Single-Stage Bipedicle Local Tissue Transfer and Skin Graft for Achilles Tendon Surgery Wound Complications

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Disclosure

- No conflicts to disclose

- Single-Stage Bipedicle Local Tissue Transfer and Skin Graft for Achilles Tendon Surgery
  Wound Complications
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Our disclosures are in the final AOFAS Mobile App.
We have no potential conflicts with this presentation.
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- Achilles wound complications and posterior heel defects are difficult to treat

- Typically require tertiary care referrals for microvascular free tissue transfers

- The following soft tissue local transfer technique described here allows for primary coverage by an orthopedic foot and ankle surgeon that is reliable and durable
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- Case 1: insertional wound breakdown after Achilles debridement and repair to the calcaneus
- Case 2: venous stasis ulcer with calcaneal exposure in a diabetic patient with vasculopathy
- Case 3: wound breakdown following midsubstance Achilles tendon repair
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Surgical Technique:
- Position: prone
- Prep entire leg to allow for thigh skin graft harvest
- Incision is made over the lateral ankle and hindfoot immediately posterior to the lateral malleolus but anterior to the peroneal artery and sural nerve

Pearls:
- An intraoperative Doppler can be used to identify the path of the artery (Figure 1)
- Length of the lateral incision should be approximately 25% greater than the proximal to distal measurement of the posterior wound (Figure 2)
Surgical Technique continued:

- Create full-thickness skin flap carrying dissection to the depth of the fascia
  - Take care to identify and protect sural nerve at this step
- Transpose mobile flap to cover posterior defect
  - If flap is under tension, extend lateral based incision proximally
  - We recommend not extending distal aspect of incision past the border of the lateral and glabrous plantar skin
- Deflate tourniquet and ensure bleeding edges of flap
- Close posterior wound with subcuticular 2-0 interrupted, buried dissolvable monofilament suture
- Skin is closed with 2-0 interrupted non-dissolvable monofilament suture
- Apply STSG to lateral based wound from posterior thigh
Surgical Technique and aftercare continued:

- Discharged immediately in a posterior slab splint
- Operative dressings are removed 5-7 days after surgery and the patient is transitioned to a below knee cast with triple antibiotic ointment and a sheet of Adaptic applied to the skin graft prior to cast application
- Sutures are removed 3-4 weeks after surgery and rehabilitation can be initiated based upon the surgeon’s preference without concern for the surgical incision at this point (Figures 4 and 5)
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Results:

- Case 1: The incisions healed uneventfully, and the patient was transitioned to a CAM walker boot 1 month post procedure and function was limited to Achilles repair and rehabilitation protocols alone.

- Case 2: venous stasis ulcer with calcaneal exposure in a diabetic patient with vasculopathy

- Case 3: wound breakdown following midsubstance Achilles tendon repair
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- **Conclusions:**
  - The bipedicled fasciocutaneous flap described here offers a predictable single stage procedure that can be accomplished by an orthopaedic foot and ankle surgeon without resources of a tertiary care center.
    - Short operative times
    - Customizable flap dependent on size of defect
    - The flap is durable to withstand local tissue stresses required for early ambulation
  
  - Despite its reliability, patients require careful follow-up to manage underlying comorbid conditions that may complicate wound healing.
References


