

A surgical technique for treating submuscular and subglandular symmastia combining standard techniques with an aggressive medial capsulorrhaphy

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Symmastia, the medial confluence of breast implants producing a 'bread loaf' quality, has continued to be a vexing complication of breast reconstruction and breast augmentation, despite numerous proposed repair methods. Previous procedures include capsulorrhaphy, allograft or xenograft sling suspensions, mastopexies and, in cases of subglandular implants, collapsing the pocket and reinserting the implant beneath the pectoralis major muscle. In the present article, the authors outline a reliable long-term correction of submuscular symmastia, combining the techniques of capsulorrhaphy, use of porcine xenograft slings, submuscular placement of the implants, and use of capsular tissue folded and sutured onto the presteral fascia with nonabsorbable sutures. This technique places the porcine xenograft sling between the implant and the folded capsular tissue sutured with nonabsorbable sutures, protecting the implant from erosion/puncture by the nonabsorbable sutures. The authors also propose a similar technique for the correction of subglandular symmastia.

The patient in the current article presented with submuscular symmastia and has been followed for >4 years postoperatively with absolutely no recurrence of symmastia, even with forcible application of lateral pressure on her breasts in an attempt to reproduce medial confluence. The technique offers a promising solution to the frustrating difficulty of symmastia, a complication with a high recurrence rate despite many proposed repairs across decades.

Key Words: Breast; Capsulorrhaphy; Nonabsorbable sutures; Symmastia

Symmastia is a very rare, but complex problem that may emerge after breast augmentation or reconstructive surgeries (1-3). Symmastia occurs when breast implants move across the sternal midline (Figure 1), usually as a result of overaggressive dissection of the medial implant pocket (4). Many surgical interventions, such as capsulotomy, capsulorrhaphy and mastopexy, have been developed to treat symmastia; however, symmastia often recurs in patients after treatments (4-12). More recently, techniques, such as explantation with collapse of the implant pocket and placement of the implant submuscularly, either using xenograft or allograft, to make a new pocket have been used (13).

The present article will first discuss the working technique in treating submuscular symmastia in a patient and, subsequently, describe a similar technique to correct subglandular symmastia. The repair described in the present article incorporates both old and new ideas in treating symmastia. In the past, absorbable sutures have been used to

anchor the capsulorrhaphy and xenograft, or allograft in place because permanent sutures left in in the pocket may erode the breast implant (14,15). Our submuscular technique requires the use of xenograft or allograft in the procedure while dissecting the capsule free and using it as part of the repair.

CASE PRESENTATION

'LA' is a 43-year-old woman who presented to the office in 2010. She previously had been seen by another plastic surgeon until 2010 for bilateral ductal carcinoma in situ. Under his care, she elected to undergo a bilateral mastectomy with immediate reconstruction. In 2006, LA underwent a bilateral mastectomy and had 550 mL silicone gel implants placed submuscularly. In early 2007, she found that there was significant deformity and abnormalities with her 550 mL implants, so she elected to replace her original implants with 700 mL silicone gel implants, once again placed submuscularly. Over the next three years, LA developed symmastia.

LA presented in December 2010 with severe symmastia along with bottoming out of her implants (Figure 2). There is no universal definitive treatment for symmastia, and many plastic surgeons in the United States believe that symmastia cannot be completely corrected. The plan was to repair the symmastia from LA's initial surgeries. Smaller implants and the use of bilateral medial and inferior-medial incisions would be used because her previous incisions were not appropriate to reuse due to improper exposure for the purposes of the modified medial capsulorrhaphy. The patient's primary objective was to have her symmastia corrected. As long as the symmastia did not recur, LA would be satisfied and would cooperate with a possible secondary operation to correct any potential bottoming out of her implants.

METHODS

The operative technique, using the patient's own capsule in the repair, nonabsorbable sutures, porcine xenograft slings and the use of medial inframammary crease incisions, follows. There are two different procedures: one for submuscular symmastia and one for subglandular symmastia. In both techniques, the capsule is used in addition to porcine xenograft and nonabsorbable sutures. The current patient was treated using the submuscular procedure.

