

Impact of Adjunct Regional Anesthesia on Postoperative Outcomes in Lower Extremity Microsurgical Flap Reconstruction

Mona Polavarapu, B.A.¹, Krishna Unadkat, M.S.¹, Shelley S. Noland, M.D.²

¹Mayo Clinic Alix School of Medicine, ²Department of Orthopedic Surgery

BACKGROUND

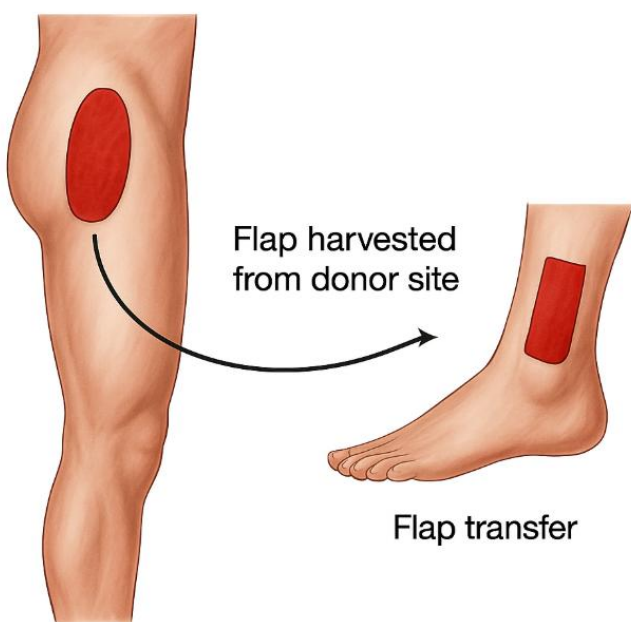
Lower-extremity microsurgical flap reconstruction is a complex procedure associated with significant postoperative pain and opioid requirements.

Regional anesthesia (RA) has been shown to improve postoperative pain control and decrease opioid requirements.

However, there is limited evidence evaluating whether adjunct RA use affects postoperative complication rates in lower-extremity reconstruction.

Objective: Assess whether adjunct RA use is associated with postoperative complications after lower-extremity microsurgical flap reconstruction.

Hypothesis: Adding RA does *not* increase postoperative complication rates.



METHODS

Design: Retrospective cohort study using the American College of Surgeons National Surgical Quality Improvement Program (ACS-NSQIP) database.

Study Period: 2013-2019, 2021-2023

Population: Adult patients (≥ 18 years) who underwent lower-extremity flap reconstruction.

Exposure: General anesthesia (GA) alone vs General + Regional anesthesia (GA + RA)

Outcomes: Wound complications (superficial, deep, organ/ space SSI; wound dehiscence)

Sepsis

Bleeding/ transfusion

Thromboembolism: DVT, PE

Hospital length of stay

Statistical Analysis: Multivariable logistic regression to evaluate association between anesthetic technique and postoperative complications.

RESULTS

A total of **2,748 patients** were included: 2,621 GA-only and 127 GA+RA.

