DermaClose™ RC Case Study # 21

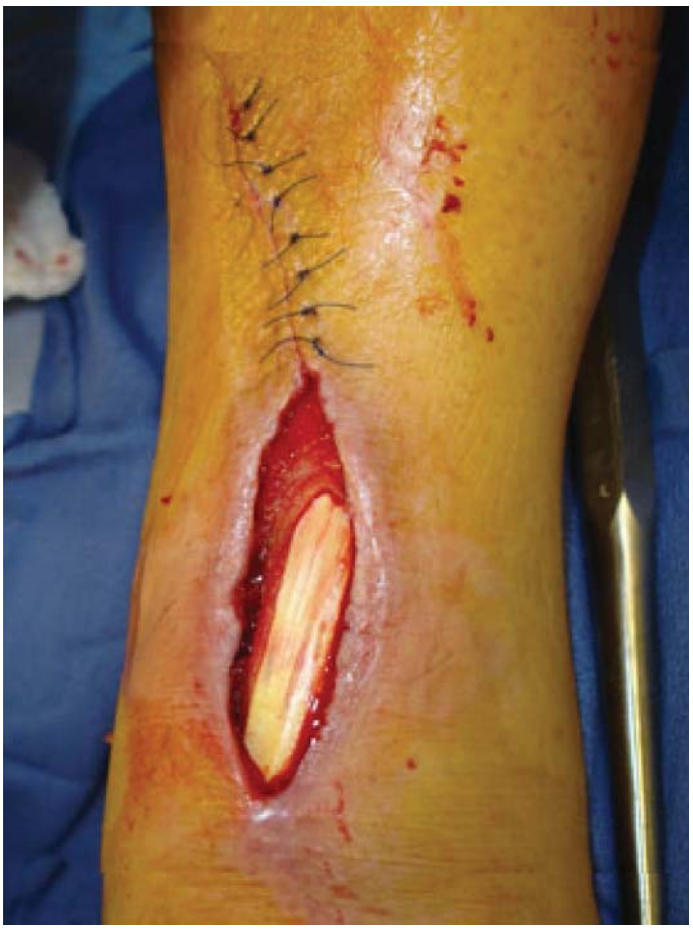
John Steinberg DPM – Assistant Professor, Department of Plastic Surgery Georgetown University School of Medicine

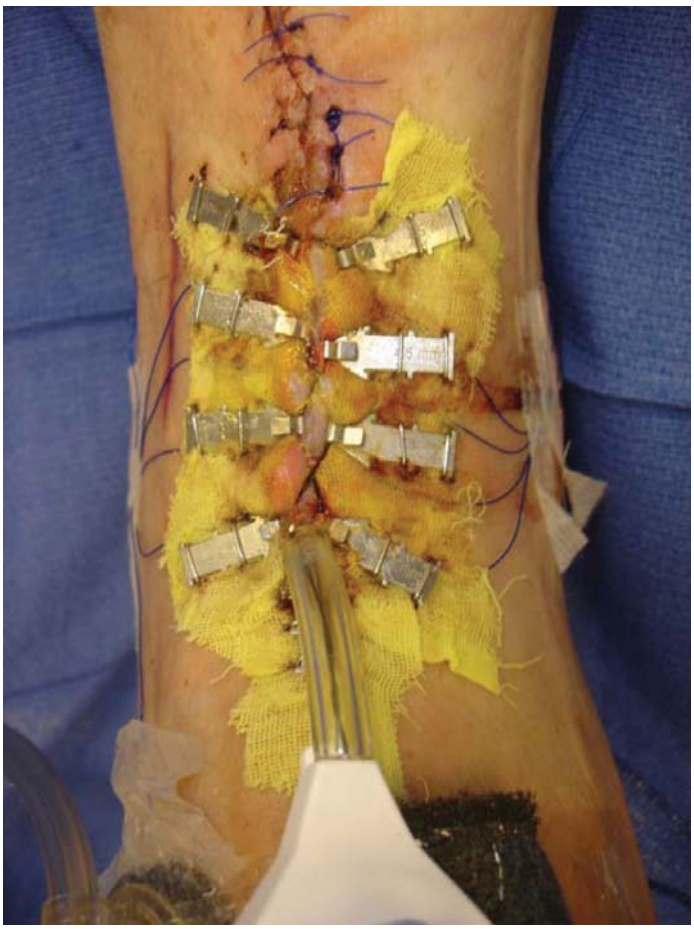
This patient is a 54 year old male with Buerger's disease and a non-healing ischemic ulcer to the dorsum of his left hallux for almost two years. He has a 30 pack per year smoking history and quit a year ago. An angiogram performed in July of this year showed severe medium and small vessel disease of the left lower extremity. Prior to any hallux wound intervention, a popliteal to anterior tibialis artery bypass with PTFE was performed. Following this revascularization, the hallux wound was debrided in the OR and a bone biopsy revealed no evident osteomyelitis.

