

INTRODUCTION

Management of ulcerations with exposed tendons in the distal leg and foot are associated with significant morbidity and high rates of proximal amputation. Development of granulation tissue and re-epithelialization over exposed tendons presents a unique treatment challenge, owing to the dysvascular nature of tendons and constant mobility in the wound bed. There is little research pertaining to the treatment of these wounds. Here we present a case involving extensive soft tissue loss with an exposed necrotic Achilles tendon, secondary to necrotizing fasciitis. Our treatment consisted of excision of the nonviable tendon to eliminate motion over the area and allow for a better perfused wound bed to enable graft adherence. We supplemented this with serial debridement, staged graft applications and local wound care.

METHODS

A 69-year-old male with a past medical history of diabetes, end stage renal disease on dialysis, anemia, liver cirrhosis, hypertension, hyperlipidemia, and hypothyroidism presented with necrotizing fasciitis of posterior right lower extremity. General surgery performed the initial emergent surgical intervention. Due to the extensive soft tissue loss and multiple comorbidities, the patient was recommended a below-knee-amputation. He was referred to a wound care specialist for a second opinion. The wound at this time measured 22cm x 7.0cm x 0.7cm with an exposed necrotic Achilles tendon (Figure 1). The patient underwent staged debridements, with excision of the exposed necrotic tendon coupled with application of a bi-layered skin substitute graft and negative pressure therapy. One month later, the patient then received two staged applications of human bioactive split thickness allograft (Figure 3). Following application of human bioactive split thickness allograft, the patient was closely monitored weekly where bedside debridements were performed, along with continued local wound care (Figure 4). Re-epithelialization achieved at seven months (Figure 5).

CLINICAL IMAGES



Fig. 1 – Initial Presentation



Fig. 2 – Bi-layered skin substitute graft



Fig. 3 – Human bioactive split-thickness allograft



Fig. 4 – Granular wound bed (5 months of wound care)



Fig 5. – Final Follow-up

RESULTS AND DISCUSSION

Necrotizing fasciitis is a rare, rapidly spreading soft tissue infection that can lead to significant morbidity and mortality, and requires prompt diagnosis and treatment.¹ Similarly, ulcerations with exposed tendons tend to have poor clinical outcomes, with difficulty in re-epithelialization due to mobility and avascularity of the tendon.^{2,3} Excision of the exposed devitalized tendon can be considered a viable option to facilitate wound closure and allow for expedited graft adherence. Historically however, excision of tendons has been shown to lead to significant loss of function.

Wei Yuan et al presented a small case series in which the Achilles tendon was excised, ultimately leading to a well perfused wound bed and a smaller soft tissue defect to enable wound closure, with a retained functional outcome.⁴ Older patients with lower functional demands and significant comorbidities can benefit from excision of exposed tendons without great loss of function.

Our patient retained the ability to ambulate and returned to pre-surgical activities of daily living. Advancement in wound care has provided a platform for effective limb salvage options which should be exhausted before considering limb amputation. Emergent surgical intervention, excision of the exposed tendon, and advanced therapies in wound care in our case led to limb preservation.

REFERENCES

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