The correction of submuscular symmastia is described first (Figure 3). A medial inframammary incision is made. A small incision is made in the capsule and the existing implant is removed. Using extensive dissection, the capsule is dissected off of the medial portion of the chest wall as in a radical capsulectomy. After the medial capsule is dissected free, it is folded on itself several times to create a thick medial wall. The capsule is sutured to itself with multiple interrupted 3-0 or 4-0 clear nonabsorbable polypropylene sutures. A 6 cm × 16 cm xenograft

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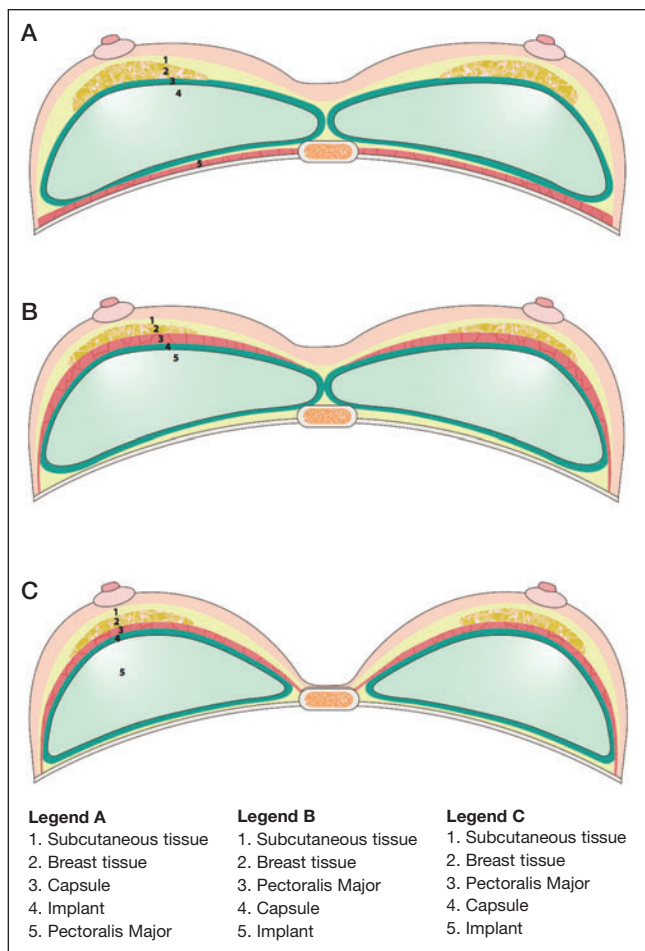


Figure 1) A Symmastia present with subglandular implants. B Symmastia present with submuscular implants. C Normal breast tissue with submuscular implants.

