

Tissue Reinforcement with Strattice™ Reconstructive Tissue Matrix following Correction of Severe Breast Deformity

Robert Cohen, MD, FACS*
Paradise Valley, AZ

Case summary

A 41-year old woman with a history of multiple breast surgeries, following an initial bilateral augmentation mammoplasty 20 years ago, presented with severe breast deformities of bilateral inferior implant malposition, breast asymmetry, and medial malposition. In addition, she had severe right flexion deformity because of complete release of the pectoralis major muscle insertions by a prior surgeon. Due to the severity of her presenting complaints, corrective surgery was complex and included repositioning of the right pectoralis major muscle to its original anatomic position, correction of bilateral medial malposition, correction of bilateral inferior fold malposition, and bilateral circumareolar mastopexy to restore breast symmetry. The inferior and medial fold repair was reinforced with Strattice™ Reconstructive Tissue Matrix (TM) allowing the surgeon to control the breast pocket size and position.

Preoperative



Postoperative



Fig 1 A combination of pocket correction, repositioning of the right pectoralis major muscle, inferior and superomedial fold correction that was reinforced with Strattice™ Reconstructive Tissue Matrix, and circumareolar mastopexy was used to address this patient's complaints and achieve the desired outcome.

* Dr. Robert Cohen is a consultant for LifeCell Corporation.

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Patient History

Patient is a 41-year-old, 5' 1", 120-lb woman who presented with complaints of severe breast deformities from prior breast augmentation surgeries. Her initial breast surgery was in 1989 when she underwent bilateral breast augmentation with silicone implants. Since then she has undergone multiple procedures, including implant size change, capsulotomies, and attempts at correction of lateral malpositions, performed by multiple surgeons over a 20-year period. During her last surgery, a non-plastic surgeon tried to create a narrower cleavage by detaching the medial and superior insertions of the pectoralis major muscle of the right breast. In addition to breast surgeries, her medical history is significant for autoimmune disease.

Presentation

Breast examination revealed severe implant malposition, severe flexion deformity, and severe medial malposition of the right breast due to complete release of the insertions of the pectoralis major muscle during her previous surgery. On the left breast, she exhibited overdissection of the medial pocket and stretch deformity due to thinning of breast tissue leading to inferior and lateral fold malpositions (Figure 2). Overall, she had severe breast asymmetry.

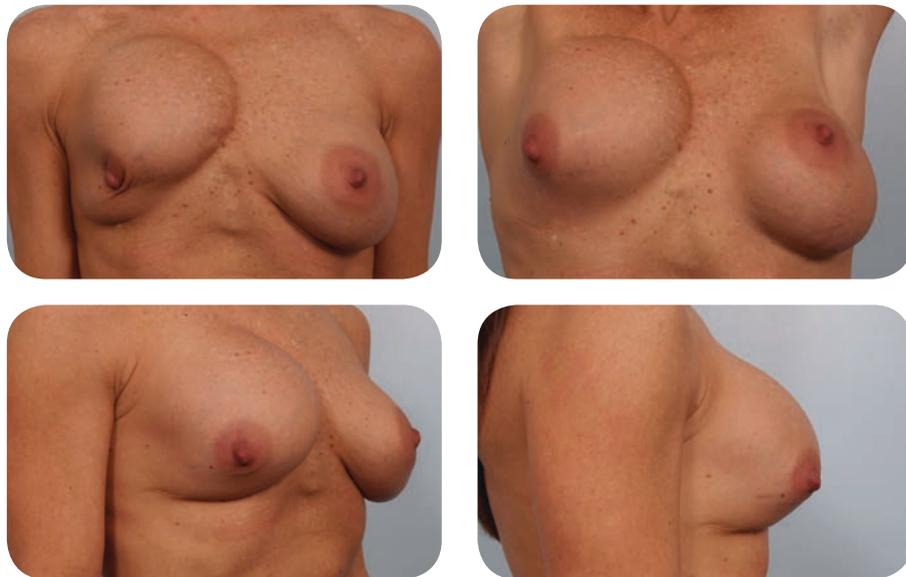


Fig 2 Preoperative stage. Patient presented with severe breast deformities.

Management Plan

A bilateral breast augmentation revision including pocket correction, repositioning of the right pectoralis muscle, and reinforcement of weak tissue at the superomedial and inframammary folds with Strattice™ Tissue Matrix was planned.

Repair

Preoperatively, the patient's midline, planned inframammary fold (IMF) positions, areolae, and proposed surface areas of the new pockets were marked (Figure 3A). The breast pocket and pectoralis muscle on both sides were accessed via an inferior periareolar incision.