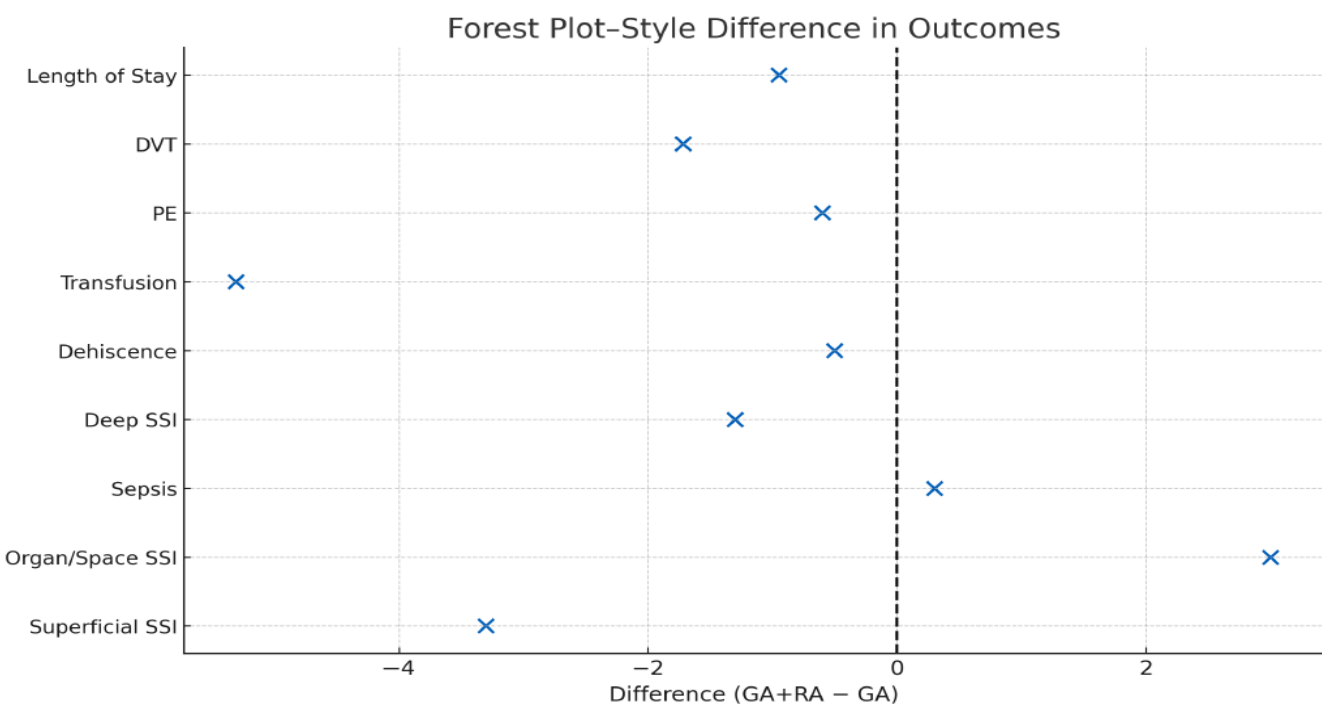
No statistically significant differences in postoperative complications between groups.

RESULTS

TABLE 1: POSTOPERATIVE COMPLICATIONS BY ANESTHETIC TECHNIQUE

Category	Outcome	GA Only (n=2621)	GA + RA (n=127)	p-value
Wound Complications	Superficial SSI	4.9%	1.6%	0.13
	Organ/Space SSI	5.7%	8.7%	0.16
	Deep SSI	3.7%	2.4%	0.63
	Dehiscence	3.6%	3.1%	1.00
Thromboembolism	PE	0.6%	0.0%	1.00
	DVT	1.72%	0.0%	0.27
Other Complications	Sepsis	4.4%	4.7%	0.87
	Bleeding/Transfusion	21.8%	16.5%	0.16
Global Outcome	Length of Stay (days)	7.26	6.31	0.50

FIGURE 1: DIFFERENCES IN COMPLICATION RATES (GA + RA VS GA ONLY)



DISCUSSION

Adjunct RA use was not associated with increased postoperative complications.

Wound-related complications were low and comparable between groups.

Superficial SSI, transfusion, and length of stay trended lower in the GA + RA group, though did not reach statistical significance.

Thromboembolic events were rare and did not differ between groups.

Limitations: small RA sample size, lack of block-specific details in NSQIP

CONCLUSIONS

Adjunct RA use **did not increase postoperative complication rates** in lower-extremity microsurgical flap reconstruction.

Findings support the **safe use of RA** for its analgesic and opioid-sparing benefits in lower-extremity reconstruction.

Future directions: prospective studies with block-specific details

REFERENCES

