

No Compromise In Care: Plastic Surgery Resident Involvement On DIEP Flap Outcomes In A High-Volume Microsurgical Breast Practice

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INTRODUCTION

Resident involvement in complex microsurgical procedures is essential for advancing surgical training, yet it often raises concerns amongst patients and surgeons.

While general surgical outcomes have been studied, **the impact of resident participation in microsurgery remains underexplored.**

This study leverages a unique case control-like opportunity from a healthcare merger to evaluate plastic surgery resident involvement in a high-volume microsurgical breast practice.

METHODS

Retrospective review on **395 patients** who underwent DIEP flap reconstruction from December 2021 to May 2024. Demographics, operative details, and postoperative outcomes were analyzed.

Patients were stratified into **three cohorts**: dual attendings without a resident (n = 174), with a plastic surgery resident (n = 147), or with a general surgery resident (n = 38).

Statistical analysis was performed in R Studio using T-tests and Mann-Whitney U tests for continuous variables, Fisher's Exact tests for categorical variables, and Shapiro-Wilk tests for normality.

OBJECTIVE

To evaluate the impact of plastic surgery resident involvement on postoperative outcomes in DIEP flap breast reconstruction, addressing the gap in research on resident participation in complex microsurgery.



RESULTS

Table 1. Operative Details, With and Without Plastic Surgery Resident Involvement

	Attending Only (n = 174)	With PSU Resident (n = 147)	p
Total Operative Time, min	306	320	0.239
Left Breast Ischemia Time, min	38	44	<0.001*
Right Breast Ischemia Time, min	40	48	0.001*
Estimated Blood Loss, mL	150	150	0.055
Length of Stay, days	2	2	0.370

Table 2. Complication Rates, With and Without Plastic Surgery Resident Involvement

	Attending Only (n = 174)	With PSU Resident (n = 147)	p
Complications			
Revision Surgery Rate (%)	53.5%	51.7%	0.841
Flap Loss (%)	3.5%	1.4%	0.300
Return to OR (%)	9.8%	10.2%	1.000
DVT (%)	1.7%	0.7%	0.628
PE (%)	2.3%	0.0%	0.128
Infection, PO Antibiotics (%)	21.8%	21.1%	0.892
Infection, IV Antibiotics (%)	5.8%	2.7%	0.273
Hematoma (%)	9.2%	8.8%	1.000
Seroma (%)	6.3%	7.5%	0.825
Wound Dehiscence (%)	26.4%	25.2%	0.898
Skin Necrosis (%)	7.5%	7.5%	0.838
Fat Necrosis (%)	18.4%	23.1%	0.333

CONCLUSION

Plastic surgery resident involvement in complex microsurgical cases is safe and does not compromise patient outcomes.

The plastic surgery resident cohort showed no increase in the rates of overall complications, including flap loss, return to the operating room, hematoma, seroma, or wound infection. Additionally, the length of stay was comparable across all groups.

Flap ischemia time was statistically, though not clinically, increased, with no statistically significant increase in total operative time.