

MINI SYMPOSIUM: Orthopaedic Surgeons Taking Ownership of Extremity Trauma: Soft Tissue Coverage

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What Needs a Free Flap and How to Get Ready

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- I. Indications for Free Tissue Transfer in the Lower Extremity**
 - A. Classic indications for flap coverage – When there’s “no other option”**
 - a. Exposed tendon without paratenon
 - b. Exposed bone
 - c. Distal 1/3 tibia
 - B. Expanded concepts of free tissue transfer – When it’s the “best option”**
 - a. Minimize donor site morbidity (reconstructive elevator)
 - b. Large defect size -> minimize risk for contractures
 - c. Bring in well-vascularized tissue when local tissues are insufficient/traumatized
 - d. Salvage of a failing pedicled flap – convert to a free flap
 - e. Following failure of local muscle or skin flap

- II. How to Get Ready for Free Tissue Transfer and Avoid Pitfalls**
 - A.** Debride, debride, debride - early and often! Once there is infection, switch from trauma protocol to infectious protocol
 - B.** Early consultation and team approach for bone and soft tissue reconstruction
 - a. Early coverage
 - b. Avoid burning bridges for later reconstruction
 - i. Preserve neurovascular bundles, veins and tendons
 - ii. Longitudinal incisions
 - c. Communication allows for planning for reconstruction at stage of initial debridement
 - i. Consider soft tissue, bone and function simultaneously
 - C.** Choose flaps with which you are familiar (workhorse flaps)
 - D.** Minimize risk of vasospasm of recipient vessels
 - a. Perform free tissue transfer within 1 week of injury
 - b. Regional anesthesia
 - c. Careful manipulation of vessels
 - d. End-side anastomosis

III. Controversies in Lower Extremity Free Tissue Transfer

- A. Does vacuum assisted wound closure mitigate need for free flap?
 - a. *Not* a replacement for soft tissue coverage
 - b. *Does not* lengthen the time to coverage
- B. When should an open fracture be covered?
 - a. “Emergently” *versus* “Golden period” (3-5 days) *versus* “Early” (<7-10 days) coverage
 - b. My answer: < 1 week
- C. Are muscle or skin flaps better for open fracture coverage?
 - a. In favor of muscle: experimental evidence that it helps against infection
 - b. In favor of muscle: lower complication rate in extremity
 - c. In favor of skin: fasciocutaneous flaps are easier in cases of re-exploration for hardware, bone graft, etc.
 - d. In favor of skin: single donor site, no skin graft

References

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