Clinical and Aesthetic Outcomes of Secondary Reduction Mammaplasty

Amy Chen, BS; Asha D. Nanda, BA; Shannon R. Garvey, MS; Erin J. Kim, BA; JacqueLyn R. Kinney, MD; Natalie Pawlak, MD; Daniela Lee, BS; Monica Morgenstern, MD; Ryan P. Cauley, MD, MPH

Division of Plastic and Reconstructive Surgery, Department of Surgery, Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA, USA.

AIM:

This study examines the clinical and aesthetic outcomes of secondary reduction mammaplasty with respect to operative factors.

METHODS:

All reduction mammaplasties performed by 6 surgeons across 2017-2021 at a single institution :

- **1:3 ratio** of secondary reduction mammaplasty **(SRM) cases** and randomized unmatched primary reduction mammaplasty **(PRM) controls**

Postoperative photographs graded by 5 blinded non-experts using the **13-item Validated Breast Aesthetic Scale (1)**

Univariate analysis to assess differences in outcome :

- SRM vs PRM
- SRM with known initial pedicle vs SRM with unknown initial pedicle

RESULTS:

	PRM n = 90	SRM n = 27	p
Preoperative Factors *n (%)*			
Obesity (≥30kg/m²)	42 (46.7)	12 (44.4)	1.0000
Comorbidities			
Diabetes	4 (4.4)	1 (3.7)	1.0000
Hypertension	12 (13.3)	8 (29.6)	0.0767
Hyperlipidemia	5 (5.6)	5 (18.5)	**0.0495**
Operative Factors			
Volume removed *mean, SD*	579.1, 326.0	461.0, 265.1	0.0608
Pedicle *n (%)*			
Inferior	51 (56.7)	12 (44.4)	**<0.0001**
Superior	18 (20.0)	6 (22.2)	
Superomedial	21 (23.3)	2 (7.4)	
Central	0	4 (14.8)	
Other	0	3 (11.1)	
Postoperative Factors *n (%)*			
Any complication	28 (31.1)	8 (29.6)	1.0000
Readmission	4 (4.4)	2 (7.4)	0.6202
Revision	8 (8.9)	4 (14.8)	0.4685
In clinic	6 (6.7)	0	0.3338
In OR	2 (2.2)	4 (14.8)	**0.0249**
Scarring	14 (15.6)	2 (7.4)	0.3556
Postoperative Photo Scoring *mean, SD*			
Breast symmetry	4.0, 0.6	3.5, 0.7	**0.0317**
NAC symmetry	3.9, 0.5	3.7, 0.5	0.2593
Breast position	4.1, 0.5	3.8, 0.6	0.0930
Breast volume	4.1, 0.5	3.7, 0.6	**0.0179**
Breast shape and contour	3.7, 0.4	3.3, 0.7	**0.0182**
Scar appearance	4.0, 0.7	4.0, 0.9	0.9503
Inframammary fold	4.5, 0.5	3.9, 0.6	**0.0024**
NAC position	4.3, 0.5	3.9, 0.6	**0.0241**
NAC projection	4.0, 0.7	3.4, 0.6	**0.0042**
NAC size	4.3, 0.5	3.9, 0.6	**0.0263**
NAC shape	4.3, 0.5	3.9, 0.6	0.8675
NAC color	4.4, 0.5	3.7, 0.6	0.1654

- 65% of patients with known initial pedicle underwent SRM with the same pedicle
- Patients with unknown initial pedicle underwent SRM with
  - 42.9% inferior pedicle
  - 14.3% central pedicle
  - 42.9% vertical bipedicle

	Known initial pedicle n = 20	Unknown initial pedicle n = 7	p
Operative Factors			
Volume removed *mean, SD*	432.9, 264.9	541.2, 268.6	0.8166
Incision type *n (%)*			
Wise	20 (100.0)	6 (85.7)	1.0000
Other	0	1 (14.3)	
Postoperative Factors *n (%)*			
Any complication[1]	5 (25.0)	3 (42.9)	0.6334
Readmission	2 (10.0)	0	1.0000
Revision	4 (20.0)	0	0.5453
Hypertrophic or keloid scarring	1 (5.0)	1 (14.3)	0.4587
Photographic Analysis *mean, SD*			
Breast symmetry	3.9, 0.7	4.0, 0.6	0.1033
NAC symmetry	3.8, 0.5	4.0, 0.5	0.1839
Breast position	3.7, 0.6	4.1, 0.6	0.3278
Breast volume	3.8, 0.6	3.7, 0.7	0.8166
Breast shape and contour	3.2, 0.7	3.4, 0.8	0.7280
Inframammary fold	3.9, 0.6	4.0, 0.7	0.7135
Scar appearance	4.0, 0.8	3.8, 1.1	0.7366
NAC position	3.9, 0.6	3.8, 0.8	0.7080
NAC projection	3.5, 0.7	3.3, 0.5	0.5160
NAC size	3.9, 0.7	3.8, 0.4	0.8170
NAC shape	4.3, 0.5	4.4, 0.4	0.8533
NAC color	4.6, 0.3	4.5, 0.5	0.8105

CONCLUSION:

- Patients who undergo **SRM** were significantly more likely to have **hyperlipidemia**
- Between **PRM and SRM** patients, there were **no significant differences** in rates of **complications, scarring, readmission, and revision**
- **SRM aesthetic outcomes** were **scored significantly lower** compared to scores for PRM
- An **unknown initial pedicle** was **not associated** with **worse complication rates or aesthetic outcomes**

REFERENCES:

1. Duraes EFR, Durand P, Morisada M, et al. A Novel Validated Breast Aesthetic Scale. *Plast Reconstr Surg*. 2022;149(6):1297-1308. doi:10.1097/PRS.0000000000009156