Three weeks status post revascularization, the patient developed cellulitis and abscess to the anterior ankle with failed PTFE graft. The patient was re-admitted to the hospital and the infected graft was removed leaving a 7cm curvilinear incision open with exposed tibialis anterior tendon.

The patient was taken to the operating room three days s/p removal of the graft leaving a 7cm curvilinear incision open with exposed tibialis anterior tendon. The patient was taken to the operating room three days s/p removal of the graft for wound debridement and partial closure with Prolene.

The distal 60% of the anterior ankle wound was left open and a negative pressure wound therapy dressing was applied using the white (polyvinyl alcohol) foam in order to keep the exposed TA tendon from desiccating. The wound was noted to expose deep fascia with healthy tendon exposed and no acute signs of infection. Deep aerobic and anaerobic soft tissue cultures show no growth post debridement. Three days later, the patient was returned to the OR for additional debridement and pulse lavage. The wound margins were not able to be approximated over the TA tendon.





DERMAClose™ RC
Continuous External Tissue Expander

WOUNDCARE™ TECHNOLOGIES
"Expanding Your Clinical Options"

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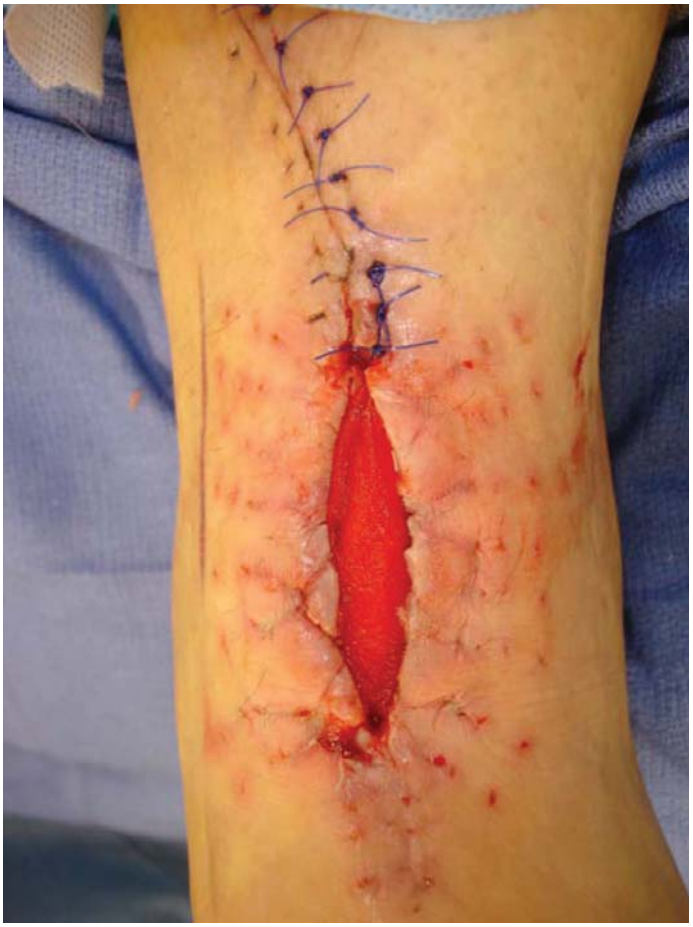
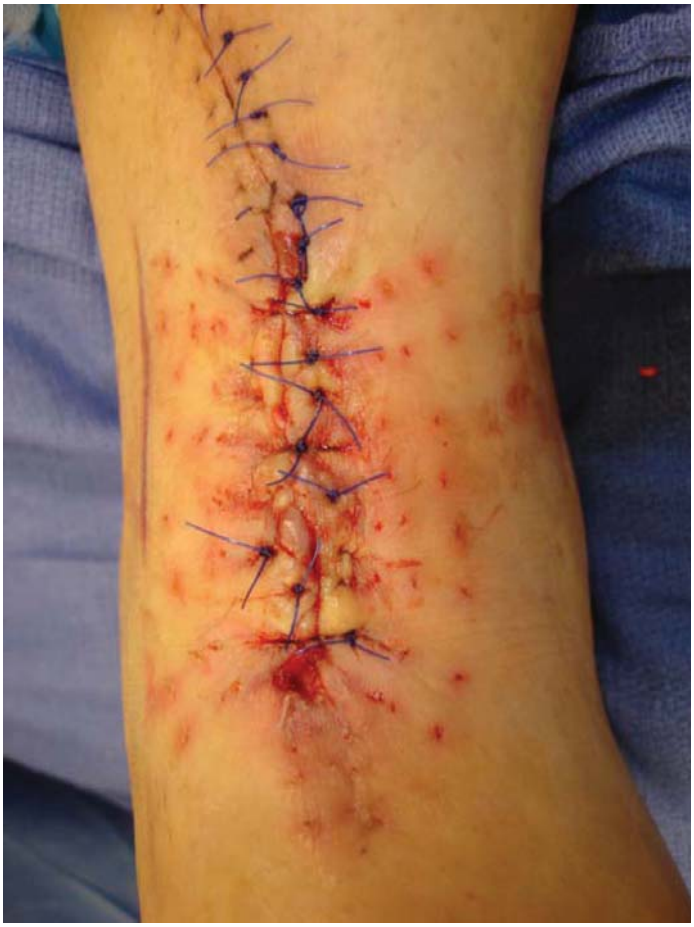
