

Advancing Health

A CASE STUDY from MedStar Washington Hospital Center

Limb Salvage:

A Staged, Team Approach to Amputation Prevention

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Abstract

Patients with neuropathy, or loss of sensation in the feet, can develop serious and debilitating foot and ankle problems, which become even more problematic in patients with other chronic conditions, such as diabetes. In this case study, we review the effectiveness of a multidisciplinary team approach with staged surgical interventions, to heal the deformed ankle and infected ulcerations of a 55-year-old female who presented with a swollen ankle.



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CASE STUDY

Limb Salvage

Patient Presentation

- 55-year-old female presented with complaint of a warm and swollen left ankle.
- She had history of poorly controlled type 2 diabetes with peripheral neuropathy, chronic kidney disease, hypertension, hyperlipidemia, gout and previous toe amputation.
- There were recently developed ulcerations on the medial and lateral aspect of her left ankle. She recalled twisting her ankle several months prior, and then noticed gradual development of swelling and redness.
- Edematous left ankle with open, draining wounds on the medial and lateral ankle.
- She had absent sensation to light touch on exam, due to peripheral neuropathy resulting from diabetes.
- X-rays of the foot and ankle revealed bony collapse and destruction of the ankle and hindfoot.

Diagnosis

- Charcot neuroarthropathy and possible deep infection.

Treatment

- Infectious disease specialists provided IV antibiotic management consult.
- Patient was taken to the operating room urgently for incision and drainage. The ulcerations extended down to bone. Deep bone and tissue cultures were taken.
- She underwent multiple staged surgical debridements, and an external fixator was applied for

fusion of her ankle, in order to correct the Charcot deformity.

- Negative-pressure therapy was applied to the medial and lateral ankle wounds, to assist in granulation tissue formation over the wound defects.
- Vascular specialists evaluated her arterial flow, to ensure it was adequate for healing.

Outcomes

- Post-procedure, physical therapists taught her to transfer without bearing weight on her left lower extremity. Upon discharge, she received a six-week course of IV antibiotic therapy at a skilled nursing facility, with regular follow-up and evaluation from Podiatric Surgery.
- Twelve weeks after her final discharge, she had split thickness skin graft application over her wounds and removal of her external fixator. Five months post-op, the wounds and ankle are healed. She was fit for a custom brace, to protect her ankle during ambulation.

Conclusion

- A staged team approach is critical for complex limb salvage cases such as this, where there is not only bony destruction from the Charcot neuroarthropathy, but also wound development and concern for deep infection. Staged debridement to remove infection, osseous stabilization and adequate arterial flow all contribute to the best possible outcome.



"In complex cases such as this one, a team approach is critical to ensure optimal outcomes. Collaborative treatment among podiatric, infectious disease, vascular and rehabilitation specialists allowed us the best opportunity to not only prevent an amputation but also to preserve limb function."

Katherine Raspovic, DPM

Podiatric Surgery at MedStar Washington Hospital Center

The podiatric surgery team is comprised of three fellowship-trained surgical specialists, dedicated to treating patients with foot and ankle issues—from injured athletes, to patients with diabetic foot disease at high risk for amputation. We strive to provide a comprehensive, patient-focused approach to everyone we treat, while providing the latest innovations in diagnosis and treatment. The health of the lower legs and feet is often influenced by other medical conditions, so we regularly collaborate with other providers, to ensure that each patient's mobility safely complements and evolves with their other courses of treatment.

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