Advances in Breast Cancer

Trends in Breast Reconstruction After Mastectomy

By Michael Broder, PhD
Reviewed by Vrunda Desai, MD, Assistant Professor of Obstetrics, Gynecology, and Reproductive Sciences, Yale Medical School, New Haven, CT

The surgical management of breast cancer, including breast reconstruction after mastectomy, has changed markedly in recent decades.[1] "Surgical management of breast cancer has evolved from radical surgery to minimal invasive surgery with incorporation of the concept of oncoplastic surgery," said Raghavan Vidya, MD, honorary senior lecturer at Birmingham University and consultant in Oncoplastic Breast and General Surgery at Royal Wolverhampton NHS Trust in West Midlands, England. "Care management has become multidisciplinary, with surgery at the center and allied specialties such as radiotherapy, oncology and immunotherapy aiding in disease treatment," explained Dr. Vidya.

A number of options are available for breast reconstruction after mastectomy.[2] Alloplastic methods include silicone and saline implants, with or without tissue expander. Most autologous breast reconstruction is performed using a transverse rectus abdominis muscle (TRAM) flap. The TRAM flap may be pedicled or free. Other techniques utilize a deep inferior epigastric perforator (DIEP) flap or a latissimus dorsi (LD) flap.

In a recent study designed to assess recent trends in breast reconstruction after mastectomy, Ilonzo and colleagues used data from the American College of Surgeon's National Surgical Quality Improvement Program (ACSNSQIP). The

Take Note

- The percentage of patients undergoing surgical reconstruction after mastectomy for breast cancer increased significantly over the past decade.
- Flap-based reconstruction was associated with greater rates of wound, bleeding, and infectious complications compared with alloplastic implants with or without tissue expander.
- In a multivariate analysis, factors associated with increased wound complications included overweight or

study evaluated factors predicting whether patients would choose breast reconstruction and compared immediate postoperative outcomes among the available reconstruction techniques as well as identified risk factors related to complications.[1]

obesity, American Society of Anesthesiologists Classification of Class III or IV, diabetes, and smoking.

The researchers identified women who had unilateral mastectomies between 2005 and 2014 followed by either alloplastic (implant) or autologous breast reconstruction using methods including immediate implant, tissue expander, free flaps, TRAM flaps, and LD flaps. During this 10-year period, 67,450 women underwent mastectomy. Of these women, 62.42% opted out of reconstructive surgery. Women who did not elect reconstruction tended to be about 10 years older (mean age of 62.27 years) than women who did choose reconstruction.[1] The proportion of women with an American Society of Anesthesiologists (ASA) classification of III (indicating severe systemic disease)[3] was almost twice as high among those who did not have reconstruction (43.38%) as those who did have reconstruction (19.53% to 25.52%), a statistically significant difference ($P < 0.01$). The patients who chose not to undergo reconstruction had significantly higher rates of hypertension, coronary artery disease, diabetes, and neurologic defects.[1]

While most patients chose not to have reconstructive surgery, the researchers nevertheless found more women choosing reconstruction over time, with 26.94% of women having undergone reconstruction in 2005 versus 43.3% in 2014, a significant difference ($P < 0.01$).[1] (Interestingly, this is the same rate of women choosing breast reconstruction after mastectomy found in a previous study that evaluated data from a single university-based public hospital from 2001 to 2009.)[4]

This increase in the choice to undergo reconstruction may be due to the increased use of tissue expanders, which increased from 15.54% in 2005 to 33.3% in 2014. There was a significant increase in the use free flap (from 1.25% in 2005 to 3.96% in 2014, $P < 0.01$); a less significant increase in the use immediate implants (from 3.2% in 2005 to 5.0% in 2014, $P = 0.012$); and a nonsignificant increase in LD flaps ($P = 0.07$). The rate of TRAM flaps decreased significantly, from 5.8% in 2005 to 1.2% in 2014 ($P < 0.01$). Overall, fewer autologous flap reconstructions than implant reconstructions were performed over the decade evaluated. The proportion of autologous reconstructions decreased from 34.42% in 2005 to 14.57% in 2014 ($P < 0.01$). Implant reconstruction with tissue expander is currently the most common type of reconstruction after mastectomy.[1]

