

“Breast in a Day”: Examining Immediate, Permanent Implant Reconstruction in Nipple-Sparing Mastectomy

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Introduction:

Nipple-sparing mastectomy (NSM) with immediate, permanent implant reconstruction offers patients a prosthetic “breast in a day” compared to tissue expander techniques requiring multiple procedures.

Methods:

Patients undergoing NSM with immediate, permanent implant reconstruction were reviewed with patient demographics and outcomes analyzed.

Results:

Of 842 NSMs, 160 (19.0%) underwent permanent implant reconstruction. The average age and BMI were 46.49 years and 23.28, respectively. The majority of implants utilized were either Allergan Style 20 (47.5%) or Style 15 (22.5%). The average implant size was 376.16 milliliters (mL) and 91.3% of reconstructions utilized acellular dermal matrices (ADM). The average number of reconstructive operations was 1.31. Follow-up was 21.90 months.

The most common major complication was major mastectomy flap necrosis (8.1%). The rate of reconstructive failure was 5.6% while that for implant loss was 4.4%. The most common minor complication was minor mastectomy flap necrosis (14.4%). The rates of full thickness and partial thickness nipple necrosis were 4.4% and 7.5%, respectively.

Independent risk factors for complications were analyzed. Age greater than 50 ($p=0.0276$) and implant size greater than 400 mL ($p=0.0467$) emerged as independent predictors of overall complications. Obesity ($p=0.4073$), tobacco use ($p=0.2749$), prior radiation therapy ($p=0.4613$), and ADM ($p=0.5305$) were not associated with greater complication rates.

Conclusions:

Immediate, permanent implant reconstruction in NSM provides patients with a “breast in a day” in less than two procedures with a low complication rate.

Figures:

Table 1: Patient Demographics and Complications with Permanent, Immediate Implant Reconstruction in Nipple-Sparing Mastectomy

Patient Demographics	
Total Reconstructions	160 Breasts (19.0%)
Age (years)	46.49
BMI	23.28
Tobacco Use	Current: 3 (1.9%) Former: 40 (25.0%)
Indication	Therapeutic: 58 (36.3%) Prophylactic: 102 (63.7%)
Prior Radiation	6 (3.8%)
Mastectomy Incisions	Inframammary fold (IMF): 71 (44.4%) Lateral IMF: 40 (25.0%) Lateral: 30 (18.8%) Prior Incision: 6 (3.8%) Peri-areolar: 5 (3.1%) Wise pattern: 4 (2.5%) Superior: 2 (1.3%) Vertical: 2 (1.3%) Vertical with lateral extension: 2 (1.3%)
Implant Types	Allergan Style 20: 76 (47.5%) Allergan Style 15: 36 (22.5%) Allergan Style 410: 18 (11.3%) Unknown: 14 (8.8%) Allergan Style 10: 13 (8.1%) Allergan Style 68: 2 (1.3%)

	Allergan Style 22: 1 (0.6%)
Implant Size (mL)	376.16
Implant Coverage	AlloDerm: 139 (86.9%) Total Submuscular: 14 (8.8%) SeriScaffold: 5 (3.1%) Strattice: 2 (1.3%)
Post-operative Radiation	5 (3.1%)
Post-operative Chemotherapy	21 (13.1%)
Number of Operative Reconstructive Procedures	1.31
Follow-Up (Months)	21.90
Patient Complications	
Major Complications	Major mastectomy flap necrosis: 13 (8.1%) Reconstructive Failure: 9 (5.6%) Full-thickness nipple necrosis: 7 (4.4%) Implant Loss: 7 (4.4%) Cellulitis (intravenous antibiotics): 4 (2.5%) Hematoma (operative drainage): 1 (0.6%)
Minor Complications	Minor mastectomy flap necrosis: 23 (14.4%) Partial-thickness nipple necrosis: 12 (7.5%) Cellulitis (oral antibiotics): 3 (1.9%) Hematoma (no drainage): 1 (0.6%) Seroma: 1 (0.6%)