

FACTORS AFFECTING COMPOSITE GRAFT OUTCOMES IN FINGER TIP AMPUTATION

Ja Hea Gu MD, PhD

Dankook University Hospital, Cheonan, South Korea

Introduction - objective

Fingertip amputations : a composite graft - one of treatment option.

- We report the outcomes and factors affecting graft outcomes in digital tip amputations to determine the efficacy of this treatment modality and present the evidence of its use.

Materials & Methods

In the retrospective study, 168 digital amputations in 163 patients for 7 years.

Age, level, pattern of injury, bony injury, injury type, injury and outcomes were reviewed.

Outcomes

Grade 4 : complete survival / Grade 3: partial survival , healed by 2 intention within 6 weeks / Grade 2: partial flap survival , healed with surgery or resulting complications / Grade 1: total flap loss

Result

| | | | | |
|----------------|-----------------------------|-----|--------|-------|
| → Age | <18 | 17 | 52.9% | 0.002 |
| | >18 | 151 | 31.8% | |
| → level | tip | 30 | 80% | 0.005 |
| | tip to mid-nail | 84 | 32.14% | |
| | mid-nail to nail fold | 54 | 14.8% | |
| Injury Pattern | nail fold to distal phalanx | 2 | 0% | 0.294 |
| | Transverse | 114 | 41.23% | |
| | Volar oblique | 41 | 21.95% | |
| → Bone | Dorsal oblique | 13 | 7.69% | 0.007 |
| | Involved | 108 | 19.44% | |
| Wound | Noninvolved | 60 | 63.33% | 0.058 |
| | Crushed | 120 | 20.83% | |
| Time | Clean-cut | 48 | 70.83% | 0.146 |
| | < 8hrs | 52 | 30.95% | |
| | 8~24 hrs | 80 | 47.62% | |
| → Smoking | >24hrs | 36 | 21.43% | 0.002 |
| | Smoker | 58 | 15.40% | |
| | Non-smoker | 110 | 63.6% | |

| Factors | Odds Ratio | 95%CI | P-Value |
|--------------|------------|--------------|---------|
| Age >18 | 1.042 | 1.015~1.070 | 0.002 |
| Level > 2 | 9.026 | 1.806~45.115 | 0.007 |
| Bone involve | 5.873 | 1.621~21.279 | 0.007 |
| Smoking | 12.10 | 1.91~76.22 | 0.008 |

33.93% : complete survival
4.17% : total necrosis
Complication
nail deformity(7) &
sensory difficulty (5).

Conclusion

- Survival rates were increased in young, non-smoking patients with a clean cut, lack of bony involvement, and a more distal injury.
- Even when partial necrosis occurred, the graft acted as a biological dressing with minimal risk until subsequent treatment was performed.
- Survival rates may improve if certain criteria are met to qualify for a composite tissue graft, which could be an alternative treatment option for selected patient*