



Successful Utilization of Dehydrated Human Amniotic/Chorionic Membrane in Diabetic Limb Salvage: A Case Series



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Background

- Up to 25% of individuals with diabetes will develop a foot ulcer during their lifetime.¹
- Diabetic foot ulcers (DFUs) are difficult to treat and present a significant challenge for patients, families, and health care providers.
- Effective DFU and amputation prevention could realistically save the US health-care system up to \$21.8 billion annually.²
- Treatment efficacy for limb salvage is encouraged based on patient-outcome measures rather than ulcer-outcome measures to avoid underestimation of mortality and morbidity of diabetic foot disease.³

Dehydrated Human Amnion/Chorion Membrane (dHACM) Allograft

- PURION® Processed dehydrated human amnion/chorion membrane (dHACM) allografts contain growth factors that help in wound healing.⁴
- The dHACM allografts retain biological activities related to wound healing, including the potential to positively affect four distinct and pivotal physiological processes intimately involved in wound healing: cell proliferation, inflammation, metalloproteinase activity and recruitment of progenitor cells.⁴
- In previous RCT's dHACM has been shown to be an efficacious treatment for DFUs with healing rates exceeding 90%.⁵⁻⁶

Purpose

- To demonstrate the successful utilization of dHACM allograft for limb salvage in two diabetic neuropathic wounds (Wagner Grade 4).

Methods

- Retrospective look at two diabetic neuropathic patients with wounds involving exposed bone and tendon (Wagner Grade 4).
- Both patients had appropriate revascularization prior to treatment with multiple applications of dHACM allografts.
- Negative pressure wound therapy was also utilized in both cases.

References

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Case 1

Case 1: 43 year old female presents with right foot gangrene progressing to wet gangrene with a large surface area of necrosis and ulceration. PMHx significant for DM2 with peripheral neuropathy, ESRD on HD, HTN, Charcot of the left ankle. Patient was initially admitted for revascularization. Right foot had significant soft tissue loss and necrosis, demarcated at the 1st and 2nd digits with exposed sesamoid, flexor tendons and extending to the medial and dorsal aspects of the foot up to the level of the ankle. Patient underwent amputation of the 1st and 2nd rays. Four days after the amputation, the patient had a 2nd surgical debridement of non-viable tissue and application of first dHACM allograft and Wound V.A.C®. The wound epithelialized in 7 months with 10 dHACM allografts.



Initial presentation



s/p surgical debridement
1st dHACM allograft



Post surgical
debridement



Healed in 7 months with
10 dHACM allografts

Case 2

Case 2: 74 year old male presents with wound to right foot amputation site, sub 3rd met head. PMHx significant for DM, HTN, GERD, cardiomyopathy, HLD, PVD, L BKA, s/p right 5th ray amp, right anterior tibial-dorsalis pedis w/ long saphenous vein bypass, right partial 4th ray amp and right foot I & D. The patient was admitted to the hospital for I & D. Three days after formal I & D in the OR, the wound was debrided and first dHACM allograft and Wound V.A.C.® were applied. Two days later a right anterior tibial to dorsalis pedis bypass balloon angioplasty was performed. At 13 weeks, a STSG from the ipsilateral thigh was placed on the ulcers to the plantar right arch and lateral aspect of the right foot. The wounds epithelialized in 6 months with 4 dHACM allografts.



Initial presentation



s/p 1st debridement



1st dHACM allograft



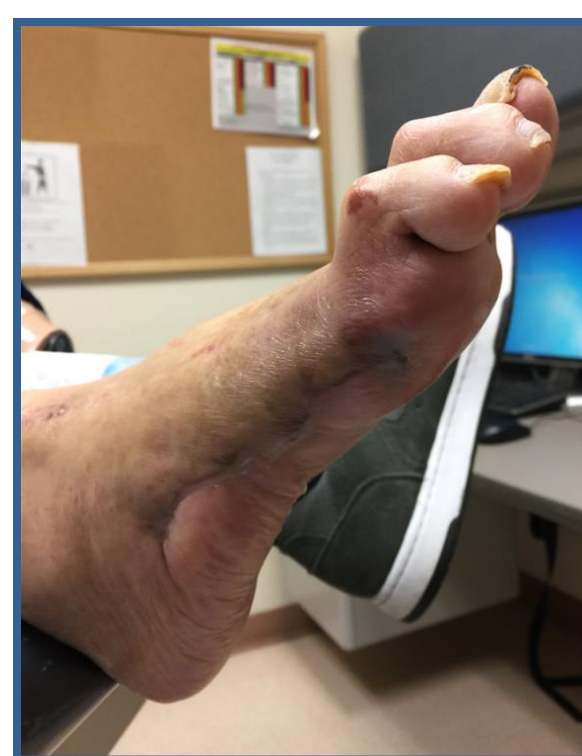
2 days s/p 1st dHACM



9 weeks



Healed in 6 months with 4 dHACM allografts
and remained healed at 3 months



Results

- Both patients had developed granulation tissue overlying the bone and tendon and ultimately healed their wounds after multiple applications of dHACM along with NPWT.
- Total time of therapy until wound healing was approximately 7 months for each patient.

Conclusion

- Following revascularization, dHACM is a beneficial wound closure adjunct that can lead to successful limb salvage.



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