With the clean anterior ankle wound now showing early granulation and progress, we wanted an option that would move the case to closure as quickly as possible and therefore decrease re-infection opportunity. The tendon remained viable and the wound base was debrided again with skin edges revised and undermined for mobility. We then applied an external tissue expander device (DermaClose RC™) to the wound margins after laying down a protective sheet of Xeroform™ to the periwound surface. We used 4 skin anchors medially, 4 skin anchors laterally, and 1 skin anchor distally to secure the device. These anchors were all secured to the skin with 2 staples each and were positioned approx 1 cm from the skin margin. The DermaClose RC tension line was configured in a 'shoe-lace' pattern across the wound and tensioned to 1.2 kilograms. The site was dressed with Aquacel AG™ and Mepilex AG™ for moisture retention and protection.

We returned the patient to the OR 4 days later. The DermaClose device and skin anchors were removed and the wound site prepped and draped in usual fashion. We revised and debrided the wound margins, noting the continued viability of the tendon and negative growth from deep tissue cultures. Following pulse-lavage of the site with 3 liters of normal saline, we placed Integra TenoGlide™ tendon protector (without silicone) around the tendon and secured this with Monocryl suture to facilitate tendon gliding. We then closed the wound site primarily under minimal tension using 2.0 Prolene in retention and vertical mattress sutures.

The wound was dressed with Mepitel™, Acticoat™ and an incisional negative pressure wound therapy dressing was applied over the area for 24 hours prior to discharge from the hospital.





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