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The Impact of Implementing a Standardized Postoperative Pathway on Underserved Patients Undergoing Microsurgical Breast Reconstruction

**Danielle S. Jackson, MD, MPH; Aadit Shah, MS; Heather Erhard, MD; David Greenspun, MD; Teresa Benacquista, MD; Evan S. Garfein, MD; Katie E. Weichman, MD**

**PURPOSE:** There is paucity of knowledge regarding the impact of variation in postoperative care for microsurgical breast reconstruction patients. Currently, both optimizing patient outcomes and decreasing the cost of healthcare are of prime concern. Caring for underserved populations presents greater challenges in this realm for many reasons. Our aim was to understand the impact of initiating a standardized postoperative pathway for underserved patients undergoing microsurgical reconstruction.

**METHODS:** A retrospective review of all patients who underwent microsurgical breast reconstruction at Montefiore Medical Center from January 2012-January 2015 was conducted. A standardized postoperative care pathway was implemented in January 2014. Patients were divided into two cohorts, those having microsurgical breast reconstruction after the pathway was implemented and those who had variable postoperative care prior to pathway. Primary dependent variables analyzed included postoperative complications and hospital length of stay. The Independent variables analyzed included demographic information, timing of reconstruction, flap type, sidedness of surgery, adjuvant therapy, and average operating room time. Characteristics and outcomes were compared using Fishers exact test and general linear models for continuous and categorical data, respectively.

**RESULTS:** A total of 78 patients undergoing 104 flaps were included for analysis. Twenty-six patients (33.3%) undergoing 34 flaps (32.7%) were in the control cohort (prior to implementation of the standardized pathway) and 52 (66.6%) patients undergoing 70 flaps (67.3%) were included in the standardized cohort. When comparing cohorts there was no difference between, age, medical comorbidities, smoking status, timing of reconstruction, or radiation/chemotherapy status. However, the average length of stay for patients having postoperative care with a standardized pathway was significantly shortened by 1.3 days when compared to the control group (4.69 ± 1.33 versus 6 ± 2.60 (p<0.05). There was additionally no difference in postoperative complications including arterial thrombosis, venous thrombosis, fat necrosis, mastectomy skin flap necrosis, and wound healing problems between the two cohorts.

**CONCLUSIONS:** Using a standardized postoperative pathway for the care of underserved patients undergoing microsurgical breast reconstruction yields a significant decrease in hospital length of stay without increasing postoperative complications.

The Use of Both Antegrade and Retrograde Internal Mammary Vessels in the Bipedicled (double-barrel) Deep Inferior Epigastric Perforator Flap for Unilateral Breast Reconstruction

**Rami D. Sherif, BA; Jonatan Hernandez Rosa, MD; Philip J. Torina, MD; Marco A. Harmaty, MD**

**BACKGROUND:** Autologous abdominal tissue transfer is a well-established method of breast reconstruction. The deep inferior epigastric perforator flap ( DIEP) has the additional benefit that donor site morbidity is minimal as it spares the muscle and fascia. Conventional DIEP flap reconstruction may not provide adequate volume in cases where the patient is thin, has midline abdominal scars, and/or has a large volume of tissue to replace. One solution is to use a bipedicled DIEP flap, which can incorporate all of the available abdominal tissue.

Bipedicled DIEP flaps have been described in a number of different configurations. The literature appears to favor intra-flap anastomosis, with a minimal exposition of two recipient vessels. It has been demonstrated that both the
antegrade internal mammary artery (aIMA) and retrograde internal mammary artery (rIMA) are adequate recipient vessels. The authors are interested in presenting a single center experience with bipedicled DIEP flaps to both the aIMA and rIMA, showing their feasibility and safety.

METHODS: Following approval by the Icahn School of Medicine at Mount Sinai Institutional Review Board, a retrospective review was performed identifying patients who underwent unilateral breast reconstruction using a double pedicle DIEP flap by a single two-surgeon team. Data was collected on patient characteristics, pre-operative risk factors, and post-operative complications. Data was analyzed with a specific emphasis placed on post-operative complications and how they related to pre-operative risk factors.

RESULTS: 20 patients were identified who underwent unilateral breast reconstruction using a bi-pedicled DIEP flap. All patients were female and were previously diagnosed with cancer. There were zero flap failures and zero instances of abdominal hernia or issues with abdominal wall functionality following the operations.

CONCLUSIONS: The series of surgeries described in this study resulted in successful breast reconstruction in 20 women using a bi-pedicled DIEP flap. The results show that this novel approach allows for reconstruction in places where a conventional DIEP does not provide adequate volume, achieved safely and without increased morbidity.

The bi-pedicled deep inferior epigastric perforator flap is a viable option for large-volume autologous breast reconstruction, providing ample tissue for successful reconstruction while also allowing for shorter recovery and limited donor-site morbidity.

Two-Stage Implant-Based Breast Reconstruction is Safer Than Immediate One-Stage Implant-Based Breast Reconstruction Augmented with an Acellular Dermal Matrix: A Multicentre Randomized Controlled Trial

Rieky Dikmans, MD; Vera Negenborn, MD; Mark-Bram Bouman, MD; Hay Winters, MD, PhD; Jos Twisk PhD; Quinten Ruhé, MD, PhD; Marc Mureau, MD, PhD; Jan-Maerten Smit, MD; Stefania Tuinder, MD, PhD; Yassir Eltahir, MD; Nicole Posch, MD; Jose van Steveninck-Barends; Rene van der Hulst, MD, PhD; Marleen Meesters-Caberg, MD; Marco Ritt, MD, PhD; Margriet Mullender, PhD

INTRODUCTION: The evidence justifying the use of acellular dermal matrices (ADMs) in implant-based breast reconstruction (IBBR) is limited. The aim of this prospective randomized trial was to compare the outcomes of direct IBBR augmented with an ADM (Strattice™, LifeCell Cooperation) with those of two-stage IBBR. We report on the first results on the safety outcomes of the two procedures.

MATERIALS & METHODS: A non-blinded randomized controlled trial was conducted at eight hospitals in the Netherlands. Patients who intended to undergo skin-sparing mastectomy and immediate IBBR were randomized to one of two procedures for IBBR: one-stage ADM-assisted IBBR or two-stage IBBR. The primary endpoint was quality of life. In the present article, we assessed the effect of the procedure on the occurrence of adverse outcomes. Analyses were performed with logistic regression and the general linear model. The trial is registered in the Dutch National Trial Register (NTR TC 5446) and the public CCMO register in the Netherlands (NL41125.029.12). The inclusion of patients is completed.

RESULTS: Between April 14, 2013, and May 29, 2015, 142 patients were enrolled in the study. Eventually, 59 patients (91 breasts) in the one-stage IBBR group and 62 (92 breasts) in the two-stage IBBR group were included for analysis. The overall surgical complication rates per patient (45.8% vs 17.7%, OR=4.5, p=0.008), the medical re-operation rates (37.3% vs 14.5%, OR=3.7, p=0.014) and the implant explantation rates (28.8% vs 4.8%, OR=16.8, p=0.004) were significantly higher in the one-stage group. This was also true after controlling for multiple confounding factors.

CONCLUSION: Immediate one-stage ADM-assisted IBBR was associated with a significantly higher rate of post-operative complications compared with two-stage IBBR. There was no evidence of adverse tissue reactions to the ADM itself. These results indicate that immediate one-stage ADM-assisted IBBR should be considered very carefully.

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