

Simplified Breast Reconstruction

A plan to fight cancer's cosmetic challenges

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Recently, the number of young women requesting prophylactic mastectomies at our cancer center has gone up thanks to the availability of genetic screening and the increased recognition of family history as a risk factor. The ultimate factor in these patients' decision is often the ability to have an immediate reconstruction.

These women typically work and/or take care of children at home. Although I offer the full spectrum of reconstructive options to these women, very few choose to have autologous tissue reconstruction, due to the need for a prolonged inpatient stay, length of recovery, postoperative pain, and potential complications associated with that approach. Instead, patients want an acceptable cosmetic result with minimal downtime.

Many of these young women have friends who have had breast implants, and most are adequately educated to objectively assess the risk of these implants. The prospect of correcting the ptosis acquired with several pregnancies and possibly a reduction in breast size frequently help the women to offset the perception of being deformed following a mastectomy.

The surgical oncologists at our institution perform mostly skin-sparing mastectomies through a periareolar incision in these low-risk patients. I have attempted to simplify the reconstructive process to make it more attractive to these women and still achieve a good cosmetic result. This has increased the number of patients at my practice electing to have immediate breast reconstruction. The surgical oncologists

also feel more comfortable offering prophylactic mastectomies when they are comfortable with the reconstructive process.

Options Are Offered

In the preoperative consultation, all reconstructive options are offered to the patient. Photographs of the immediate postoperative appearance and final results are shown. Also, the delayed healing with a purse-string closure and possible small areas of skin loss at the edges are explained. Women are asked what they would like as the final breast size. Generally, most choose to remain the same size or slightly smaller with correction of ptosis being more important. Small increases of up to one cup size can be accommodated. A range of postoperatively adjustable implants is chosen. These can be either saline implants or silicone implants with a saline core.

The patient is marked in the holding area sitting upright. The future position of the fill port is marked with the patient's input. After induction of general anesthesia, bilateral intercostal blocks are administered with bupivacaine. No blocks are given in obese patients due to the increased risk of pneumothorax. Bilateral mastectomies through a periareolar approach are performed. The difficulty and length of the procedure is closely related to the general surgeon's experience, but also dependent on the size of the areola. While a large diameter areola makes the mastectomy easier for the general surgeon, it limits the amount of initial expansion and is more prone to delayed healing.

Overview

Start the reconstructive procedure by closely inspecting the subcutaneous flaps for hemostasis. Due to the limited exposure, smaller bleeders are frequently overlooked by the general surgeon and may cause postoperative hematomas. Next, a subpectoral pocket is created and the pectoralis muscle is divided medially and inferiorly. Only a minimal incision is made in the lateral border of the pectoralis major. The more inferior/lateral border of the pectoralis is not detached from the lateral tissues, but eventually it is lifted off the chest wall by dissecting on top of the chest wall from medial to lateral.

The serratus anterior muscle is then elevated off the lateral chest wall through the same initial limited incision. Inferiorly toward the inframammary fold, the lateral (suberratus) and medial (subpectoral) dissection cavities are connected without dividing the overlying attachments as mentioned above. This creates a muscle flap consisting of pectoralis major and serratus muscles, which will provide complete submuscular coverage for the implant.

Sizer implants are then used to determine the appropriate size of the postoperatively adjustable implant. The adjustable implants are then placed under the muscle flap after standard preparation of the implant. The fill tubing is brought through the most superior part of the muscle incision and this limited incision is then closed with a long-lasting absorbable suture (Figure 1).

The smaller of the two supplied fill ports is then attached to the fill tubing. The fill tubing is shortened enough to avoid any



1. Implants inserted following bilateral mastectomies through periareolar incisions. On the left the muscle incision has been closed. Fill ports have not been connected yet. 2. Periareolar incision closed in pursestring fashion on left. A synthetic absorbable suture has been placed on right, but not pulled together and tied yet. 3. Final result before applying dressing. Implant filled less on right due to thin lower skin flaps. Here a polypropylene suture was used as final layer.

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coiling; some redundancy is preserved to accommodate the expansion of the implant. Some manufacturers supply their implants with a metal connector or a snap-on plastic connector. Although the plastic connector is easier to apply, I have had difficulties removing these due to tissue ingrowths.

The fill ports are placed in a tight subcutaneous pocket, typically in the lateral axilla. No sutures are used to

secure these to the surrounding soft tissues. The implants are filled as much as possible without putting any tension on the skin flaps. Typically they can be filled to half of their final volume.

The periareolar incision is closed in a purse-string fashion. This is the most critical part of the procedure and has to be done meticulously to avoid wound breakdowns or skin ischemia. I prefer a three-layer closure.

The deep dermis is first closed with a caprolactone and glycolide-coated copolymer of lactide and glycolide suture (Figure 2). This purse string is tightened just enough to approximate the deeper tissues. Any undue tension is avoided to prevent ischemia of the edges of the skin flaps. The superficial dermis is closed as the next layer in a purse-string fashion using a 3-0 or 4-0 polydioxanone suture. This layer should approximate the skin edges. The skin is then sealed either with 2-octyl cyanoacrylate skin adhesive or a running 4-0 non-absorbable polypropylene suture (Figure 3). The skin adhesive seems to cause less ischemia, but a polypropylene suture is used if there are still some gaps. No drains are used and the patient is circumferentially wrapped.

The expansion is started at about 3 weeks. Initially, the purse-string closure has multiple folds radiating from the center. All of these folds will disappear as the implant is filled and the skin is expanded. The final scar is a slightly hyperpigmented circle, which has the appearance of an areola.

Complications with this procedure are extremely rare. The delayed healing of the purse-string closure is anticipated. The patients accept this if it has been explained preoperatively. Implant infections have not occurred in my patients, even when the purse-string closure heals in a delayed fashion. Small seromas or hematomas are not aspirated and resolve when expansion is started.

The implants are typically overfilled and then volume is removed until the woman is satisfied with size and symmetry. In isolated cases a capsulectomy is performed at the time of port removal. This is usually performed within 3 months of the mastectomy. Nipple-areolar reconstruction is performed last.

Patient satisfaction is very high. I have followed a large number of patients, some of them for over 4 years, and there have been no instances of implant deflation or noticeable capsular contracture. ■



Preoperative: 42 year old, para 5 and gravida 5.



3 weeks postoperative, following first expansion. Fill port site on the left following injection.