

Concurrent Co-surgeon DIEP Flap Breast Reconstructions: Feasibility and Clinical Outcomes

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BACKGROUND

- Deep inferior epigastric perforator (DIEP) is the gold standard for free flap breast reconstruction.
- Co-surgeon model for microvascular breast reconstruction has been associated with improved operative efficiency, decreased post-operative complications, and reduced cost.
- With the need to improve efficiency to meet the increasing demands of breast reconstruction, implantation of a concurrent co-surgeon team approach may be valuable for some microsurgical practices.
- Hypothesis: Performing two concurrent bilateral DIEP flap reconstructions with a co-surgeon team is feasible, increases patient access to care, and results in non-inferior clinical outcomes.

METHODS

Study Design: Single-institution, retrospective cohort study utilizing medical record review to identify all cases of co-surgeon free flap breast reconstruction from July 2019 to June 2022.

Study group: Patients who underwent bilateral DIEP flap breast reconstruction with same two co-surgeons in concurrent operating rooms on the same day.

Control group: Patients who underwent bilateral DIEP with the same two co-surgeons in one operating room within the same, preceding, or following month of each patient in the study group.

Patient Characteristics: Age, sex, BMI, tumor laterality, nodal surgery, history of radiation, timing of reconstruction, follow-up length.

Surgical Characteristics: Weight of DIEP flap and mastectomy specimen, quantity of perforators in flap, flow coupler size, trainee experience.

Primary Outcome: Minor and major 90-day post-operative complications.

