

Long-term Outcomes of Reconstruction After Partial Foot Amputations Using Free Tissue Transfer

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Background

- Partial foot amputations can preserve foot length and functional gait in patients with chronic foot wounds.
- Coverage with free tissue transfer (FTT) is an alternative to below-knee amputation (BKA).

Study Aims:

- To evaluate outcomes of FTT coverage of partial foot amputations in a highly comorbid population with chronic foot wounds.
- To identify independent predictors for secondary BKA long-term



Methods

- Retrospective review of patients who underwent FTT after partial foot amputations from 2011 to 2021
- Primary outcomes: flap success, complications, limb salvage and ambulatory status

Table 1. Perioperative factors and long-term outcomes

Variable	Total (n=38)	Limb Salvage (n=31)	Amputation (n=7)	p-value
Age (yr)	57.0 ± 11.1	57.7 ± 11.0	54.1 ± 11.7	0.454
BMI (kg/m ²)	27.1 ± 6.3	26.5 ± 6.4	29.4 ± 5.5	0.194
Diabetes	30 (78.9%)	23 (74.2%)	7 (100%)	0.212
PVD	20 (52.6%)	16 (41.6%)	4 (57.1%)	0.563
Wound location				
Forefoot	25 (65.8%)	23 (74.2%)	2 (28.6%)	0.034
Midfoot	10 (26.3%)	9 (29.0%)	1 (14.3%)	0.650
Hindfoot	9 (23.7%)	5 (16.1%)	4 (57.1%)	0.041
LE Angiography				0.448
1 VRO	5 (13.2%)	3 (9.7%)	2 (28.6%)	
2 VRO	14 (36.8%)	12 (38.7%)	2 (28.6%)	
3 VRO	19 (50.0%)	16 (51.6%)	3 (42.8%)	
Postoperative Infection	11 (28.9%)	6 (19.4%)	5 (71.4%)	0.014
Partial Flap Necrosis	8 (21.1%)	4 (12.9%)	4 (57.1%)	0.010
Flap Success	36 (94.7%)	31 (100%)	5 (71.4%)	0.030
Ambulatory	29 (76.3%)	27 (79.4%)	2 (28.6%)	0.004
Follow up duration (mo)	24.9 ± 23.5	23.6 ± 20.8	30.4 ± 34.5	0.850

BMI: body mass index; PVD; peripheral vascular disease; VRO: vessel run-off

Table 2. Independent predictors of secondary amputation

Risk Factor	Odds Ratio	95% CI	p-value
Hindfoot	13.1	0.96 – 179.08	0.054
Postoperative Infection	15.9	1.23 – 205.14	0.034
Partial Flap Necrosis	26.9	1.53 – 473.39	0.024

Conclusions

- FTT coverage of partial foot amputations offers long-term limb salvage to patients with chronic foot wounds.
- Larger studies are warranted to identify additional perioperative risk factors for eventual BKA and to evaluate patient-reported functional outcomes.

