Immediate Nipple Reconstruction with Autologous Breast Reconstruction Following Areola-Sparing Mastectomy: A Marriage of Aesthetics and Oncologic Principles

Peter T. Korn, MD; Munique Maia, MD; Marie H.M. Chen, MD

Abstract

Introduction: Areola-sparing mastectomy preserves the specialized areola skin, the subtleties of which are difficult to reconstruct, but avoids oncologic concerns associated with nipple preservation[1]. Autologous breast reconstruction provides skin to reconstruct the nipple in the immediate setting. This study evaluates the technique, reliability and aesthetic outcome of immediate nipple reconstruction in the setting of areola-sparing mastectomy.

Methods: Forty out of 521 free flap breast reconstructions (32 DIEP flaps, 6 TUG flaps, 2 PAP flaps) in 21 patients, who were followed prospectively from 02/2010 to 02/2014 were done following areola-sparing mastectomies. The procedure was indicated based on the breast surgeons' preferences and aesthetic considerations (areola position, skin envelope, breast volume). Mastectomy incisions were designed around the nipple with a 4-6cm inferior vertical extension. An inferiorly based modified CV-flap utilizing skin of the underlying free flap was used for nipple reconstruction, which was done delayed in the first 2 reconstructions and immediate in the remaining 38. A temporary skin island inset into the inferior pole incision for postoperative monitoring was excised 2-3 weeks postoperatively.

Results: Flap success rate was 100%. Viability of the reconstructed nipples was 100% in all cases. One patient had partial areola skin loss with secondary healing. Nipple projection was sufficient in all cases. Revision of the nipple inset was done in 2/38 immediate reconstructions. Preservation of the areola with its subtle coloration, texture, and soft transition to the surrounding breast skin provided favorable aesthetic results compared to periareolar incisions (Figure 1 and 2).

Conclusion: Immediate nipple reconstruction in the setting of areola-sparing mastectomy can be performed safely, with less risk of tissue loss compared to reports of nipple-sparing mastectomy[2]. Supple tissue characteristics in the immediate setting facilitate the inset and minimize scarring around the reconstructed nipple compared to delayed nipple reconstruction. The procedure should be considered when nipple-preservation is not performed in patients with appropriate areola position, and may provide excellent aesthetic results with the potential for single-stage autologous breast reconstruction.

References:

[1]Simmons RM, Brennan M, Christos P, et al. Analysis of nipple/areolar involvement with mastectomy: can the areola be preserved? Ann Surg Oncol 2002;9:165-8.

[2] Garcia-Etienne CA, Cody Iii HS 3rd, Disa JJ, Cordeiro P, Sacchini V. Nipple-sparing mastectomy: initial experience at the Memorial Sloan-Kettering Cancer Center and a comprehensive review of literature. Breast J. 2009 Jul-Aug;15(4):440-9.

Figure 1. Preoperative appearance.

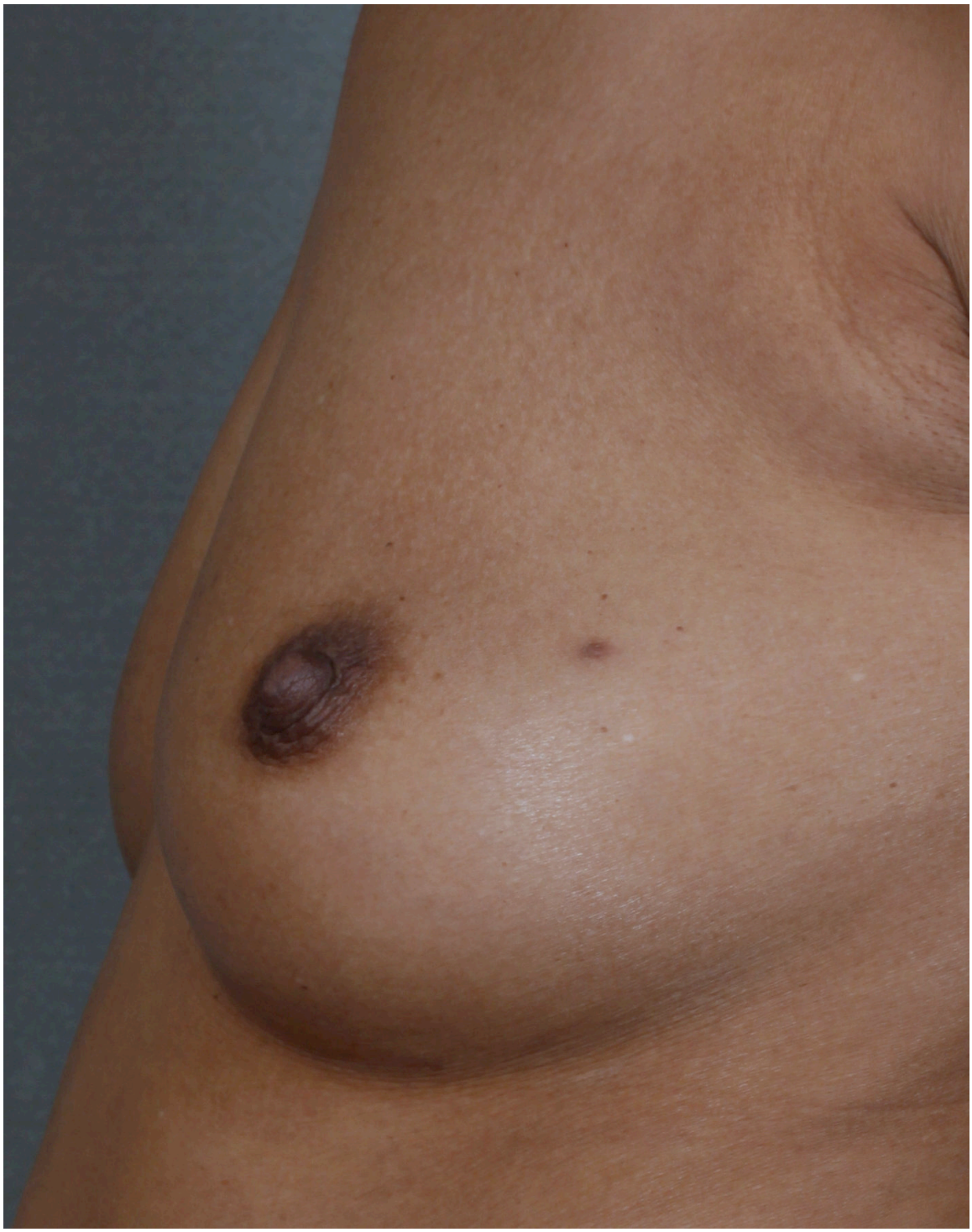

Figure 2. Postoperative appearance after areola-sparing mastectomy, DIEP flap and immediate nipple reconstruction.