

Role of Safety Limits to Tissue Resection Weight in Adolescent Reduction Mammoplasty

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Introduction

- Reduction mammoplasty (RM) is the gold-standard treatment for symptomatic macromastia, however complications related to wound healing are common.¹
- The literature reports high tissue resection weight (TRW), ranging from >700 g to >1500 g per breast as a significant risk factor,²⁻⁶ yet the available data is largely based on adult and middle-aged patients
- This study aims to analyze TRW as a risk factor for wound healing complications in adolescent RM

Methods

- Retrospective chart review of RM cases performed between the years 2014 to 2021.
- Inclusion criteria:
 - 10 to 24 years old
 - Treatment for symptomatic macromastia only
 - No previous breast surgery, radiation, or biopsy
 - Wise pattern with inferior pedicle
- Data collected from post-op visits at 1 week, 3 months, and 6 months postoperatively

Results

Table 1. Demographic and clinical characteristics

No. patients	66
	Mean ± SD (range)
Age at surgery (yr)	18.8 ± 3.4 (13 – 24)
TRW per breast (g)	961.5 ± 530.1 (163.2 – 2555.5)
Weight (kg)	83.9 ± 18.9 (51.0 – 133.5)
BMI (kg/m ²)	32.0 ± 5.8 (19.4 – 44.8)
Category (BMI)	Value (%)
Normal (18.5 – 24.9)	8 (12.1)
Overweight (25 – 29.9)	16 (24.2)
Obesity class I (30 – 34.9)	22 (33.3)
Obesity class II (35 – 39.9)	14 (21.2)
Obesity class III (≥ 40)	6 (9.1)
Race/ethnicity	
White	13 (19.7)
African American	48 (72.7)
Hispanic	3 (4.5)
Asian	1 (1.5)
Other	1 (1.5)
ASA class	
1	39 (59.1)
2	23 (34.8)
3	4 (6.1)
Patient risk factors	
DM2	2 (3.0)
Smoking	1 (1.5)
Oral contraceptive use	2 (3.0)
Perioperative NSAID use	11 (16.7)

Table 2. Wound healing complications

	Value (%)
Delayed wound healing/dehiscence	4 (6.1)
Hematoma/seroma	4 (6.1)
Infection	0 (0)
NAC anesthesia	6 (9.1)
Necrosis	4 (6.1)
Partial loss of NAC	1 (1.5)
Full loss of NAC	0 (0)
NAC Hypopigmentation	1 (1.5)
Hypertrophic scarring	4 (6.1)
Keloid formation	5 (7.6)
Total wound complications	29 (43.9)

Table 3. Bivariate logistic regression for wound healing complications after reduction mammoplasty

Risk Factors	Estimate	95% CI		
		Lower	Upper	P-value
BMI (Kg/m²)				
≥ 30	7.35	2.13	25.35	0.002*
30 – 34.9	10.71	2.64	43.41	0.001*
35 – 39.9	6.67	1.48	30.11	0.014*
≥ 40	2.50	0.34	18.63	0.371
TRW				
> 1000 g	2.37	0.80	7.05	0.121
1000 – 1500 g	3.05	0.82	11.38	0.097
> 1500 g	1.78	0.43	7.28	0.424
ASA class > 1	0.72	0.26	1.94	0.514
OCP use	0.32	0.06	1.66	0.174
NSAID use	0.77	0.28	2.10	0.609

Discussion

- Increased BMI and current/former smoking status are the most recognized risk factors for wound healing complications, with wound dehiscence being the most common.²⁻⁷
- The physiologic effects of obesity and tobacco smoke are known to result in vascular insufficiency, oxidative stress, alteration in immune mediators, and nutritional deficiencies
- The current literature is unclear on the role of safety limits to TRW.²⁻⁷
- Our study demonstrated that a larger TRW was not associated with a higher risk of complications, indicating that other factors associated with obesity may be influencing surgical outcomes.

Conclusions

- In 66 consecutive adolescent RM procedures from 2014 to 2021, 43.9 % of patients experienced complications related to wound healing; consistent with rates in the existing literature.¹⁻⁵
- In our study, a BMI ≥ 30, 30 - 34.9, and 35 - 39.9 were found to be significant risk factors.
- **No significant risk of complications were found with TRW per breast >1000 g, 1000 – 1500 g, or >1500 g.**

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