

Practice Parameters

Breast Reconstruction Following Diagnosis and Treatment for Breast Cancer

I. BACKGROUND/RESEARCH

The most common reason for breast reconstruction is to repair defects caused by breast cancer.^{1,2} Breast cancer is the second most frequently occurring cancer in the United States.³ A woman has a 12.5% lifetime risk of developing breast cancer and a 3.5% lifetime risk of dying from the disease.^{1,4} This risk generally increases with age. If she develops an invasive or in situ breast cancer, her risk of developing a second cancer in either breast increases by 0.5 to 1.0% per year.

Approximately 5% to 10% of breast cancers are believed to be inherited, and as many as half of these are related to two breast cancer susceptibility genes, BRCA1 and BRCA2.⁵

Although uncommon, breast cancer also occurs in men. This accounts for less than 1% of all breast cancers. (www.nci.nih.gov/cancerinfo) A complete discussion of the relationship of these genes to breast cancer can be found in the American Society of Plastic Surgeon's Practice Parameter on Prophylactic Mastectomy.

Many women find that surgical reconstruction of the missing breast is an essential component in their recovery from cancer. Similarly, reconstruction of the opposite breast to provide symmetry and balance is an integral part of this process.

II. DIAGNOSTIC CRITERIA

The patient usually presents to the reconstructive surgeon's office with a history of prior diagnosis and/or treatment for breast cancer. Patients who have had breast cancer may have had only a biopsy of the mass, a lumpectomy, or a simple mastectomy (alone or with axillary lymph node sampling or removal). Any of these surgical treatments may have been supplemented with radiation treatment to the breast and/or regional lymph nodes. Other cancer related treatments may include a modified radical mastectomy, chemotherapy and/or radiation, which may have an effect on the reconstructive site.^{9,10}

Physical examination of the breast defect should include documentation of the size and configuration of the missing tissue. The presence of scarring, radiation changes, the condition of the pectoralis major muscle, nipple-areola complex and the contralateral breast is always noted as well.

III. TREATMENT

The type of breast reconstruction surgery is dependent on the nature of the defect and the overall health of the patient. Various surgical techniques can be used for the treatment of malignant conditions.

A mastectomy is one alternative to remove the malignant lesion.⁹ Mastectomies can be total (removing all the breast tissue) or partial (removing a portion of the breast tissue). Reconstruction of a surgical defect caused by the removal of a breast cancer can be done at the time that the cancer is removed (immediate reconstruction) or any time thereafter (delayed reconstruction).¹¹ The timing may be dependent on the need for additional treatment for malignancy, including chemotherapy and/or radiation. Furthermore, mastectomies can be skin-sparing or not skin-sparing. Skin-sparing mastectomies are generally performed for smaller and less invasive breast cancers, and offer a better cosmetic result for immediate breast reconstruction.

A lumpectomy is a surgical alternative to mastectomy and is almost always combined with subsequent radiation treatment. It is generally used for lesions that are less than 4 cm in size. However, some patients who undergo a lumpectomy still need reconstructive surgery because of the defect created during surgical removal. The defect can vary significantly due to the size of the original tumor, the shape of the incision and the side effects of radiation used after lumpectomy.

Reconstruction of the breast mound itself will require the use of a breast implant, autologous tissue, or both. The choice of surgical technique will depend on many factors, including the nature of the defect, the amount of tissue available for reconstruction, the underlying musculature, and the radiation history. Other factors in the patient's history will impact these choices such as age, other diseases such as diabetes, and the use of nicotine.

If a breast implant is used, there must be sufficient skin left on the chest wall after surgery to cover the implant and sufficient underlying muscle to support it. When this skin is tight or insufficient it can be expanded or stretched by use of a tissue expander prior to placing a permanent implant. The tissue expander is itself a temporary prosthesis and in its position beneath the skin and/or chest muscle will, over time, stretch the overlying tissue as saline is injected incrementally over weeks to months. Once expansion is complete, the expander is removed and a permanent implant can be put in its place at a second surgery.



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The transverse rectus abdominus muscle (TRAM) flap is performed if a patient is not a candidate for tissue expansion and breast implant, or if the patient wishes to have only autologous tissue used.¹³ The TRAM flap can be either pedicled (using its inherent blood supply from a single artery and vein) or a free tissue transfer. The choice of performing a TRAM flap is dependent on the patient's overall health, the quality and quantity of the lower abdominal tissues, prior abdominal surgery, and smoking history. When a patient is at risk for flap complications from having a pedicled TRAM, delaying the TRAM flap or choosing free tissue transfer of the TRAM are options. In the delay procedure, the more dominant blood supply to the flap, the deep inferior epigastric artery, is ligated to increase blood from the deep superior epigastric artery. This procedure opens up small vessels in regions of the flap and makes the flap more hearty. The final surgery which is usually done one to three weeks later is less risky due to the artificially created more robust blood supply. The free TRAM tissue transfer involves completely disconnecting both blood supplies and reconnecting the more dominant deep inferior epigastric artery using microvascular techniques.

