

Outcomes Of Lower Extremity Free Tissue Transfer For Limb Salvage In Elderly Patients: A Retrospective Review Of Outcomes In Septuagenarians And Octogenarians

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Introduction

- Chronic lower extremity (LE) wounds disproportionately affect **older adults** due to vascular disease, diabetes, and functional decline.
- LE free tissue transfer (FTT) is a cornerstone of modern limb salvage, allowing for durable reconstruction in complex wounds.
- The U.S. **population ≥70 years is rapidly growing**, with increasing surgical needs and comorbidities.
- Elderly patients often face delays or exclusion from limb salvage pathways due to perceived surgical risk.
- Data on **microsurgical outcomes in elderly LE reconstruction patients remains limited and heterogeneous**.
- As life expectancy increases, it is **essential to re-evaluate surgical candidacy in older patients** using functional, not age-based, criteria.

Objective

To evaluate limb salvage, flap success, and functional outcomes in septuagenarians and octogenarians undergoing LE free tissue transfer in order to determine the safety and feasibility of microsurgical limb salvage in this understudied yet growing group.

Methods

- Retrospective cohort study at a single tertiary limb salvage center (July 2011–October 2024).
- Inclusion: Patients aged ≥70 undergoing LE FTT.
- Patients stratified by age group:
 - Septuagenarians (70–79 years)**
 - Octogenarians (80+ years)**
- Outcomes: flap success, postoperative complications, major amputation, ambulatory status at follow-up, and mortality.

Results

During the study period, **64 LE FTT were performed in 63 patients aged 70+ years of age**

Septuagenarians: 56 (88.9%) and Octogenarians: 7 (11.1%)

Cohort Characteristics

- Diabetes: 53.1%
- Peripheral Arterial Disease: 64.1%
- Chronic Kidney Disease: 14.1%
- Median Charlson Comorbidity Index: 5

Postoperative Length of Stay (median):

- Septuagenarians: 15 days [IQR 11]
- Octogenarians: 14 days [IQR 10]

(p=0.954)

Clinical Outcomes

Flap complications:

- 29.8% (septuagenarians)
- 42.9% (octogenarians) (p=0.668)

Major limb amputation:

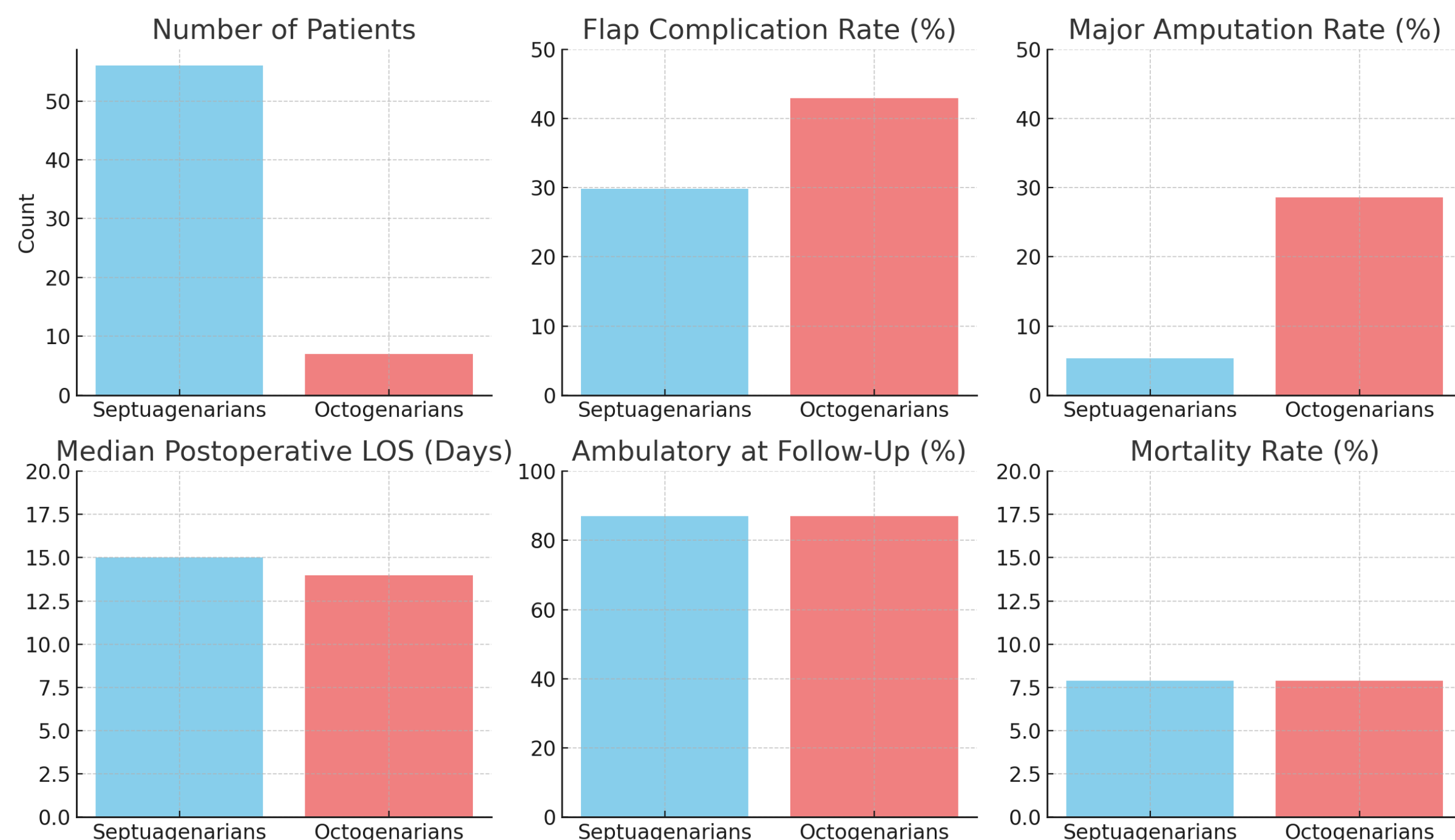
- 5.3% (septuagenarians)
- 28.6% (octogenarians) (p=0.088)

Ambulatory at follow-up: 87.1%

Mortality rate: 7.9% (p=0.457)

Median follow-up duration: 9.2 months [IQR 23.2]

Key Outcomes by Age Group in Elderly LE FTT Patients



Discussion

- Elderly patients ≥70 years can safely undergo LE FTT with high microsurgical success and functional recovery.
- Flap success (96.9%) and ambulation (87.1%) rates in this elderly cohort rival outcomes reported in younger populations.
- Though not statistically significant, octogenarians trended toward higher complication and amputation rates, warranting further investigation.
- Importantly, length of stay and mortality were comparable between septuagenarians and octogenarians.
- These findings challenge age-based exclusions and support individualized surgical decision-making based on physiologic reserve, not chronological age.
- As limb salvage demand grows among older adults, these data reinforce the viability of FTT in this expanding patient population.

Conclusion

LE free tissue transfer in patients ≥70 years results in high flap success, limb salvage, and postoperative ambulation. Age alone should not exclude elderly patients from microsurgical reconstruction. Further studies should explore perioperative optimization and complication prevention in this population.

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