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Autologous versus Prosthetic Breast Reconstruction

By *Susha Cheriyaedath, MSc*

Following a mastectomy, breast reconstruction may be performed using (1) prosthetic implants made of either saline or silicone or (2) autologous tissue, which means tissue taken from elsewhere in the patient's body. Today, prosthetic reconstructions are more popular than autologous reconstruction.

Autologous Breast Reconstruction

In autologous breast reconstruction, a portion of tissue possessing its own skin, blood vessels, fat, and muscle, called a 'flap', is dissected carefully from another part of the patient's body. This vascularized flap is then used to rebuild the affected breast. Flaps may be taken from different parts of the body such as the lower abdomen, back, thighs, or buttocks.

Based on the composition of the flaps and the body part they are taken from, autologous breast reconstruction is classified into many types such as:

- TRAM flap
- DIEP flap
- SIEA flap
- Latissimus dorsi flap
- SGAP flap/hip flap
- IGAP flap
- TUG flap
- PAP flap
- stacked DIEP flap
- body lift perforator flap
- stacked/"hybrid" GAP flap
- fat grafting

Flaps may be either free or pedicled. Pedicled flaps are introduced into the breast area along with the accompanying blood vessels. In contrast, free flaps comprise only the tissue, which has been separated from the supplying blood vessels. They need to attach to the blood vessels present in the breast area.

Prosthetic Breast Reconstruction

Prosthetic breast reconstruction involves the insertion of implants under the skin left behind in the breast area after a mastectomy. Two types of implants are available – implants filled with saline or those filled with silicone gel. Sometimes a combination of these two is also used, with silicone as the outer layer and saline inside.

Stages of Prosthetic Breast Reconstruction

Breast reconstruction is usually a two-stage procedure. First, an expander placed under the chest muscles of the patient is gradually filled with saline. This requires multiple hospital visits post-surgery. In the second stage, the device is taken out and replaced with an implant once the tissue overlying the chest wall is healed. This may be anywhere between 6 weeks and 6 months after the surgical removal of the breast. Sometimes there is a third stage, which involves rebuilding a nipple.

Implants are a good option for women who are thin and lack extra tissue in other parts of the body which could be used for flap reconstruction. Although the use of an implant involves less surgery than is required for flap reconstruction, it is a multi-step process and may even require more surgeries later. This is because no implant lasts forever, and if it breaks down or migrates, it can create issues in the long term.

Factors Affecting the Choice of Reconstruction Method

Factors such as the age of the woman, her health status, the size and shape of the breast that needs reconstruction, the location of the tumor, and the availability of extra tissue in the woman's body, all influence the decision on the type of reconstruction that needs to be done for a patient.

Although most women are free to choose any of the breast reconstruction methods, depending on what they are comfortable with, there are also certain medical issues to consider during this process. For instance, if a woman is likely to need radiation therapy following mastectomy, an implant is not a good idea because of the high possibility of radiation-induced implant damage. Even if an autologous reconstruction is decided upon, the skin may be damaged by radiation. Thus, it is recommended that the patient talk to her oncologist and reconstructive surgeon before deciding on the type of reconstruction.

Prosthetic vs. Flap Reconstruction - Comparison

Reconstructive surgery using implants are less complex than flap reconstructions as they involve only one site, namely, the chest. On the other hand, flap reconstruction involves creating a detachable flap of tissue from another site and then attaching it to the breast area. However, prosthetic reconstruction involves multiple stages and takes a longer period for completion.

Prosthetic reconstruction uses the same incision that was made during the mastectomy procedure. Flaps create new incision sites and so give rise to new scars. A disadvantage of using implants is that they may give the recreated breast an artificial look. Also, implants are not a permanent solution as they tend to rupture or create other issues over the long term.

Reviewed by Dr. Liji Thomas, MD.

References

- <http://www.mayoclinic.org/tests-procedures/breast-reconstruction/basics/what-you-can-expect/prc-20020499>
- <http://www.cancer.gov/types/breast/reconstruction-fact-sheet>
- <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2464250/>
- <http://www.breastcancer.org/treatment/surgery/reconstruction/types/autologous>
- <http://www.breastcancer.org/treatment/surgery/reconstruction/types/implants>

Further Reading

- [Types of Autologous \(Flap\) Breast Reconstruction](#)

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