

GLP-1s and Free Flaps Don't Mix: Emerging Risk in Reconstruction

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BROWN

AAPS 104th ANNUAL MEETING · 2026 · LIHUE, HI

BACKGROUND

GLP-1 receptor agonists are among the fastest-growing drug classes in the U.S. Systemic benefits are well characterized; implications in wound healing are not.

Free tissue transfer depends on appropriate wound healing and tissue perfusion — mechanisms possibly modulated by GLP-1 signaling, delayed gastric emptying, or rapid weight loss.

Hypothesis: Preoperative GLP-1 exposure is associated with increased postoperative complications following autologous free flap reconstruction.

METHODS

Design: Single-institution retrospective cohort, 2015–2025.

Population: Patients undergoing autologous free tissue transfer.

Exposure: Preoperative GLP-1 receptor agonist use.

Outcomes (30-day): Hospital complications · systemic complications · aspiration · donor-site infection · donor-site dehiscence.

Analysis: Multivariable logistic regression adjusted for age, BMI, smoking, diabetes, chemotherapy, radiation, and hormone therapy. Adjusted odds ratios with 95% CI; two-sided $\alpha = 0.05$.

KEY FINDING

GLP-1 users had 6– to 9– fold higher odds of postoperative complications after autologous free flap reconstruction compared to non-users.

8.7 ×

Odds of aspiration events

8.0 ×

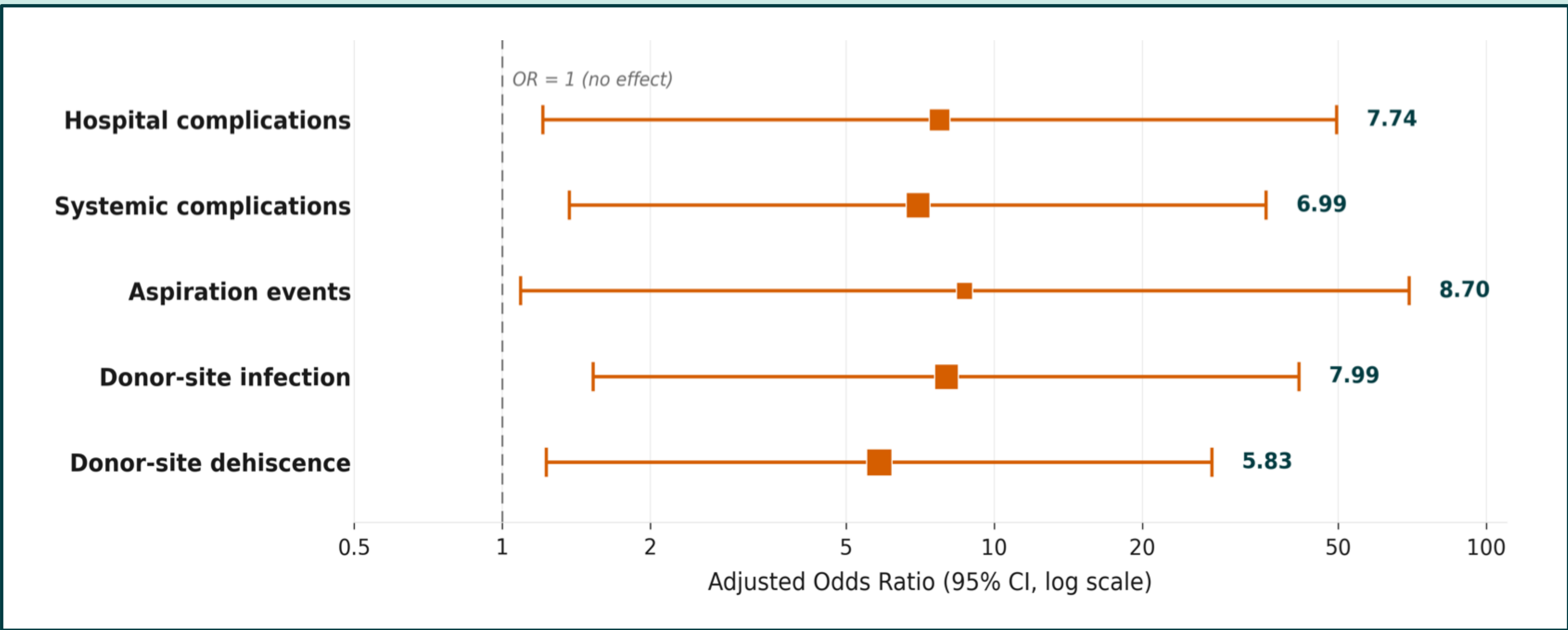
Odds of donor-site infection

7.7 ×

Odds of hospital complications

Adjusted Odds Ratios · GLP-1 Exposure vs. Non-Exposure

Multivariable logistic regression · 30-day outcomes · log scale



RESULTS

OUTCOME (30-DAY)	aOR	95% CI	p
Hospital complications	7.74	1.21 – 49.6	0.032
Systemic complications	6.99	1.37 – 35.7	0.020
Aspiration events	8.70	1.09 – 69.7	0.041
Donor-site infection	7.99	1.53 – 41.6	0.012
Donor-site dehiscence	5.83	1.23 – 27.7	0.027

Adjusted odds ratios with 95% CI; two-sided $\alpha = 0.05$.

DISCUSSION

GLP-1s emerged as an independent risk factor across all outcomes.

Plausible mechanisms: delayed gastric emptying elevates aspiration risk under anesthesia; rapid weight loss/altered nutrient intake; modulation of inflammatory and angiogenic pathways.

Limitations. Single-institution, retrospective design; small exposed cohort reflected in wide confidence intervals; GLP-1 agent, dose, and exposure duration not stratified.

Preoperative GLP-1 use warrants recognition as a potent risk factor in autologous reconstruction. Perioperative protocols must adjust to reflect this signal.