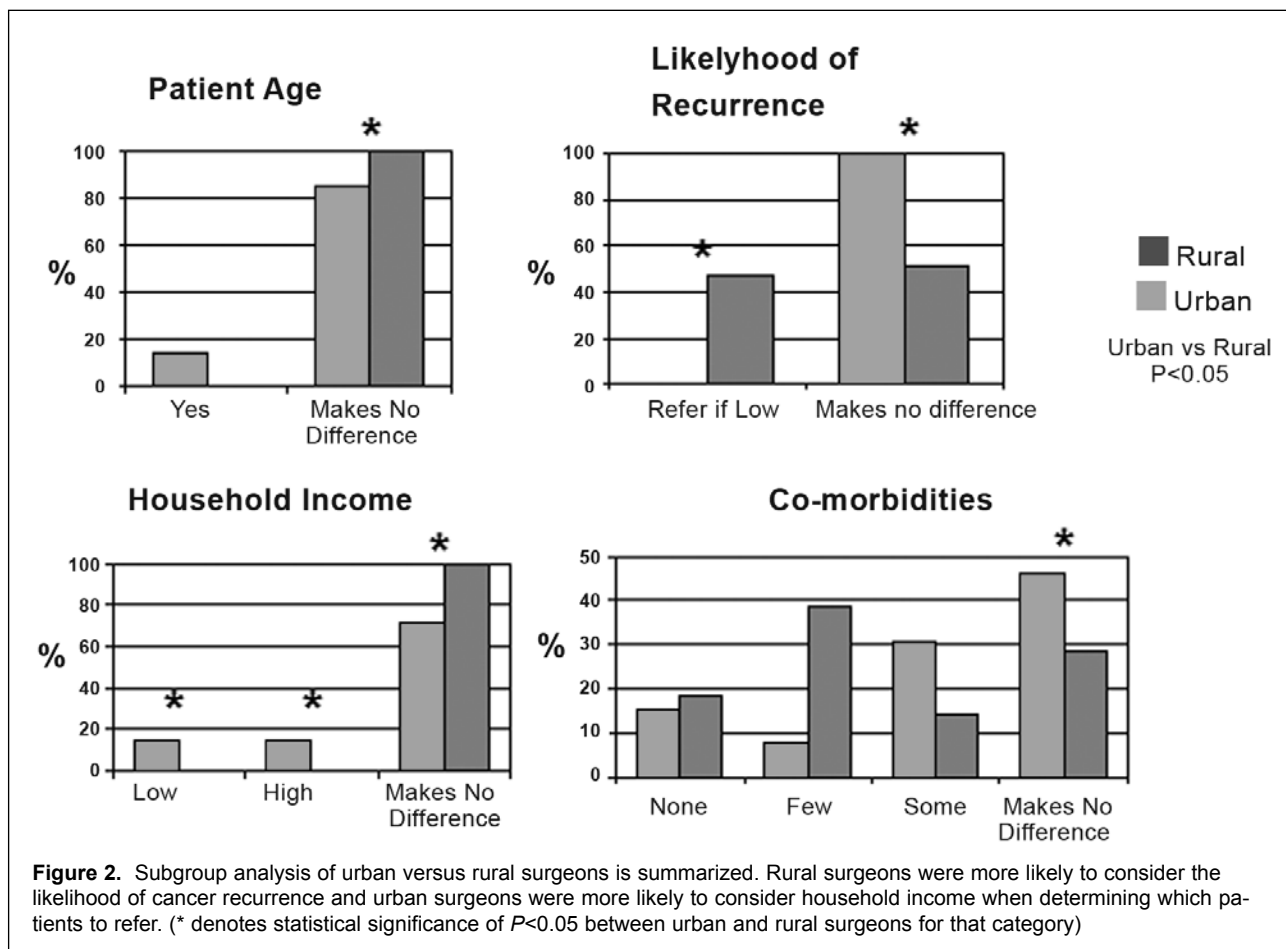
tion is specifically discussed is outside the scope of this study. What we can infer is that there are a large number of potential breast reconstruction patients who are not referred to plastic surgeons, as evidenced by the fact that 33% of general surgeons do not refer all eligible patients. Either the surgeon does not offer the referral to the patient or the patient refuses it once it is recommended. Patient refusal was cited by 62% of surgeons as the primary reason there was no immediate breast reconstruction. Alderman et al found similar results in a study of breast surgeons in which 57% believed that reconstruction is “not important to patients.”⁷ It is easy to understand that surgeon biases and the way the information is presented can affect the patient’s decision to accept the referral.

