

# Simultaneous Free Flap Breast Reconstruction Combined with Contralateral Mastopexy or Breast Reduction: A Propensity Matched NSQIP Study on Postoperative Outcomes

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## Introduction

Simultaneous free flap breast reconstruction combined with contralateral mastopexy or breast reduction can **increase patient satisfaction and minimize the need for a second procedure.**

Surgeon concerns of increases in operative time, postoperative complications, and final breast symmetry may decrease likelihood of these procedures being done concurrently.

## Purpose

Analyze postoperative outcomes of simultaneous contralateral mastopexy or breast reduction with free flap breast reconstruction.

## Methods

- ACS-NSQIP database from 2010-2020
- Two patient cohorts:
  - Free flap breast reconstruction only
  - Free flap breast reconstruction combined with contralateral mastopexy or breast reduction
- Perioperative variables assessed included demographic data, comorbidities, and perioperative data.
- Using a neighbor matching algorithm, we performed a 1:1 propensity score matching of 602 free flap breast reconstruction patients and 621 with concurrent contralateral operation patients.
- Bivariate analysis for postoperative surgical and medical complications was performed for outcomes in the propensity-matched cohort.

## Results

- 11,308 cases who underwent microsurgical free flap breast reconstruction from the ACS-NSQIP database from the beginning of 2010 to the end of 2020.
- A total of 621 patients underwent a simultaneous contralateral mastopexy or breast reduction.
- After propensity-score matching, there were **no significant differences** in patient characteristics, perioperative variables, or postoperative medical complications between the two cohorts.

Table 1. Multivariate regression analysis of unmatched variables associated with concurrent mastopexy or breast reduction.

Variable		Odds ratio Exp(B)	95% CI Lower-Upper	P value
<b>Age</b>		<b>1.032</b>	<b>1.022-1.042</b>	<b>&lt;.001</b>
<b>Year of Oper</b>		<b>0.953</b>	<b>0.924-0.983</b>	<b>.002</b>
Race	White			<.001
	Asian	0.457	0.200-1.043	0.063
	Black or African American	1.349	1.009-1.804	0.043
	<b>Hispanic</b>	<b>1.928</b>	<b>1.390-2.674</b>	<b>&lt;.001</b>
	Other	2.671	0.805-8.857	0.108
	<b>Unknown</b>	<b>4.279</b>	<b>3.513-5.211</b>	<b>&lt;.001</b>
<b>BMI</b>		<b>1.045</b>	<b>1.015-1.077</b>	<b>0.004</b>
WHO	non-obese			0.532
	Class I	0.986	0.753-1.291	0.918
	Class II	0.811	0.507-1.297	0.382
<b>Outpatient</b>		<b>1.889</b>	<b>1.362-2.622</b>	<b>&lt;.001</b>
Smoker		0.662	0.438-1.002	0.051
Diabetes	None			0.114
	Insulin	0.475	0.188-1.197	0.114
	Non-insulin	0.743	0.496-1.112	0.149
Steroid use for chronic condition		1.433	0.722-2.845	0.304
COPD		0.814	0.188-3.535	0.784
Hypertension		1.231	0.997-1.520	0.054
CHF		0.000	0.000	0.999
Specialty	Plastics			0.990
	General	0.965	0.586-1.591	0.889
	Other	0.000	0.000	0.998
ASA Class	I			0.470
	II	0.729	0.483-1.100	0.132
	III	0.732	0.479-1.119	0.150
	IV	0.542	0.145-2.025	0.362
Wound Classification	Clean			0.908
	Clean/ Contaminated	1.203	0.695-2.082	0.508
	Contaminated	0.000	0.000	0.997
	Dirty/Infected	0.708	0.089-5.613	0.743
Low Serum Albumin		1.022	0.851-1.227	0.819
<b>Total operative time</b>		<b>0.997</b>	<b>0.996-0.997</b>	<b>&lt;.001</b>
Length of total hospital stay		0.998	0.978-1.018	0.846

Table 3. Bivariate analysis of propensity score-matched 30 day postoperative complications.

	Free Flap Only (602)	Simultaneous Procedure (621)	P-value
Wound, n (%)			
Superficial SSI	27 (4.5%)	34 (5.5%)	0.427
Deep Incisional SSI	8 (1.3%)	7 (1.1%)	0.749
Organ Space SSI	2 (0.3%)	3 (0.5%)	1.000
Wound dehiscence	8 (1.3%)	5 (0.8%)	0.372
Respiratory, n (%)			
Pneumonia	2 (0.3%)	3 (0.5%)	1.000
Pulmonary embolism	4 (0.7%)	3 (0.5%)	0.722
Intubation	1 (0.2%)	-	0.492
Failure to wean	1 (0.2%)	-	0.492
Renal, n (%)			
Renal insufficiency	-	-	
Acute renal failure	-	-	
UTI	4 (0.7%)	5 (0.8%)	1.000
Cardiovascular, n (%)			
CVA/Stroke with neurological deficit	-	-	
Myocardial infarction	1 (0.2%)	2 (0.3%)	0.582
DVT requiring therapy	3 (0.5%)	4 (0.6%)	1.000
Cardiac arrest	-	-	
Transfusion	42 (7%)	34 (5.5%)	0.277
Sepsis, n (%)	3 (0.5%)	4 (0.6%)	1.000
Septic shock, n (%)	-	1 (0.2%)	1.000
Return to OR, n (%)	64 (10.6%)	56 (9.0%)	0.343
Unplanned readmission, n (%)	-	2 (0.3%)	0.372
Reoperation within 30 days, n (%)	2 (0.4%)	3 (0.7%)	0.913

## Key Points

- Simultaneous free flap breast reconstruction combined with contralateral mastopexy or breast reduction can be performed **safely and effectively** without an increase in postoperative complication rates.
- This can improve surgeon competence in offering this combination of procedures as an option to breast cancer survivors, leading to **better patient outcomes** in terms of symmetrical and aesthetically pleasing results, **reduced costs**, and **elimination of the need for a second operation.**