On initial intraoperative examination of the right breast, the upper and medial pectoralis muscle was noted to be completely released from prior surgery, which caused the pectoralis muscle to swing down into the lower lateral portion of the breast. This anatomical disruption explained why the implant was forced in an upward and medial direction during pectoralis flexion. The implant (340 cc, smooth, round, high-profile, saline implant) was accessed and removed. The pocket was examined and a severe excess of space in the upper medial portion of the pocket was noted due to detachment of the pectoralis muscle. To reduce the excess space, multiple layers of capsulorrhaphy were performed. The pectoralis muscle was then swung up like a visor and reattached to the capsule near its original insertions using 3-0 Mersilene* suture (Ethicon Inc., Somerville, NJ) in a combination of interrupted figure-of-eight and simple interrupted fashion.

This effectively moved the muscle back into its natural anatomical position such that when a gel sizer (350cc, moderate plus profile) was placed in the pocket, it was noted to be seated in a normal position. Release of the inferior and medial scar tissue was then performed to further improve breast shape and form. The majority of the lower and lateral capsule was also removed leaving only the capsule in the superomedial aspect of the breast at the site of the capsulorrhaphy.

A sheet of Strattice™ Tissue Matrix (Contour #3), presoaked in sterile saline solution for >10 min, was cut diagonally into 2 pieces – a large wedge-shaped and a rectangular piece. The rectangular piece was sutured with 3-0 PDS* (Ethicon Inc., Somerville, NJ) in an interrupted fashion along the medial and upper medial breast to reinforce the medial pocket and pectoralis repositioning repair and offload the tension away from the suture line (Figure 4). The placement of Strattice™ Tissue Matrix was verified multiple times with the sizer in place and the patient in the seated position. The wedge-shaped piece of Strattice™ Tissue Matrix was sutured along the IMF and used to reinforce the lower repair. Once again, the sizer was placed and the patient was checked for good positioning of the implant and contouring of the breast. The pocket was irrigated copiously with antibiotic solution. A #10 FR hubless BLAKE® drain (Ethicon Inc., Somerville, NJ) was placed percutaneously through the lateral chest wall and along the gutter of the breast underneath the medial Strattice™ Tissue Matrix. An implant (350 cc, smooth, round, moderate plus profile, cohesive, silicone gel implant; Mentor Worldwide, LLC; Santa Barbara, CA) was then introduced into the pocket. The free edge of Strattice™ Tissue Matrix was sutured to the edge of the pectoralis major muscle. Deep subcutaneous closure was performed with 4-0 Vicryl suture (Ethicon Inc., Somerville, NJ) in running fashion. A small strip of Strattice™ Tissue Matrix was interposed to reinforce weak tissue deep to the suture line. A circumareolar mastopexy was then performed to shift the areola in a superior and medial direction (Figure 3B).

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Repair (Cont.)

On the left breast, the pectoralis muscle was noted to be in a relatively normal position, however, as with the right breast, the patient had a medial pocket excess, although to a significantly lesser degree. The left breast also had more stretch deformity of the lower pole as well as excessive space in the pocket laterally and inferiorly. After implant removal, a capsulorrhaphy was performed on the lateral and inferior pocket. A sizer (350cc, moderate plus profile) was then placed in the pocket and the patient was examined in the supine and seated position with a circumareolar mastopexy temporarily tailor tacked with staples (Figure 3C). She was noted to have excellent overall improvement in shape and size of the breasts. A second sheet of Strattice™ Tissue Matrix (Contour #3) was prepared and as before it was cut diagonally and the wedge-shaped piece was used for inferior pole reinforcement and the rectangular piece for reinforcement of the medial and superomedial repairs. The Strattice™ Tissue Matrix pieces were inset in the same fashion as on the right side with 3-0 PDS* suture in interrupted fashion. Pocket irrigation and drain and implant (350cc, moderate plus profile, gel implant) placement were performed as on the left breast. Closure of the left breast was performed in the same fashion as on the right with a circumareolar mastopexy. When the patient was examined in the supine and seated position, she was noted to have obtained her desired outcomes (Figure 3D). The incisions were cleaned, dried, and covered with benzoin and Steri-Strip™ (3M, St. Paul, MN).

