

Utilization of a Next Generation Decellularized Dermal Allograft to Augment the Reconstruction of an Equinus Deformity due to Failed Achilles Tendon Repair

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Surgical Summary

Clinical Presentation:

- 56-year-old male who previously underwent a left Achilles tendon repair that failed due to infection.
- The patient presented with severe scarring and equinus deformity at the time of office visit.

Intraoperative Findings:

- Severe scarring of ruptured Achilles tendon (Figure 1).

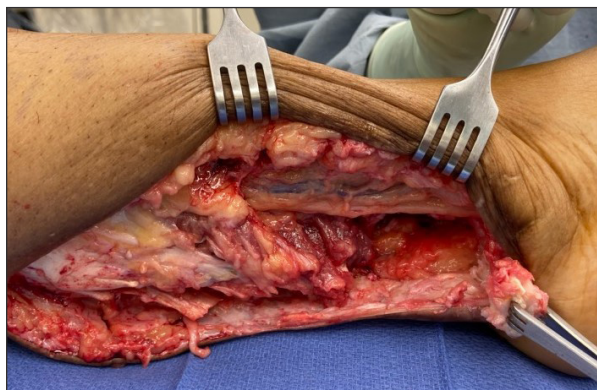


Figure 1. Severe scarring of ruptured Achilles tendon.



Figure 2. Prior to implantation of tibialis anterior allograft.

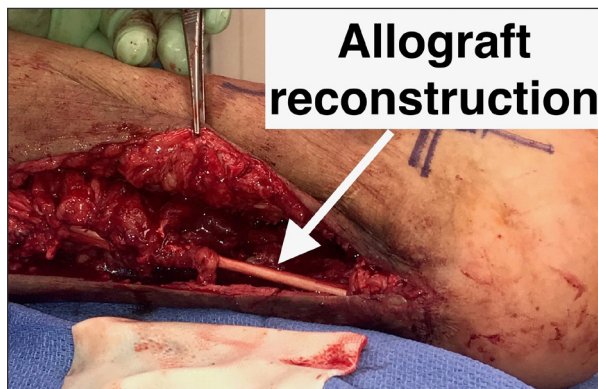


Figure 3. After implantation of tibialis anterior allograft.

Surgeon Perspective:

“This patient commenced early, controlled range of motion and ambulation. DermaPure provided a large scaffold that reinforced the patient's Achilles tendon repair. A large gauge suture was utilized without any suture pull-out.”

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Surgical Procedure:

- Equinus release required scar excision, extensive resection of deep fibrosis and Achilles tendon, posterior ankle and subtalar joint capsulotomies, and release of posterior tibial neurovascular bundle. This resulted in a large defect.
- Tibialis anterior tendon allograft was used to span the defect (Figures 2 & 3).
- Two 7 cm x 10 cm DermaPure[®] decellularized dermal allografts were used to encircle the tibialis anterior tendon allograft, attached distally to the Achilles tendon insertional stump/periosteal sleeve of the calcaneus. Proximally, the construct of the tendon allograft to the DermaPure[®] graft was expanded and subsequently sutured onto the origin of the triceps surae aponeurosis (Figure 4).
- Closed using a retraction suture from the DermaPure[®] graft onto the deep crural fascia, thus relieving pressure on the primary suture line and facilitating ease of closure (Figure 5).

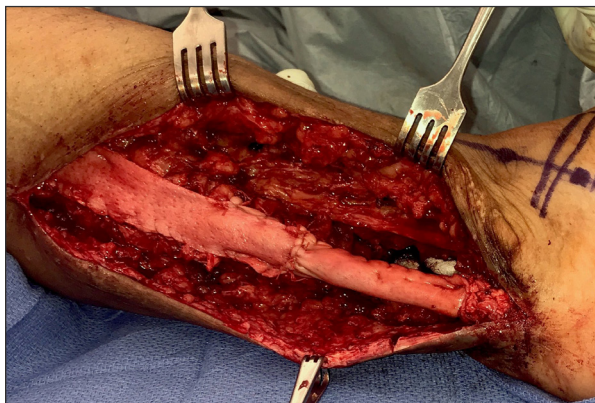


Figure 4. DermaPure[®] reinforcement of repair.



Figure 5. Closure using a retraction suture from the DermaPure[®] graft onto the deep crural fascia, thus relieving pressure on the primary suture line.

Post-Operative Notes:

- Non-weightbearing for four weeks in neutral dorsiflexion, then began partial weightbearing with active ROM limited to an arc of 5° dorsiflexion.
- Full weightbearing in boot at six weeks.
- At eight weeks, full ankle rehab initiated, and patient was weaned out of the boot over two weeks.
- At six months, patient ambulated without boot, 4/5 strength in ankle and able to achieve 7° dorsiflexion.

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