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Skin-sparing mastectomy lends itself to immediate reconstruction with autologous tissue, allowing a one-stage reconstruction (a nipple-areolar complex is made at the time of the initial surgery). It has been difficult to obtain equally pleasing results when immediate reconstruction with a skin-sparing technique is performed with expanders. The authors describe a modification of previously described techniques that enhance the aesthetic result of expander/implant reconstruction. This modification is called the sun flap closure.

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During the past 15 years, new surgical techniques have allowed for more natural and aesthetically pleasing results following mastectomy with immediate reconstruction. In 1991 the skin-sparing mastectomy was described by Toth and Lappert.¹ This technique allowed a tremendous improvement in the aesthetic outcome of immediate reconstruction after mastectomy. More importantly, numerous retrospective studies have shown skin-sparing mastectomy to be sound oncologically.²⁻⁵ Working with a general or oncological surgeon who is sensitive to the aesthetic outcome of his or her patients is crucial to the success of this operation. The appearance of the reconstructed breast in many cases has no apparent scar.

The skin-sparing technique lends itself to immediate reconstruction with autologous tissue, allowing a one-stage reconstruction (a nipple-areolar complex is made at the time of the initial surgery). It has been difficult to obtain equally

Skin-Sparing Mastectomy With Sun Flap Closure

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pleasing results when immediate reconstruction with a skin-sparing technique is performed with expanders. We describe a modification of previously described techniques that enhance the aesthetic result of an expander/implant reconstruction. This modification is called the sun flap closure.

Surgical Technique

Six patients have undergone the sun flap technique (Fig 1). The minimal follow-up is 3 months. The reconstructive surgeon, in conjunction with the general surgeon, must determine whether the patient is an appropriate candidate for skin-sparing mastectomy with immediate reconstruction. During the initial surgery, a periareolar incision is made and the mastectomy is performed through this incision. Minimal use of cautery is recommended to preserve the skin flaps. An axillary incision is made and axillary node dissection is carried out. Next, a submuscular pocket is developed, and the expander is placed in the standard fashion. The periareolar incision is then incised, removing multiple small triangles of tissue to create the sun flap (Fig 2). 4-0 Monocryl is then used, taking small "bites" from each apex, to form a pursestring suture. The flap comes together with minimal bunching. The small limbs (<1 cm) are then closed with a single 5-0 nylon suture.

Six to 8 weeks after the initial reconstruction, nipple-areolar complex reconstruction and removal of the expander and placement of the implant can be performed simultaneously. Removal of the expander and placement of the implant can be performed through a transaxillary approach or through the nipple-areolar complex. Generally the transaxillary incision is

