

Autologous Tissue Implants

*Offer Many Benefits
for Patients Requiring
Breast Reconstruction*

By Scott P. Edwards

Breast reconstruction using a patient's own tissue is becoming increasingly popular and may help ease the emotional burden of losing a breast.

While the decision to have a mastectomy is never easy, breast reconstruction options using a patient's own tissue are becoming increasingly popular and may help ease the emotional burden of losing a breast.

Breast reconstruction using autologous tissue—the patient's own tissue—has become a common option for women considering reconstructive surgery. These flap procedures produce a reconstructed breast that maintains a natural consistency, which is difficult to produce with breast implants alone.

John Nigriny, MD, a plastic and reconstructive surgeon with Baystate Plastic Surgery who completed a microsurgery fellowship at M.D. Anderson Cancer Center and plastic surgery training at Stanford University, says natural tissue does not expose patients to the risk of foreign materials in breast implants and gives the breast a more natural shape and feel. "The symmetry is better because it is easier to match a natural breast to one reconstructed with a patient's own tissue than it is to match a natural breast to an implant," he says.



*John Nigriny, M.D.
Plastic Surgery*

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Three Options

Surgeons have three routes for breast reconstruction: an autologous flap, a breast implant and tissue expander, or an autologous flap/breast implant combination. A breast implant is a teardrop-shaped silicone shell that is filled with silicone gel to give the breast its size and shape. Tissue expansion is a procedure in which skin and soft tissues in the chest are stretched to make room for the implant. A hybrid flap/implant procedure is typically performed on patients with minimal abdominal tissue or certain contraindications that make autologous tissue or implant reconstruction alone difficult or risky to perform.

“Implants,” says Dr. Nigriny, “are harder to match in a unilateral reconstruction; it’s hard to match a breast implant to a natural breast. The value of implants goes up with bilateral reconstruction, because we’re matching like with like.”

Autologous reconstruction offers several advantages. Because the patient’s own tissue is used, the body will not reject the transferred tissue or incur the risk of a foreign body, such as a breast implant. In addition, the newly reconstructed breast will change in volume with natural body weight fluctuations and may improve in shape over time. And while all three options are equivalent in terms of creating adequate volume to match both breasts when patients are clothed; when unclothed, the autologous flap provides a more natural look.

Dr. Nigriny is currently the only plastic surgeon in the region offering the free flap procedure.

Autologous Tissue Procedures

To reconstruct breasts using the patient’s own living tissue, a flap, typically the rectus abdominis muscle, is removed and used to recreate the new breast using one of two surgical methods: pedicle flap surgery or free flap surgery.

In a pedicle flap procedure, the surgeon uses the rectus muscle attached at its upper end as a carrier for the blood vessels that supply the skin between the belly button and the pubic hair line. The surgeon then creates a new breast mound by tunneling the tissue beneath the skin into the mastectomy site.

A free flap procedure, on the other hand, involves completely disconnecting the tissue from its blood supply and using microsurgical techniques to reattach the flap blood vessels to new blood vessels in the chest. “This is akin to an organ transplant to yourself,” says Dr. Nigriny, who is currently the only plastic surgeon in the region offering the free flap procedure.

“The disadvantage with the pedicle flap procedure,” says Dr. Nigriny, “is that we have to take the entire muscle from the abdomen, which creates abdominal weakness and can increase the risk of back pain and hernia. We’re essentially removing a strength layer from the abdomen.”

While the surgeon determines which method is best suited for each individual patient, transverse rectus abdominal muscle (TRAM) and deep inferior epigastric perforator (DIEP) flaps are the most common free flap procedures. A pedicled TRAM flap uses the entire rectus muscle to reconstruct the breast, while a free TRAM flap uses only a small portion of the muscle.

Dr. Nigriny says the TRAM flap procedure was developed about 35 years ago as a pedicle and has, over time, evolved to become a free flap. “There are variations to the procedure,” he adds, “but we try to spare as much muscle as we can from the abdominal wall to decrease morbidity.”

The DIEP flap is similar to the muscle-sparing free TRAM flap, but uses only skin and fat rather than muscle. Minimal abdominal tissue is taken with this approach, so more strength is retained in the patient’s abdomen.

Other types of flap procedures use the latissimus dorsi muscle from the upper back or the gluteal muscle in the buttocks.

Outcomes

Patient outcomes following free flap procedures are generally good, says Dr. Nigriny, with on average a 96 percent success rate reported nationally.

“Regardless of the procedure used to reconstruct a breast, the time the patient invests is the same,” he says. The procedure for artificial implants is faster in the operating room, with a typical procedure taking an hour in the operating room and a one to two day hospital stay. However, patients then require multiple smaller operations over time to complete the reconstruction, and many more office visits to fill the tissue expander over time prior to exchanging it for the final breast implant.

With autologous flap reconstructions, 95 to 99 percent of breast reconstruction is completed during a single procedure taking approximately six to eight hours. “The hospital stay is also longer,” says Dr. Nigriny, “but patients leave the hospital further along in the process, with greatly reduced need for other procedures.”

While there are few absolute contraindications for autologous flaps, Dr. Nigriny says patients in several categories are not good candidates for these procedures. They include patients who cannot or will not comply with postoperative instructions; patients with unrealistic expectations; patients with severe cardiac or pulmonary issues who are unlikely to remain medically stable for the eight-hour procedure; patients with renal failure or clotting disorders; patients taking high-dose blood thinners; and those who have had certain types of abdominal surgery that have damaged blood vessels to the tissue typically used for the reconstruction.

For more information

or to refer a patient, call Baystate
Plastic Surgery at 413-794-5363.



Welcome Joseph Shin, MD

Joseph Shin, MD, has joined Baystate Medical Center as the new chief of Plastic Surgery. He comes to Baystate from Yale University School of Medicine in Connecticut, where he served as associate professor of Plastic Surgery and director of the Yale Craniofacial Center.

Dr. Shin graduated from the University of Alabama School of Medicine, and completed his residencies in general surgery and plastic and reconstructive surgery at Yale University School of Medicine and Yale New Haven Hospital. He subsequently completed a fellowship in craniofacial surgery at Miami Children’s Hospital. He is board certified in plastic surgery and is a Guest Examiner of the American Board of Plastic Surgery. He was noted for inclusion in the “Best Doctors in America” in 2005-2008.