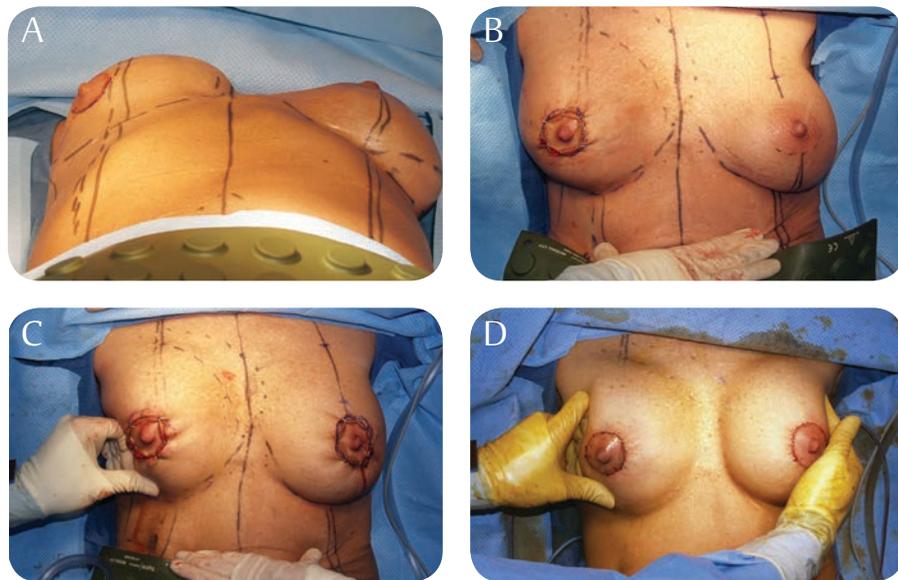


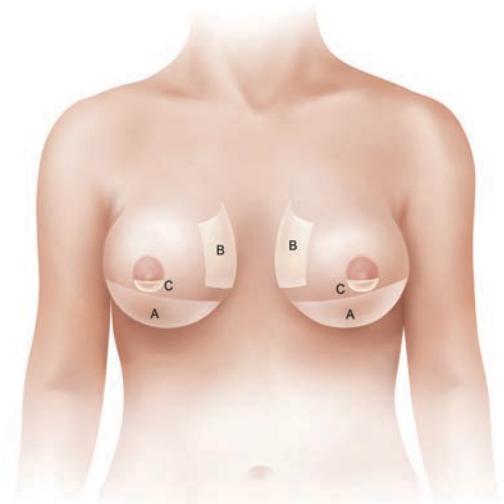
Fig 3 A, preoperative markings; B & C, after completion of right and left breast revision, respectively, with circumareolar mastopexy patterns temporarily tacked; upper dotted line represents extent of original medial malposition; D, after completion of bilateral mastopexy; note resistance of medial migration of implant despite strong pressure.

Repair (Cont.)

Fig 4

Schematic representation of Strattice™ Tissue Matrix placement along the inferior border (A), superomedial border (B), and retroareola border (C) to reinforce weak tissue.

Image for illustration purposes only.
Actual results may vary.



Outcome

The patient's immediate postoperative course was complicated by hematoma development on the left breast which, in the author's opinion, was unrelated to the use of Strattice™ Tissue Matrix. The hematoma was corrected surgically without further consequences. At her 2 month follow-up, all of her breast deformity related concerns were addressed and she was extremely pleased with her outcome (Figure 5).



Fig 5

Postoperative stage at 2-month follow-up. Strattice™ Tissue Matrix was used to reinforce weak tissue superomedially and inferiorly.

Conclusion

The patient's severe breast deformities required the use of a combination of revision procedures to adequately address her complaints, including repositioning of right pectoralis major muscle to its original anatomic position, correction of bilateral symmastia, correction of bilateral inferior fold malposition, and bilateral circumareolar mastopexy. As an additional strategy, Strattice™ Tissue Matrix was used to reinforce weak tissue at the inferior and medial folds. Tissue reinforcement with Strattice™ Tissue Matrix helped to strengthen the repair, allowed me to control the breast pocket size and position, and provided support to the breast pocket and may have contributed to the desired outcome in this patient.

Important Information

The surgical techniques described herein are suggested techniques for using Strattice™ Reconstructive Tissue Matrix. Proper surgical procedures and techniques are necessarily the responsibility of the medical professional. Each surgeon must evaluate the appropriateness of the techniques based on his or her own medical training and expertise. Many variables including patient pathology, anatomy and surgical techniques may influence procedural outcomes.

This clinical case study is based on the author's own clinical experience and research. Results may not be typical and individual results may vary. Before use, surgeons should review all risk information, which can be found in the *Instructions for Use* attached to the packaging of each Strattice™ Tissue Matrix. All images are courtesy of the author, unless otherwise indicated.

Strattice™ Tissue Matrix may be covered as a medically necessary procedure. Please verify with the patient's insurer directly or via the LifeCell™ Reimbursement Hotline.

LifeCell Corporation

One Millennium Way
Branchburg, NJ 08876
Tel: 908.947.1100
Fax: 908.947.1200

LifeCell™ Customer Solutions
800.367.5737
www.lifecell.com
www.RenewingYou.com

LifeCell™ Reimbursement
Hotline
888.543.3656
reimbursement@lifecell.com

