Medial Ankle Chainsaw Trauma: What Wasn’t Severed?

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After obtaining hemostasis and identification of all lacerated soft tissues, thorough irrigation and débridement of the wound was performed.2-4 Both the posterior tibial artery and veins were devitalized and deemed non-reconstructable. Intra-operative Doppler examination revealed audible signal to the medial and lateral plantar, anterior tibial and peroneal arteries with no evidence of ischemia. Therefore, ligation of the severed vessels was completed.1 Under loupe magnification the two segments of the tibial nerve were freshened and sutured into collagen based nerve conduits.3-4 The flexor hallucis longus tendon underwent retubularization. At 18-months post-operative the patient has regained sensation to the proximal two-thirds of the plantar foot with a Tinel’s sign to the digital level. No sudomotor changes, musculoskeletal deformities or weakness were noted at the most recent follow-up. The patient continues with use of gabapentin and tramadol for occasional neurogenic symptoms.

RESULTS

A

Analytical and Discussion

Chainsaw injuries can have devastating effects on soft tissue and bone alike. Prompt exploration, assessment and repair of the involved tissues in the operating room is necessary due to the contaminated nature of these injuries and high velocity trauma.1

CASE STUDY

We present a 54-year old tobacco dependent woman with a history complicated by Raynaud’s disease who suffered a traumatic chainsaw injury to the medial ankle. Following cursory evaluation and ligature of exposed vessels at an outside hospital, the patient was transferred to our facility for definitive care. She was taken to the operating room, revealing a longitudinal laceration about the medial ankle with exposed and severed posterior tibial artery, posterior tibial veins and tibial nerve, as well as an incomplete laceration of the flexor hallucis longus tendon.

Figure 1: A-G: Intra-operative photographs demonstrating repair; H: post-operative photograph. (A) Initial presentation following patient transfer, (B) Flexor hallucis longus tendon laceration, (C) Retubularized flexor hallucis longus tendon, (D) Identification of the tibial nerve segments and defect, (E) Collagen based nerve conduit, (F) Nerve segments reapproximated using collagen based nerve conduit, (G) Primary wound closure, (H) Clinical photograph 14-months post-operative.

Traumatic lacerations involving chainsaws are devastating injuries especially when they involve a neurovascular bundle.2-4 The current patient presented with a complicated medical history including Raynaud’s disease, tobacco dependence and transected neurovascular structures. Prompt evaluation and treatment allowed for primary repair of the lacerated tibial nerve with a collagen based nerve conduit that restored meaningful sensation to the plantar foot in this patient.

References