

Refractory Neuropathic Foot Wounds in Medically Complex Patients: Achieving Durable Closure and Function

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Introduction

Neuropathic foot wounds in medically complex pose significant challenges to limb preservation. Sensory loss, altered biomechanics, and systemic disease often result in prolonged non-progression despite appropriate off-loading, debridement, and topical therapy. When healing plateaus under SOC, escalation to adjunctive therapy may be required to re-initiate progression.

Lyophilized human amnion chorion membrane (LHACM) is a tri-layer extracellular matrix preserves more than 300 regulatory proteins and functions as a biologic scaffold, therefore supports the natural healing cascade. When incorporated into a comprehensive treatment strategy, LHACM may support progression toward epithelialization and closure in complex neuropathic wounds.

The following two cases demonstrate **durable wound closure and functional restoration** using a structured management strategy incorporating consistent off-loading, SOC, and LHACM* application. These cases underscore how structured care combined with adjunctive therapy can achieve closure in high-risk limbs.

Clinical Challenge:

Both wounds occurred in neuropathic, medically complex patients and showed **limited progression** despite serial debridement, strict off-loading, and prolonged NPWT.

Methods

Two neuropathic foot wounds were managed with serial debridement, moisture-balanced dressings, and strict off-loading using a Controlled Ankle Motion (CAM) boot or Charcot Restraint Orthotic Walker (CROW). Negative pressure wound therapy (NPWT) was applied to support granulation and adjusted according to wound progression. **LHACM* was introduced as adjunctive therapy when healing plateaued under standard care.**

Wound dimensions were measured serially to determine percent reduction and time to closure. Outcomes included complete epithelialization, absence of infection or drainage, and preservation of limb integrity at follow-up.

Case Presentation

Case 1: Chronic Open TMA Wound (Diabetic Neuropathy)

64-year-old male with type 2 diabetes mellitus and peripheral neuropathy presented with a chronic plantar ulcer and underlying **osteomyelitis** in a limb previously treated with partial digital amputation. After a transmetatarsal amputation and open wound management for hematoma evacuation, the wound entered a **plateau phase with standard care, showing minimal change despite several weeks of NPWT.**

Case 2: Post-Exostectomy Dehiscence (Charcot Neuroarthropathy)

A 67-year-old male with idiopathic peripheral neuropathy and **Charcot** neuroarthropathy of the left foot developed postoperative wound dehiscence following a fifth-metatarsal-base exostectomy. Despite several weeks of NPWT and standard dressing care, **the wound plateaued.**

Case Presentation

	Case 1
Adjunct	LHACM* ×4 + NPWT + CAM
Reduction	37% (D9); 79% (D17); 90% (D29)
Closure	Closed D49

*LHACM: EPIXPRESS®, MIMEDX Group Inc, Marietta, GA, US

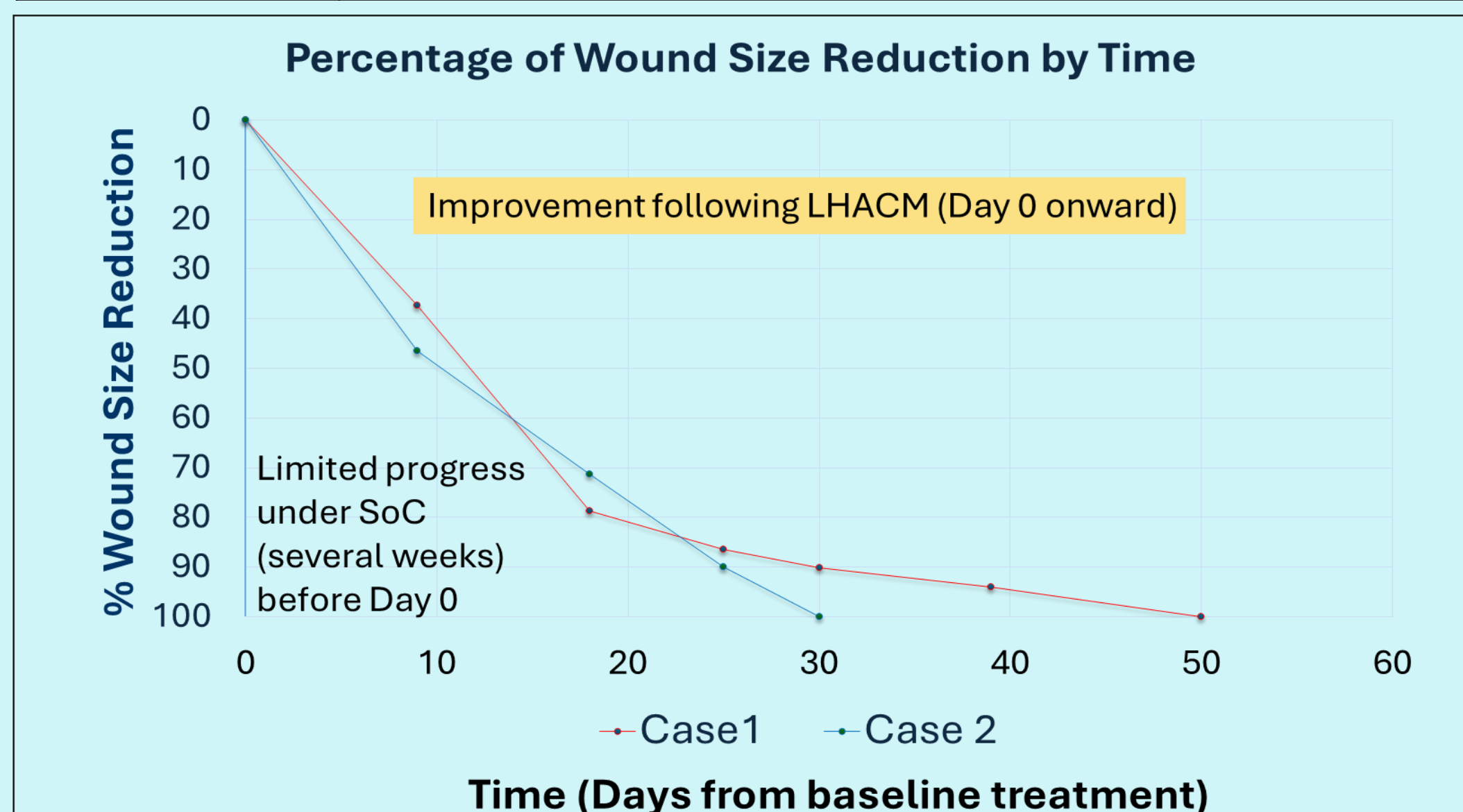
	Case 2
Adjunct	Debridement → LHACM* ×3 + CROW
Reduction	46% (D5); 71% (D12); 90% (D31)
Closure	Closed D39



Day 0: 1st application of LHACM Day 9: 2nd application of LHACM Day 18: 3rd application of LHACM Day 25: 4th application of LHACM Day 50: Wound closed



Day 0: 1st application of LHACM Day 0: 2nd application of LHACM Day 5: 3rd application of LHACM Wound closed 2-month follow-up: wound remained closed



Conclusion

Adjunctive **LHACM***, integrated within a structured off-loading and wound-care regimen, was associated with **rapid wound area reduction and complete epithelial closure** in two neuropathic, medically complex patients whose wounds had plateaued under standard care. Durable closure and functional ambulation were maintained at follow-up.

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