Co-Authors: Eunsoo Park, MD, PhD; Hangyu Cha, MD; Seungmin Nam, MD; Yongbae Kim, MD; Affiliation: Soonchunhyang University Bucheon Hospital, Bucheon

INTRODUCTION: Capsular contracture is the most frequently reported complication after implant-based breast reconstruction that affects 2.8 to 15.9 percent of patients. This study was first undertaken to present authors’ experience with acellular dermal matrix for prevention of capsular contracture in implant-based immediate breast reconstruction with latissimus dorsi muscle flap, and to assess the final aesthetic outcome.

METHODS: We performed a retrospective review of all patients who underwent immediate latissimus dorsi muscle flap breast reconstruction in combination with implant and acellular dermal matrix from January 2014 to December 2015. Demographic and clinical characteristics and postoperative complications, especially focused on capsular contracture, were assessed. They were also analyzed as the potential risk factors for the development of capsular contracture. In addition, the aesthetic outcome of the overall reconstruction and the final outcome of the inframammary fold were evaluated.

RESULTS: During the study period, a total of 30 patients (30 breasts) were reviewed. The mean Baker grades for all 29 breasts (one breast was dropped out due to implant loss), evaluated one year after reconstruction, was 1.21 ± 0.49 capsular contracture. None of risk factors except seroma/hematoma (p < 0.033) were significantly associated with the development of capsular contracture. In addition, the aesthetic outcome of the inframammary fold was 3.5 ± 0.6 for physician and 3.4 ± 0.6 for patients.

CONCLUSION: In this study, we have shown the ability of acellular dermal matrix to prevent capsular contracture observed in implant-based immediate breast reconstruction with latissimus dorsi muscle flap and its use was proven to create superior aesthetic results.

Reporting Complications in Plastic Surgery: A Systematic Review of Randomized Controlled Trials

Presenter: Alexander Morzycki, MSc
Co-Authors: Alexandra Hudson, BSc; Osama Samargandi, MD, MSc; Michael Bezuhly, MD, MSc, FRCSC; Jason Williams, MD, MEd, FRCSC
Affiliation: Dalhousie University, Halifax, NS

INTRODUCTION: Accurate knowledge of the nature and frequency of complications is critical for evaluation of the safety and efficacy of surgical interventions. Historically, complications in surgical trials have been poorly reported. This investigation aimed to systematically evaluate the reporting of complications in the plastic surgery (PS) literature.

METHODS: Two independent reviewers conducted a systematic search using the electronic databases MEDLINE, EMBASE, and SCOPUS. The search was limited to the top seven plastic surgery journals with the highest impact factors. Randomized controlled trials (RCTs), describing a potentially invasive treatment, in any domain of PS, published between 2012–2016, were included.

RESULTS: One hundred and forty-five RCTs met our inclusion criteria, of which 30% were registered. Anticipated complications were clearly defined in only 15% of studies, and in 70% of studies it was not clear who would be documenting the complications that arose. Furthermore, only 72% of studies reported the occurrence of complications, of which 61% did not discuss events occurring in the intra-interventional period. Of the studies not documenting a complication, two-thirds included a statement declaring that no complications had occurred. Pain was the most common intra- and post-interventional complication. Binary logistic regression revealed that after controlling for potential confounders, funded RCTs were nearly four times more likely to report complications (95% CI 1.41–10.83, p=0.009).

CONCLUSION: Reporting of complications in the PS literature remains heterogeneous. Improved transparency and evaluation of complications will strengthen evidenced-based practice and improve patient outcomes. We propose a standardization tool for assessing and reporting complications in PS trials.
Nipple Position and Aesthetics Following Tissue Expander Reconstruction after Nipple Sparing Mastectomy: The “See Saw” Effect

Presenter: Robert Dorfman, MSc
Co-Authors: Lauren Mioton, MD; Emily Stone, BA; Wenhui Yan, MD; Cecil S. Qiu, BA; Sekhar Marla, MBBS MSc; John Y.S. Kim, MD, FACS
Affiliation: Feinberg School of Medicine, Chicago, IL

INTRODUCTION: Preservation of the nipple-areola complex (NAC) via nipple-sparing mastectomy (NSM) can improve breast cosmesis. Under optimal conditions, the NAC would be aligned with the point of maximal projection of the breast mound. However with the diverse implant types available, it is unclear whether round or shaped implants allow for optimal alignment of the NAC.

PURPOSE: To analyze geometric changes of NAC positioning and overall aesthetic outcome with respect to implant type in two-stage prosthetic breast reconstruction.

METHODS: A retrospective chart review was carried out on patients who underwent NSM with immediate tissue expander breast reconstruction with the senior author from July 2008 through October 2016. Only patients who had completion of expander-implant exchange and photographic documentation of a post-exchange follow up of at least one month were included. Demographic, surgical, oncologic, and photographic data were collected on each patient. Four blinded members independently evaluated photographs for nipple position and aesthetic score. The panel graded aesthetic outcomes using a modified Likert scale. Scores ranging from 0 (poor) to 5 (excellent) were given for overall aesthetic result. Displacement of the nipple from the vector line of maximal projection of the breast was measured. Analysis of these parameters was performed in pairwise fashion comparing round and shaped cohorts.

RESULTS: Of 102 breasts (59 patients) meeting the inclusion criteria, 41 breasts (24 patients) had tissue expander-implant reconstruction with anatomical shaped implants, and 61 breasts (35 patients) had reconstruction with round implants. Age, BMI, ASA class, active smoking status, diabetes, prior radiation, post-mastectomy radiation, chemotherapy, and implant volume used for reconstruction were similar between both groups. The shaped implant cohort had less nipple deviation from the point of maximal projection (3.69±6.24 vs. 7.52±10.50; P<.0001), as well as significantly higher aesthetic scores (4.04±0.67 vs. 3.72±0.93; P=0.0044), than the round implant cohort. Subgroup delta analysis of 9 breasts (6 patients) with original post-exchange round implants that were later replaced for anatomically shaped implants further confirmed these findings; the switch to anatomic implants resulted in a smaller average angle of nipple displacement from the point of maximal projection (mean delta of -2.92±1.03) and higher average aesthetic score (mean delta of 0.64±0.42).

CONCLUSION: Quantitative analysis suggests that anatomic implants result in less nipple deviation from the point of maximum projection and improved aesthetic outcomes compared to round implants. Texturing may enable the shaped implant to resist migration and prevent a “see saw effect”, thereby maintaining nipple position relative to a more natural breast shape.