Dehydrated Human Amnion/Chorion Membrane as Adjunctive Therapy in the Treatment of Pyoderma Gangrenosum: A Case Report

Robert J. Snyder, DPM, MSc, CWS; Joey Ead, MS; Brad Glick, DO, MPH; Cherison Cuffy, DPM, CWS

Barry University, School of Podiatric Medicine, Miami Shores, FL

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Abstract

Pyoderma gangrenosum (PG) is an uncommon chronic and progressive skin disorder of unknown etiology that can lead to severe tissue necrosis, pathergy, horrendous pain, and disfigurement. PG is often a diagnosis of exclusion, as there are no specific laboratory or histopathologic findings to confirm the diagnosis. Long term immunosuppression is the mainstay of systemic treatment for PG, although increasing evidence supports the use of biologic therapies, such as tumor necrosis factor-α inhibitors, for refractory cases of PG. Localized care of the painful wound often represents a clinical challenge. We present a case of an elderly female with refractory, painful PG. For three months prior to utilization of adjunctive advanced topical therapeutics, her condition was managed by a multidisciplinary team with immunosuppressive therapy, local wound care, and compression. Dehydrated human amnion/chorion membrane (dHACM) allograft was adjunctively incorporated into the treatment plan to help modulate inflammation and improve wound healing. After the first dHACM placement, the patient stated her pain, recorded as 10/10, was substantially reduced within hours (5/10), and within 5 days was subsequently eradicated (0/10). Additionally, within one week, her wound reduced in size by over 25%, and within two months the wound had reduced by 56%. These results suggest that using dHACM as an adjunct to immunosuppressive therapy may serve to mitigate pain and improve wound healing in patients with this challenging condition. Reduction of pain should be evaluated in studies of dHACM to determine if these results are reproducible in a larger cohort of patients and therefore generalizable to other wound types and conditions.

Background

- Pyoderma gangrenosum (PG) is an uncommon chronic and progressive skin disorder of unknown etiology that can lead to severe tissue necrosis, pathergy, horrendous pain, and disfigurement.[1]
- PG is often a diagnosis of exclusion, as there are no specific laboratory or histo-pathologic findings to confirm the diagnosis.[2]
- Long term immunosuppression is the mainstay of systemic treatment for PG, although increasing evidence supports the use of biologic therapies, such as tumor necrosis factor-α inhibitors, for refractory cases of PG.
- Localized care of the painful wound often represents a clinical challenge.

Human amniotic membrane comprised of both amnion and chorion layers has been used for a number of clinical applications for over a century.[3] The molecular fabric of this tissue consists of many key functions:[4]

- provides a matrix for cellular migration and proliferation
- modulates inflammation
- reduces scar tissue
- has antibacterial properties
- reduces pain at the site of wound

Therapies such as dehydrated human amnion/chorion membrane (dHACM) allografts have been shown to enhance healing of diabetic, venous, and other wounds.[5,6,7]

Purpose

We present a case of an elderly female with refractory, painful PG treated with dHACM.

dHACM = EpiFix®, MiMedx Group, Inc., Marietta, GA
EpiFix® is a registered trademark of MiMedx Group, Inc.

Case

Case History

- 77 year old female with chief complaint of severely painful lesions (10/10) on her right anterior shin.
- History of diabetes mellitus, hypertension, hyperlipidemia, macular degeneration, microalbuminuria, venous insufficiency, obesity, three vessel coronary artery bypass graft, right hip replacement, and right femur fracture with internal fixation, sternal wound infection, and left shoulder surgery.
- Physical exam revealed three ulcerative lesions at the posterior aspect of the right anterior shin. The copiously draining wounds showed no signs of infection and did not probe to bone.
- For three months prior to utilization of adjunctive advanced topical therapeutics (dHACM), her PG was managed by a multidisciplinary medical team with immuno-suppressive therapy, local wound care, and light compression.
- The dHACM allograft was adjunctively incorporated into the treatment plan to help modulate inflammation and improve wound healing.

July 2014	August 2014	September 2014	December 2014	January 2015	August 2015
					
Early stage of pyoderma gangrenosum at presentation with three separate wounds.	The lesions increased in size with necrotic tissue.	Necrotic tissue started to become more apparent as the disease progressed. At this point, the three separate wounds started to bridge together.	Wound had coalesced with irregular violaceous borders, yellow slough, central necrotic tissue prior to application of dHACM.	After 3 weekly dHACM applications, dramatically improved wound healing, healthy granulation tissue formation, pain abated, and re-epithelialization.	Eight months after application of dHACM.

References

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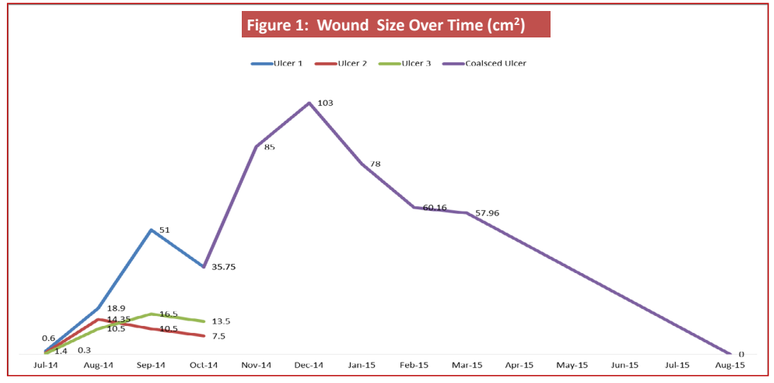
Results



Wound area reduction Within one week of dHACM placement, her wound reduced in size by over 25%, and within two months the wound had reduced by 56%. The wound was fully healed by eight months. Figure 1 shows the progression of wounds during the course of treatment. Note that after application of dHACM on 1/4/2015 a marked decrease in wound size occurred.

Pain reduction After the first dHACM placement, the patient stated her pain, recorded as 10/10, was substantially reduced within hours (5/10), and within 5 days was eradicated (0/10).

Conclusions

- These results suggest that using dHACM as an adjunct to immunosuppressive therapy may serve to mitigate pain and improve wound healing in patients with this challenging condition.
- Reduction of pain should be evaluated in studies of dHACM to determine if these results are reproducible in a larger cohort of patients and therefore generalizable to other wound types and conditions.