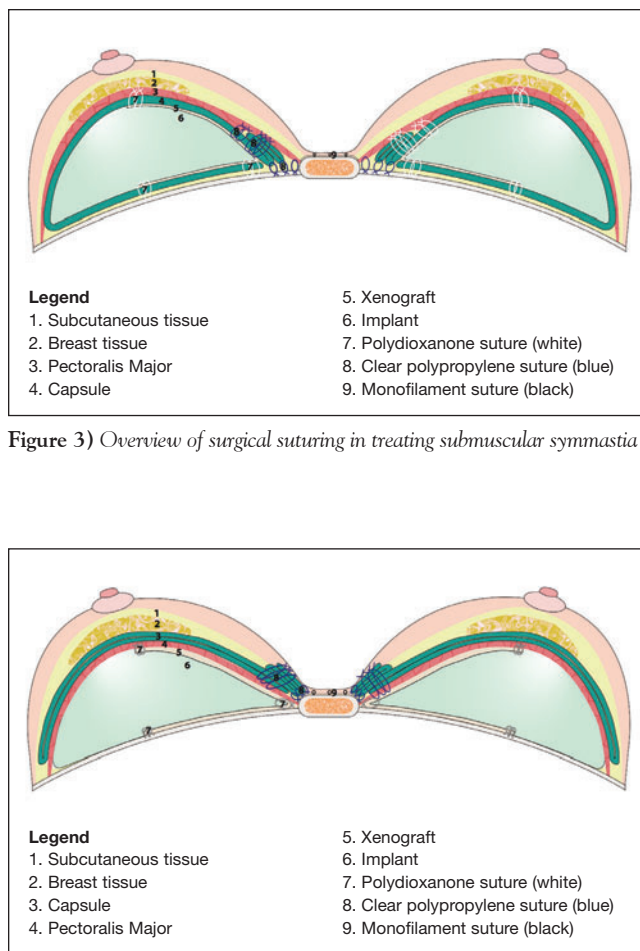


Figure 3) Overview of surgical suturing in treating submuscular symmastia

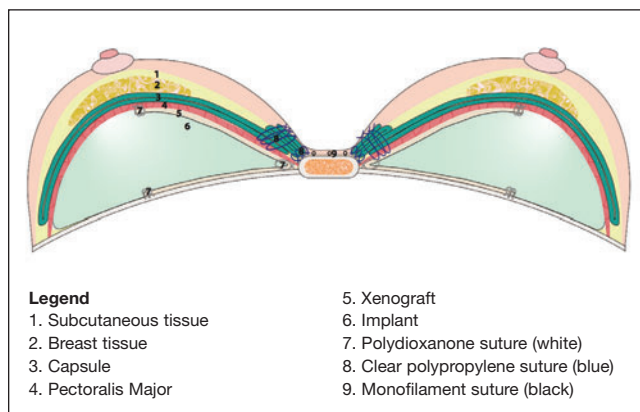


Figure 4) Overview of surgical suturing in treating subglandular symmastia

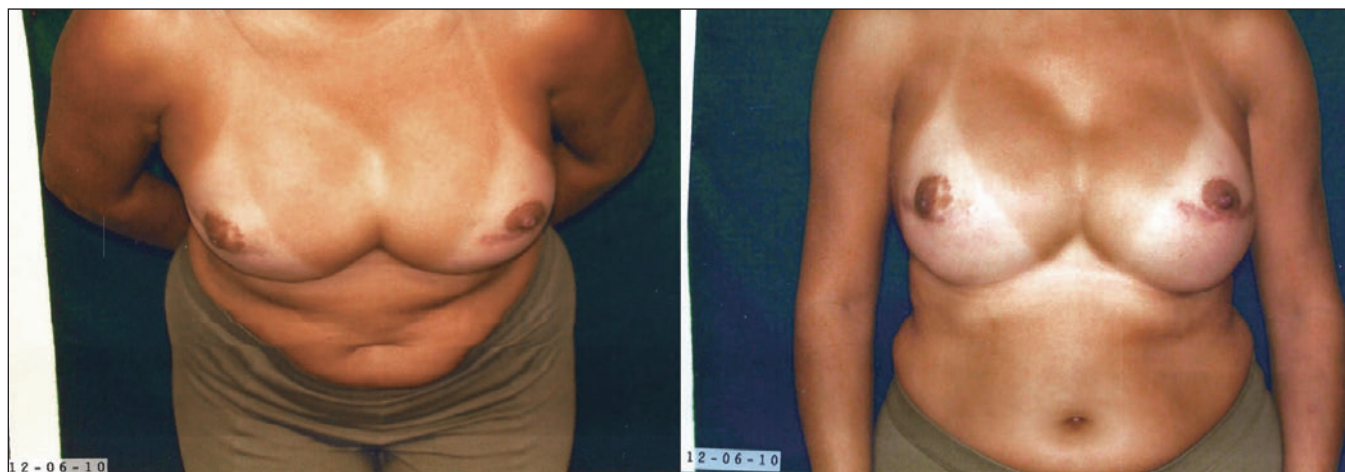


Figure 2) Seven months before surgery. Symmastia is present in both photographs

is then used and 3-0 clear polydioxanone sutures are used to suture the xenograft to the chest wall and to the capsule, creating a medial sling, which blocks the implant from migrating medially. The porcine sling acts as a buffer against the capsule, preventing the implant from rubbing on the nonabsorbable sutures, thereby avoiding puncture of the implant by the nonabsorbable sutures. The implant is then either reinserted or a new implant is put into place. The folded medial capsule is sutured to the presternal fascia with multiple interrupted

nonabsorbable 3-0 clear polypropylene sutures, attaching the capsule to the sternum medial to the xenograft sling. The muscle is similarly sutured to the presternal fascia medial to the capsule with 3-0 clear polypropylene sutures. The pocket is irrigated with antibiotic solution, and drains are inserted as needed. An identical procedure is performed on the contralateral side. The skin overlying the sternum is undermined and tacked to the anterior fascia of the sternum in three separate rows with multiple interrupted 4-0 monofilament sutures. The



Figure 5) Twenty-six days postsurgery, symmastia remains corrected. Scarring is decreased