Another local muscle flap is the latissimus dorsi muscle. This muscle, taken from the back and side of the patient with some overlying back skin, can be used to restore the breast or to cover an implant. Often the latissimus muscle alone is not adequate to create a breast mound and an implant must be used to achieve volume. This flap is a good choice for patients who are not TRAM candidates or those who wish to have an implant with a history of prior radiation. It can also be used as a secondary treatment when local complications on the chest wall require additional tissue.

Other flap techniques that may be used for breast reconstruction are free tissue transfers including the superior gluteal flap, the lateral thigh flap, the deep inferior epigastric perforator (DIEP) flap,¹⁴ and the Rubens flap.¹⁵ These flaps are generally utilized only when the first line choices cannot be used.

Skin sparing mastectomy (removal of breast tissue only) and immediate breast reconstruction may be appropriate for certain early stage cancers. Research has shown this to be effective and without increased risk of recurrence.

Usually the opposite breast will require treatment to achieve balance and symmetry with the reconstructed side. This is undertaken at the time when the final mound configuration is mature and can include a lifting of the breast through skin removal (mastopexy) or complete reduction of both skin and breast tissue (reduction mammaplasty). When the opposite breast remains smaller than the reconstructed breast placement of a small implant on this side can achieve symmetry as well.

Follow-up care for breast reconstruction includes serial office visits for drain removal, suture removal, and assessment of wound healing during the first 4-6 weeks. If a tissue expander is being used, infusions of saline through an implanted port may take place as often as twice a week. Beyond that period, less frequent serial office visits are required to assess continued healing, appearance, scar maturation and patient satisfaction.

Additional surgery for nipple reconstruction is usually delayed until the breast mound surgery has been finalized and the shape has matured. This surgery is usually undertaken as an outpatient surgery and can include local tissue rearrangement of grafts. Final pigmentation of the nipple can be achieved through tattoo techniques that adjust the color to the patient's opposite nipple or skin type.

It is not uncommon for secondary surgery to be done to adjust the mound, the opposite breast or the final nipple reconstruction. These procedures are generally performed as an outpatient and result in high patient satisfaction from the overall result.

Provider Qualifications

The individual performing this procedure, regardless of the location of the surgical facility, should have fully approved hospital privileges for this procedure and be qualified for examination or be certified by a surgical Board recognized by the American Board of Medical Specialties®, such as The American Board of Plastic Surgery, Inc.®

IV. DISCLAIMER

Practice parameters are strategies for patient management, developed to assist physicians in clinical decision making. This practice parameter, based on a thorough evaluation of the scientific literature and relevant clinical experience, describes a range of generally acceptable approaches to diagnose, manage, or prevent specific disease or conditions. This practice parameter attempts to define principles of practice that should generally meet the needs of most patients in most circumstances.

However, this practice parameter should not be construed as a rule, nor should it be deemed inclusive of all proper methods of care or exclusive of other methods of care reasonably directed at obtaining the appropriate results. It is anticipated that it will be necessary to approach some patients' needs in different ways. The ultimate judgement regarding the care of a particular patient must be made by the physician in light of all the circumstances presented by the patient, the diagnostic and treatment options available and available resources.

This practice parameter is not intended to define or serve as a standard of medical care. Standards of medical care are determined on the basis of all the facts or circumstances involved in an individual case and are subject to change as scientific knowledge and technology advance and as practice patterns evolve. This practice parameter reflects the state of knowledge current at the time of publication. Given the inevitable changes in scientific information and technology, periodic review, updating and revision will be done.

V. CODING

- A. Malignant neoplasm of female breast
- B. Malignant neoplasm of male breast
- C. Personal history of malignant neoplasm of breast
- D. Acquired absence of breast

For surgery of the opposite breast

- A. Macromastia
- B. Breast Asymmetry
- C. Ptosis

Procedure

- A. Mastopexy
- B. Reduction mammoplasty
- C. Mammoplasty, augmentation; without prosthetic implant
- D. With prosthetic implant
- E. Immediate insertion of breast prosthesis following mastopexy, mastectomy or in reconstruction
- F. Delayed insertion of breast prosthesis following mastopexy, mastectomy or in reconstruction
- G. Nipple/areolar reconstruction
- H. Breast reconstruction, immediate or delayed, with tissue expander, including subsequent expansion
- I. Breast reconstruction with latissimus dorsi flap, with or without prosthetic implant
- J. Breast reconstruction with free flap
- K. Breast reconstruction with other technique
- L. Breast reconstruction with transverse rectus abdominis myocutaneous flap (TRAM), single pedicle, including closure of donor site
- M. With microvascular anastomosis (supercharging)
- N. Breast reconstruction with transverse rectus abdominis myocutaneous flap (TRAM), double pedicle, including closure of donor site
- O. Open periprosthetic capsulotomy, breast
- P. Periprosthetic capsulectomy, breast
- Q. Revision of reconstructed breast
- R. Preparation of moulage for custom breast implant
- S. Unlisted procedure, breast

ICD-9

- 174.0 – 174.9
- 175.0 & 175.9
- V10.3
- V45.71

- 611.1
- 611.8
- 611.8

CPT Code

- 19316
- 19318
- 19324
- 19325
- 19340
- 19342
- 19350
- 19357
- 19361
- 19364
- 19366
- 19367
- 19368
- 19369
- 19370
- 19371
- 19380
- 19396
- 19499

VI. REFERENCES

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