

Complications after Textured Vs. Non-Textured Breast Implants in Direct to Implant Breast Reconstruction: A Propensity Score Analysis

Presenter: Pierce Janssen, MD

Co-Authors: Farah Sayegh, MD, Christopher Bellaire, BA, C. Andrew Salzberg, MD

Affiliation: Icahn School of Medicine at Mount Sinai, New York, NY

BACKGROUND: Direct-to-implant (DTI) breast reconstruction has been a reliable method of single-stage reconstruction in select skin-sparing and nipple-sparing mastectomy patients for almost two decades. While the risks and benefits of smooth versus textured implants for breast reconstruction and primary breast augmentation are thoroughly supported in the literature, few studies have examined the relationship between implant shell texture and complications after DTI.

METHODS: Retrospective chart review of patients undergoing DTI breast reconstruction between January 2011 and December 2018 by a single surgeon was performed. A propensity score matching algorithm was used to eliminate unwanted bias stemming from clinical covariates. Chi-squared and Fishers Exact Tests were used to examine the association between implant shell texture and major postoperative complications, defined as (1) Baker Classification III or IV capsular contracture, (2) hematoma or seroma requiring US-guided aspiration or surgical evacuation, (3) skin flap necrosis requiring debridement, (4) infection requiring IV antibiotics, or (5) implant loss.

RESULTS: A total of 407 unique patients (764 breasts) were included in this study. A majority of patients received smooth implants compared to textured implants (80.3% vs. 19.7%, respectively) in a partial sub-pectoral plane compared to pre-pectoral plane (98.2% vs. 1.8%, respectively). Acellular dermal matrix (ADM) was used for all breasts. Overall capsular contracture rates for unmatched textured and smooth implant groups were 0.0% and 1.3%, respectively. 292 breasts were included for comparative analysis after propensity score matching (146 smooth implants, 146 textured implants). Rates of major complications and revision operations for matched groups are included in Table 1.

DISCUSSION:

The present study utilized propensity score matching analysis to examine the relationship between implant shell composition and major complication outcomes. Our data, based on a large cohort of women undergoing ADM-assisted DTI reconstruction by a single surgeon, demonstrated no statistically significant differences in major complication rates (defined above) or revision surgery rates for smooth versus textured implants after matching. Additionally, the data revealed a very low overall rate of capsular contracture (1.3%) for smooth implants. These findings are consistent with previously-published studies highlighting the ability for both ADM and sub-pectoral implant placement to decrease capsular contracture rates. Increased understanding, awareness, and reporting of BIA-ALCL in recent years have undoubtedly contributed to a paradigm shift in alloplastic breast reconstruction, influencing many surgeons and institutions to heavily limit or completely eliminate textured implant use. DTI breast reconstruction with smooth implants remains a safe and effective reconstructive option for select patients.

TABLE 1 – Complications and revision operations following DTI breast reconstruction, smooth vs. textured implants

	Smooth No. 146	Textured No. 146	P-value
Capsular Contracture	4 (2.7%)	0 (0.0%)	0.12
Necrosis	0 (0.0%)	2 (1.4%)	0.50
Infection	1 (0.7%)	0 (0.0%)	1.0
Implant Loss	2 (1.4%)	1 (0.7%)	1.0
Hematoma	1 (0.7%)	3 (2.1%)	0.62
Seroma	2 (1.4%)	0 (0.0%)	0.50
Epidermolysis	5 (3.4%)	4 (2.7%)	1.0
Any Revision	32 (21.9%)	27 (18.5%)	0.56
Implant Exchanges	11 (7.5%)	9 (6.2%)	0.82
Explant	0 (0.0%)	1 (0.7%)	1.0
Capsule Revisions	10 (6.8%)	4 (2.7%)	0.17
Necrosis	0 (0.0%)	2 (1.4%)	0.50
Hematoma	1 (0.7%)	3 (2.1%)	0.62
Seroma	2 (1.4%)	0 (0.0%)	0.50
Scar Revisions	1 (0.7%)	0 (0.0%)	1.0
Autologous Fat Transfer	10 (6.8%)	6 (4.1%)	0.44