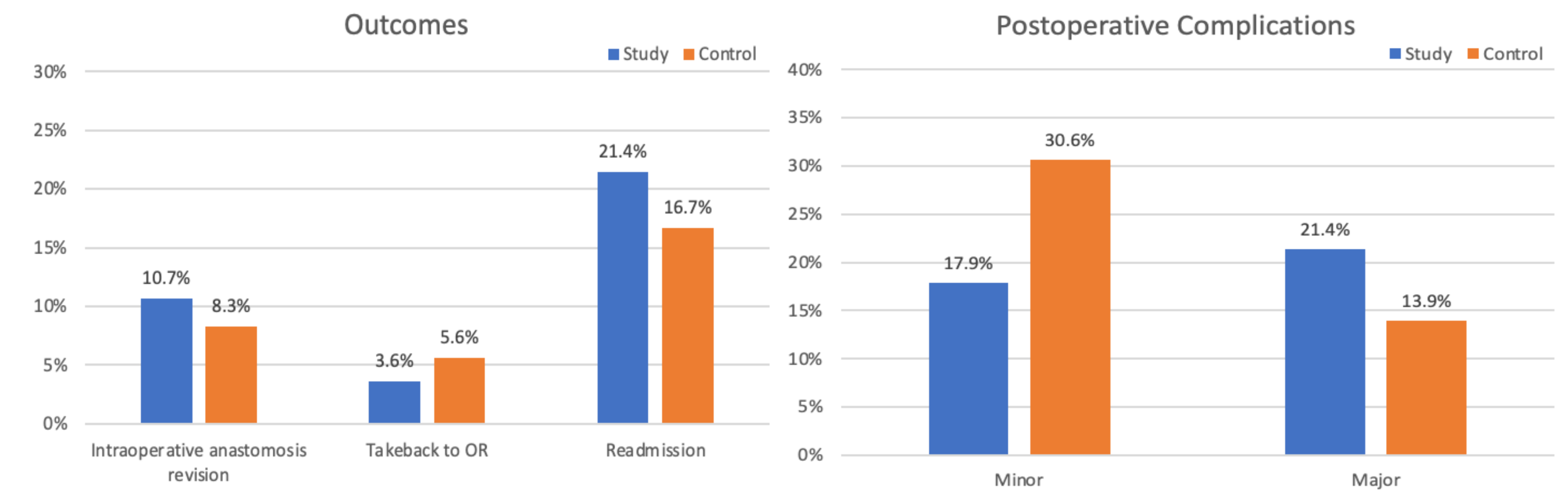
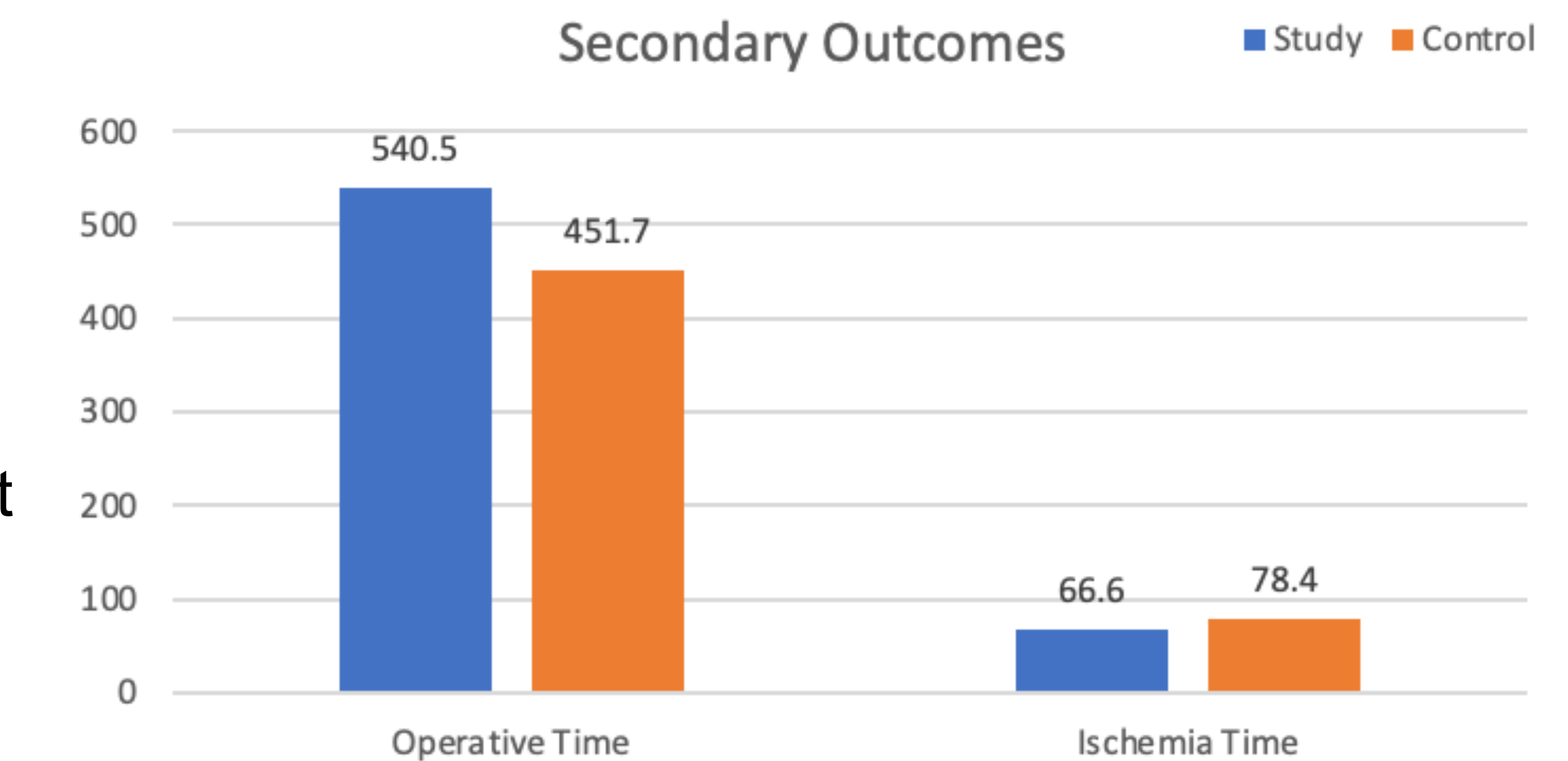
Secondary Outcome: Operative time, ischemia time, and length of stay.

Statistical Analysis: Patient characteristics and outcomes were compared by groups using chi-square/fisher's exact test for categorical variables and mann-whitney tests for continuous variables. Multivariable linear regression analysis when indicated.

RESULTS

- Study group n = 28 ; Control group n = 36
- No significant difference in:
 - Patient characteristics or post-operative complications
 - Flap loss, intraoperative anastomosis revision, takeback to OR, or readmission
 - Length of hospital stay

- Operating room time was longer in the study concurrent DIEP group versus the control non-concurrent DIEP group (540.5 vs 451.7 minutes, $p < 0.01$)
- Ischemia time was shorter in the study concurrent DIEP group versus the control non-concurrent DIEP group (66.6 vs 78.4 minutes, $p < 0.01$)



CONCLUSIONS

- Concurrent co-surgeon cases are safe and does not result in higher complication rates.
- The practice of a co-surgeon model for concurrent bilateral DIEP flap cases is feasible and improves patients access to autologous breast reconstruction.