Reconstruction of the Breast Following Mastectomy

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Objectives: *To review immediate and delayed breast reconstructive options following surgery for high-risk or cancer-related unilateral or bilateral mastectomy and examine restorative interventions to promote a positive body image and long-term survivorship.*

Data Sources: *Review of PubMed, Scopus, and Cochran Review.*

Conclusion: *For women facing mastectomy, a consultation with a plastic/reconstructive surgeon is a first step toward recovery with restoration of a missing body part. Nursing interventions are integral to physical and psychosocial healing.*

Implications for Nursing Practice: *An understanding of the reconstructive process can be beneficial in the care of women facing and recovering from a mastectomy. Psychological and physical issues occur whether the woman is undergoing bilateral prophylactic mastectomies for a high-risk condition or mastectomy as treatment for a malignant tumor.*

Key Words: *Breast reconstruction, implant-based reconstruction, tissue expansion, alloplastic breast reconstruction, autologous breast reconstruction, perforator flap*

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In our society breasts are dominant factors of female beauty and sexuality. A woman's body image and self-esteem can be negatively affected by any alteration in her natural form.[1] Surgery with unilateral or bilateral mastectomies may be necessary to save a woman's life, but for many women these events can be traumatic, both physically and psychologically. Women with increased risk factors must remove all breast tissue to significantly reduce their risk of breast cancer, while those women with breast cancer often face unilateral or bilateral mastectomies to treat their disease.[2]

The frequency of contralateral prophylactic mastectomy has dramatically increased in women with unilateral breast cancer, even when there are no specific increased risks or evidence of disease in the contralateral breast.[3] Likewise, the number of prophylactic mastectomies have significantly increased.[4,5] In a review of 85,401 women diagnosed with breast cancer from 2005 to 2011, 40% of women chose mastectomy in 2005 compared with 51% in 2008 that chose bilateral mastectomy and immediate reconstruction ($P > 0.001$) to treat their unilateral breast cancer.[5] Independent predictors of mastectomy included younger age, Asian race, invasive cancer (*vs.* ductal carcinoma in situ), bilateral mastectomy, axillary dissection, and lower body mass index (BMI; $P < 0.001$).[5] A significant increase ($P < 0.001$) in prophylactic mastectomy, mastectomy (e.g., instead of breast conserving surgery), bilateral mastectomy (e.g., only one breast affected with cancer), and immediate reconstruction was observed from 2005 to 2011.[5]

In-depth interviews of 29 breast cancer survivors found that women's fear of breast cancer permeated their surgical treatment decision-making.[6] Their overriding mediating factor included experiences shared by friends and family members already living with cancer, with an overestimated risk of recurrence, development of contralateral breast cancer, or even death.[6] Despite extensive discussion with their surgeon about their option of breast-conserving surgery (e.g., lumpectomy), women could not be swayed by facts and many still chose mastectomy with contralateral prophylactic mastectomy and immediate reconstruction.[6] In choosing this regimen, women were certain they would eliminate recurrence of their cancer, guarantee no chance of contralateral breast cancer, and live longer compared with breast-conserving surgery alone.[6]

In women facing unilateral or bilateral mastectomy, referral to a plastic/reconstructive surgeon should be arranged to discuss reconstructive options (Table 1). Breast reconstruction can help regain physical and emotional wholeness.[1] The Women's Health and Cancer Rights Act of 1998[7] mandates unrefuted insurance coverage for immediate or delayed breast reconstruction to correct defects following unilateral or bilateral mastectomies. This mandate also includes contralateral breast matching procedures such as mastopexy for bulk reduction or cosmetic lift to correct ptosis.[7]

Some women may express disinterest in potential reconstruction. However, a consultation with a plastic surgeon may still be helpful to help women better understand their body and potential restorative options in the event that future reconstruction is desired. During the initial visit the woman will be provided with several potential reconstructive options depending on body habitus,[8] nature of disease, age, and pre-existing or potential comorbid conditions. Inclusion of family members, especially significant others, can help the patient process information and gain support during the reconstructive journey.

Timing of Reconstruction

Timing options have advantages and disadvantages whether reconstruction is immediate (e.g., occurs at time of mastectomy) or delayed to a later date.[9] Immediate reconstruction can assist the woman and her partner with the emotional impact of an altered body image as the partially or fully reconstructed breast is observed soon after surgery. When reconstruction occurs early in the cancer trajectory, the final cosmetic appearance may ultimately be enhanced if a skin-sparing mastectomy is performed at the initial surgery with salvage of the majority of skin for use in the reconstructive procedure.[9,10] Combining the reconstruction and mastectomy into one operative procedure can also potentially lower the total cost of surgery and may reduce the overall number of subsequent reconstructive surgical procedures.[11]

Immediate Reconstruction

Immediate reconstruction may have positive psychological implications compared with delayed reconstruction: decreased distress, improved freedom of dress, better body image and self-esteem, decreased anxiety and depression, and improved sexual feelings of attractiveness and satisfaction.[10-12] Immediate reconstruction should not delay planned adjuvant therapies (e.g., chemotherapy or biotherapy) unless wound healing is delayed or an infection occurs.[10-12] In contralateral mastectomies and immediate reconstruction, the procedure is inherently greater with a longer period of general anesthesia, increased wound size and healing time, and potential debridement procedures to improve healing. In obese women, postoperative morbidity, donor