Significantly more complications occurred following autologous flap-based reconstruction than other types—5.6% for wound, 1.8% for infection, and 6.8% for bleeding ($P < 0.01$). When comparing complications between tissue expander and immediate implant reconstruction, there were no significant differences for the rate of wound (4.4% vs 3.9%), infection (0.8% vs 0.7%), or bleeding (0.8% vs 0.6%). Despite the 10-year trend toward more breast reconstructions after mastectomy, the overall rate of complications from wound and infection have not changed: the rate of wound complications was 2.0% in 2005 versus 1.9% in 2014; that of infection was 1.8% in 2005 and 1.0% in 2014.[1]

According to multivariate analysis, a number of independent factors were associated with increased wound complications regardless of the type of reconstruction performed. These included being overweight (odds ratio [OR] 1.38, confidence interval [CI], 1.23-1.55), obese (OR 2.11, CI, 1.89-2.35), or morbidly obese (OR 3.84, CI, 3.34-4.43); being ASA Class III (OR 1.35, CI, 1.08-1.69) or ASA Class IV (OR 1.49, CI, 1.06-2.10); being diabetic (OR 1.28, CI, 1.14-1.43); or smoking (OR 1.76, CI, 1.59-1.94). In addition, use of TRAM flap was associated with an increased risk of wound complication (OR 1.87, CI, 1.28-2.75).[1]

The pace of development in breast reconstruction surgery has far-reaching implications worldwide. “New treatments and advances in surgery are evolving rapidly and it is important for clinicians caring for women facing breast reconstruction after mastectomy to monitor the progress of new surgical and medical interventions,” explained Dr. Vidya. “Hence, it is important to collaborate with our colleagues around the world, collate data, and advance surgical care,” he added.

Published: 04/12/2017

References:

1. Ilonzo N, Tsang A, Tsantes S, et al. Breast reconstruction after mastectomy: a ten-year analysis of trends and immediate postoperative outcomes. *Breast*. 2016;32:7-12.
2. Rolph R, Mehta S, Farhadi J. Breast reconstruction: options post-mastectomy. *Br J Hosp Med (Lond)*. 2016;77:334-342.
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4. Levine SM, Levine A, Raghubir J, et al. A 10-year review of breast reconstruction in a university-based public hospital. *Ann Plast Surg*. 2012;69:376-379.

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Body Image and Self-Esteem in Women With Breast Cancer

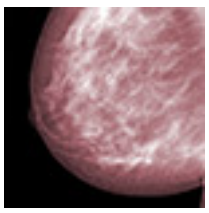
A study of women's feelings about their bodies and their overall self-esteem sheds light on the challenges posed by breast cancer treatment.

Breast Cancer News

Are your high-risk breast cancer patients getting the necessary genetic testing and counseling? Racial disparities are diminishing in at least some geographic areas. What do you need to know about changes in breast density after HRT initiation?

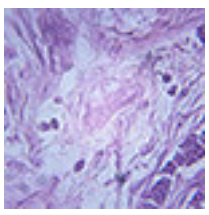
Do Neighborhood Environmental Factors Impact Breast Cancer Risk?

Do neighborhood environmental factors—such as socioeconomic level and access to nutritious foods—contribute to an increased breast cancer risk?



Mammographic Breast Density Not Associated with Breast Cancer Risk in Women with Atypical Hyperplasia on Breast Biopsy

Women with either high mammographic breast density (MBD) or atypical hyperplasia (AH) are at increased risk for developing breast cancer, but few studies have evaluated the possibility of using MBD to stratify risk in women with AH. A recent study sheds some light on the question of whether MBD measures are important for management decisions in women with AH.



Screening and Diagnostic Tests for Breast Cancer

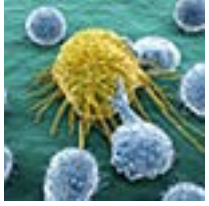
Breast cancer screening starts with risk assessment and involves a number of components, from family history to a variety of imaging tools.