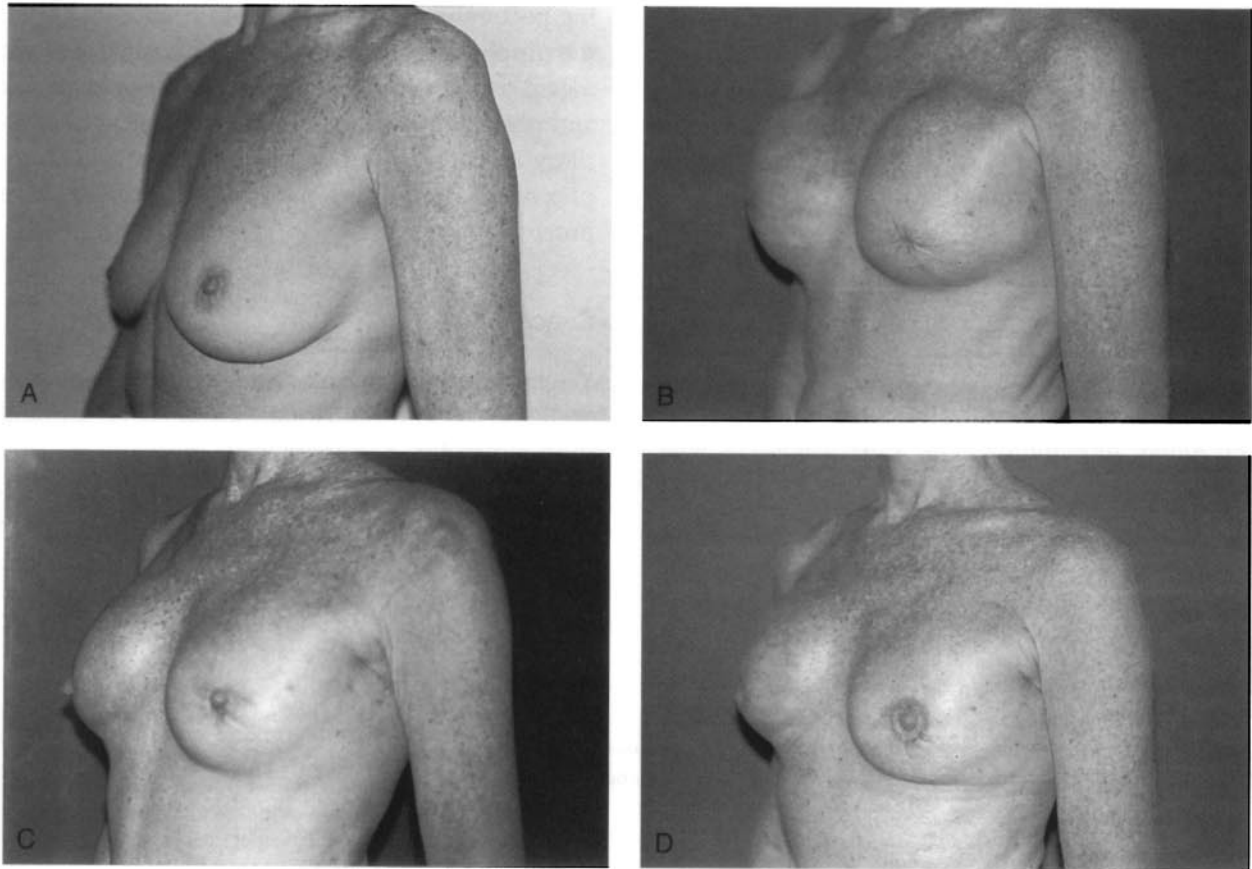


Fig 1. (A) Preoperative view. (B) Expander placement and SUN flap closure. (C) Nipple-areolar complex reconstruction. (D) Areolar tattooing.

generous enough to allow easy placement of the implant. The borders of the sun flap incisions are ignored. The nipple-areolar complex is constructed using a modified C-V flap or bowtie flap.⁶ It is important to incise directly down and through the muscle because reconstruction of the nipple-areolar complex is based on both the subdermal plexus and muscular neovascularization. The nipple-areolar complex is tattooed 4 to 6 weeks after placement of the implant.

Discussion

Skin-sparing mastectomy has enabled a more aesthetically pleasing breast reconstruction following mastectomy. The ability to place the mastectomy scars within the confines of a reconstructed nipple-areolar complex allows for re-

construction without visible scarring. It should be noted that skin-sparing mastectomy is appropriate only for select candidates. Those with delayed reconstruction and significant breast ptosis are relative contraindications for this type of reconstruction using implants.

One technical problem with regard to skin-sparing mastectomy is how to close the circular periareolar incision. Attempts at using a pursestring closure have resulted in a ruffled edge that does not resolve and often leaves small gaps in the closure. This has required a secondary surgery involving an elliptical incision for closure. Other closure techniques have been a bilateral V-Y type closure, which often leads to dog-ears and significant tension on the closure. We have developed the sun flap as a means of attaining a fresh, well-approximated closure of the periareolar incision. Because the skin flap is adhered intimately to the underlying

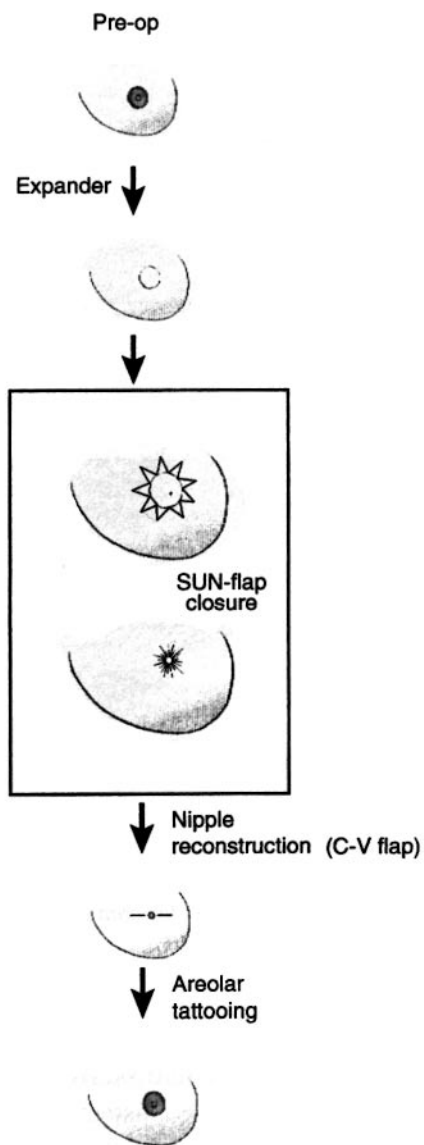


Fig 2. Modified skin-sparing mastectomy technique using the sun flap.

ing pectoralis major muscle, and is supplied by it, the nipple-areolar complex can be created without regard to prior incisions. Removal of the expander and placement of the implant through the transaxillary incision or through the nipple-areolar complex saves a surgical step during the reconstructive process.

Conclusion

We have found that the sun flap modification, as well as the simultaneous exchange of implant with expander, has enabled us to obtain a better result and saves a surgical step for the patient. This method allows complete breast reconstruction with an expander/implant in two stages.

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