In the study cited above, the authors performed a similar analysis of breast surgeon attitudes and how they affected referral to plastic surgeons.⁷ They found that high referral surgeons were more likely to be women, to have high clinical breast surgery volume, and to work in cancer centers.⁷

A significant number of surgeons (17%) surveyed only refer patients post-mastectomy, even though the results with immediate breast reconstruction are safe, effective, and give excellent aesthetic results.¹⁰⁻¹¹ There is also a psychological benefit for the patient who receives an immediate reconstruction.¹²

Other reasons cited for post-mastectomy referral included difficulty coordinating a 2-team approach with a plastic surgeon (18%) and having no plastic surgeon available for referral (11%). This may represent the views of rural surgeons who do not have access to plastic surgeons. Improving plastic surgeon’s scheduling flexibility may better serve the reconstructive needs of patients.

Post-mastectomy radiation therapy (PMRT) indications have broadened in the last few years.¹³⁻¹⁴ In this study, respondents cited “need for radiation therapy” as a reason for not referring patients for reconstruction 19% of the time. The usage of PMRT



varies regionally. This variation likely has some effect on referral patterns.

We were surprised that 29% of the general surgeons thought that breast reconstruction masks a local recurrence even though there is evidence to the contrary.¹⁵⁻¹⁷ This number is less than the 47% of general surgeons who thought local recurrences were masked by reconstruction in Takahashi et al's study.² Additionally, 44% of our respondents stated they would only refer patients to a plastic surgeon if the "chance" of a local recurrence was low. Most local recurrences in breast reconstruction patients occur superficially and systemic recurrences are not masked by the reconstruction.¹⁸ Almost half (47%) of the rural surgeons only refer patients if local recurrence chance is low, compared to 0% of urban surgeons who considered this factor. This may be the result of the urban surgeon group representing surgeons at multi-specialty comprehensive breast centers who may practice evidence-based medicine more consistently.

Some general surgeons could be influencing a patient's decision significantly if they believe there is a chance of a local recurrence. Takahashi et al found that general surgeons in Japan needed to be better informed

about breast reconstruction and understand how their own values and biases may effect which of their patients receive breast reconstruction information.² In this study, a significant number of general surgeons only provide breast reconstruction information to patients who are young (37%), if the "chance" of local recurrence is low (44%), or if the patient is concerned about their sexual image (35%).

Patients 55-64 years old get breast reconstruction about half as often as patients 45-54 years old even though breast reconstruction is safe and effective in older patients.¹⁹⁻²⁰ The older patients may have more comorbidities, but cultural biases may also affect this rate. This cultural bias likely also affects the referring general surgeons who are more likely to offer reconstruction to younger patients, as physical appearance may be perceived as less important in older patients. As the United States population ages, these cultural assumptions about breast reconstruction and age may need to change.

In examining surgeons based on length of practice, the only difference found was that younger surgeons

agreed more often with the statement, "I am reluctant to damage healthy tissue for a breast reconstruction." Admittedly, this was a small number of surgeons, since only 5% of the overall survey population strongly agreed or agreed with the statement, but these were all surgeons who had been in practice <15 years. The reason for this is unclear. It may be that referring breast surgeons' views about use of autologous breast reconstruction may change as they get older. It could also mean that younger general surgeons favor tissue expansion with implants over autologous breast reconstruction. There has been a trend for younger, more active patients to favor tissue expansion with implants in recent years due to donor site morbidity concerns. This is also supported by data showing that TRAM flaps have higher rates of abdominal wall weakness and hernias.²¹⁻²³

Several comments were received with the survey responses. Some had to do with the type of reconstructions available such as, "I have very few patients who would benefit from a TRAM," and others demonstrated biases, such as, "Most women having mastectomy are either elderly or have bad disease." Others gave insightful comments such as, "...patients who go into reconstruction fully informed of the results have excellent outcomes."

Limitations to our study include problems that occur with any survey research. There is an inherent selection bias, and our results could be skewed by a high number of nonresponders. We had a 36% response rate from a statewide general surgeon population. Our high nonresponse rate is probably at least in part due to the fact that many of these surgeons do not practice breast surgery and therefore did not respond to the mailed survey. We had a response rate of 84% male and 16% female, which is similar to the population makeup of general surgeons in Wisconsin (89% male, 11% female, data from Wisconsin Medical Society). The data is also susceptible to recall bias since we are asking questions about volume of breast surgery performed and practice habits and values. Our response rate was only 36%, and we did only include breast surgeons in Wisconsin. Wisconsin has a heterogeneous population of urban and rural surgeons. As Takahashi et al pointed out in their study, a low response rate might reflect an underestimation of the passive attitudes that are held about breast reconstruction.² We did not study how practice barriers and practice management issues might effect breast reconstruction utilization. The above factors may influence referral patterns.

CONCLUSIONS

Breast reconstruction rates remain low despite proven safety and patient satisfaction. General surgeons in the current study report that patient refusal accounts for a large proportion of the eligible patients who go without reconstruction. Referring general surgeons have biases that affect the discussions they have with patients about reconstruction. There are also likely patient biases that affect reconstruction utilization that need to be further studied. Additionally, plastic surgeons need to educate our colleagues and be more available for breast reconstruction procedures.

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