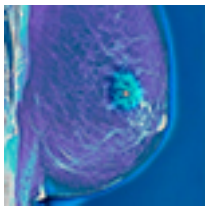
Is There Value in This Test for Certain Breast Cancer Patients?

Early-stage breast cancer patients with discordant clinical and genomic risk were randomly assigned to receive or not receive adjuvant chemotherapy, based in part on the results of the 70-gene signature MammaPrint test. For those with high clinical but low genomic risk, the group forgoing chemotherapy had a 94.7% average 5-year survival rate without distant metastasis.

Case Study: Neoadjuvant Treatment of Locally Advanced and Early HER2-positive Breast Cancer

This case illustrates how a patient with stage II or III HER2-positive breast cancer may benefit from neoadjuvant dual HER2 blockade plus chemotherapy in terms of complete pathologic remission.





Breast Cancer: Risk Factors

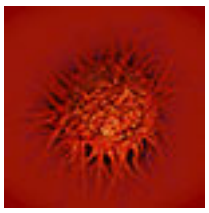
Breast cancer is the most prevalent cancer in women in the United States. Many influences increase risk for this cancer including familial criteria, lifestyle factors, and genetic mutations.

Contralateral Prophylactic Mastectomy: It's Increasing, But Is Survival Improving?

A triple-digit increase in the rate of contralateral prophylactic mastectomies has been reported. This trend is occurring despite inconclusive evidence of improved survival with surgery.

Breast Cancer, Radiation Therapy, and Ischemic Heart Disease

Modern radiotherapy has significantly improved survival rates for breast cancer, but clinicians need to be aware that it also may increase the risk of ischemic heart disease.



No Escape: Targeting the Brain as a Sanctuary for Breast Cancer Metastases

As systemic therapies for HER2-positive metastatic breast cancer have improved, the progression of neurologic disease has become an increasingly important source of morbidity and mortality. The brain may be a unique sanctuary for metastatic cancer in this subset of patients, so new avenues of research include the use of novel chemotherapeutic agents and combination strategies that might more specifically target breast cancer metastases in the brain.

Pause Button: Metastatic Dormancy in Breast Cancer

Recent findings about the role of neovascular tips in promoting or inhibiting metastasis in breast cancer may help us understand more about the triggers that end metastatic dormancy.

The Elusive Goal of Predicting Bone Metastasis in Primary Breast Cancer

In an era in which treatment is increasingly being tailored to individual tumor and patient characteristics, researchers still struggle to identify patients with early-stage breast cancer at high risk for bone recurrence.

Optimal Pain Management in Metastatic Breast Cancer: Opioid Rotation

Opioids are a mainstay of pain management for patients with metastatic breast cancer. For patients who develop tolerance to opioid therapy, however, pain management may be improved via opioid rotation.

Any Role for Breast Surgery in Stage IV Disease?

In light of new data, the debate about the benefit of locoregional treatment in women presenting with metastatic breast cancer continues and is far from resolved.

Risk-reducing Interventions in Carriers of BRCA Mutations

The combination of genetic counseling, testing, and interventions to reduce the incidence and mortality associated with breast cancer in carriers of BRCA mutations is a complex undertaking associated with diverse benefits and risks. The decision-making process requires careful interpretation of information, assessment of risks and benefits, and collaboration between women and their clinicians.

Optimizing Quality of Life for Metastatic Breast Cancer Patients

Optimal management of metastatic breast cancer includes palliating symptoms that affect a patient's quality of life.

Biomarkers and Personalized Therapy for Metastatic Breast Cancer

New research initiatives are assessing the value of circulating tumor cells in response to metastatic breast cancer treatments. The goal: improve the delivery of personalized therapy.

Therapeutic Vaccines for Metastatic Breast Cancer

Recent clinical trials suggest that vaccine therapy for metastatic breast cancer holds some promise. Ongoing trials continue to refine the type and timing of a variety of novel vaccines, with and without adjuvant therapies.

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