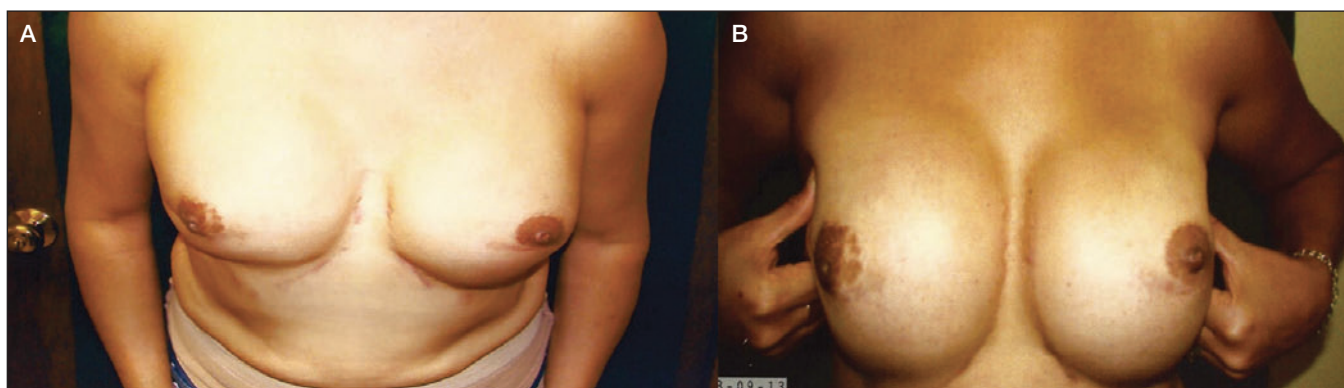


Figure 6) A Nine months postsurgery. B Patient pushing breasts medially 25 months postsurgery; symmastia remains corrected. Patient experiences early bottoming out of breasts, which may require further surgery

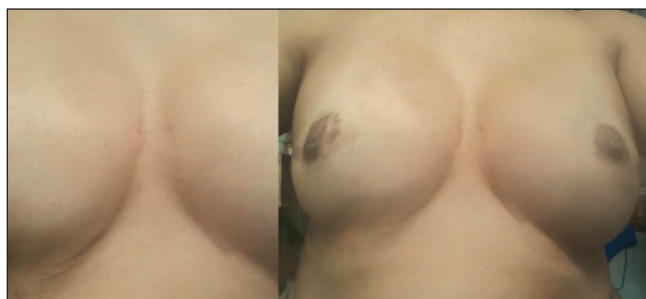


Figure 7) Four years postsurgery

wounds are then closed according to the surgeon's preferred technique. Finally, dressings and a surgical bra are applied.

Although the correction of subglandular symmastia has similarities to the submuscular procedure, there are some important differences. The capsule is used, but in the subglandular case, it is on the outside of the muscle (as opposed to the submuscular repair, where it is on the inside of the muscle). The subglandular symmastia is treated as follows (Figure 4): a medial inframammary incision is made, the capsule is exposed and then the implant is removed. The dissection is performed extensively to expose the capsule. The collapsed capsule is dissected free and is folded on itself and sutured to the presternal fascia with multiple nonabsorbable 3-0 clear polypropylene sutures. The skin incision is then carried slightly laterally and an incision is made beneath the fascia of the pectoralis major muscle. A pocket is then dissected in standard fashion for the submuscular placement of implants. To reinforce the medial border, a 6 cm × 16 cm porcine xenograft is used to create a sling that is placed medially to the implant to prevent the implant from migrating. The porcine sling is sutured to the undersurface of the pectoralis major muscle and then to the chest wall with multiple interrupted 3-0

polydioxanone sutures. The pocket is irrigated with antibiotics, and the implant is reinserted (a new implant may be inserted instead). An identical procedure is performed on the contralateral side. The skin overlying the sternum is tacked to the presternal fascia with three rows of 4-0 monofilament sutures. Drains are used as needed, and the wound is closed according to the surgeon's preference.

In both repairs, the capsule is sutured to the presternal fascia with nonabsorbable sutures and the sling is inserted between the capsule-muscle complex and implant to protect the implant from being punctured by the nonabsorbable sutures. In the submuscular technique, the capsule remains beneath the muscle and is above the porcine xenograft. In the subglandular technique, the capsule is above the muscle, which is also above the porcine xenograft and implant.

RESULTS

Since LA's surgery in 2011, she has returned for routine checkups and to have pictures taken of how her breasts have progressed through time (Figures 5 and 6). She elected to receive Kenalog injections at six and 11 months after her symmastia correction surgery to treat the incision scars.

CONCLUSION

The optimal treatment for symmastia is prevention. Symmastia occurs rarely, but when it does, we believe we have developed a potential surgical technique to prevent its recurrence. By using the patient's own capsule and using nonabsorbable sutures in the repair of symmastia, we can correct symmastia and lessen the chances of recurrence. Additional patients with long-term follow-up will be needed to test these methods, but we believe there is promise in these procedures.

DISCLOSURES: The authors have no financial disclosures or conflicts of interest to declare.

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