

Human Placental Connective Tissue Matrix in the Treatment of Complex Wounds: A Case Series

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Introduction

Amniotic membrane-derived products have been used in the treatment of burns for over 100 years. More recently, their use in the management of complex chronic wounds has exploded. These products form a scaffolding of attachment proteins with a variety of growth factors that enhance endogenous cellular entrapment and proliferation.

In this case series, we evaluated the use of a graft comprised of a particularized pad of Human Placental Connective Tissue Matrix (HPCTM*) in the treatment of notoriously complex wounds. This graft was used as an adjuvant to aggressive surgical debridement with negative-pressure therapy (when necessary).

Methods

This case series evaluated the use of HPCTM* in 3 patients with complex wound types requiring inpatient care including: A chronic open wound of the leg, a dorsal foot burn, and a Fournier gangrene. The wounds were first aggressively debrided and then approximately 6 cm² of HPCTM* was applied per 10 cm² of wound surface area. Foam dressing with negative pressure therapy was subsequently applied for 3-4 days. This application regimen was repeated until the formation of granulation tissue was visible. A meshed autologous split thickness graft was then applied (if needed) over the HPCTM* and the wound was left to complete the healing process.



Pre-Operative



POD #3



POD# 25 (Healed)

Patient 1
Age: 59
Comorbidities: Diabetes Mellitus, HTN, 1 PPD Smoker
Previous Tx: Multiple failed biologics
Current Tx: Aggressive sharp debridement, HPCTM*, Negative Pressure Therapy, Split-Thickness Skin Graft



Pre-Operative



POD #9



POD# 34 (Healed)

Patient 2
Age: 43
Comorbidities: Diabetes Mellitus (noncompliant), 1 PPD Smoker
Previous Tx: Debridement by Urology
Current Tx: Aggressive sharp debridement, HPCTM*, Negative Pressure Therapy



Pre-Operative



POD #6



POD# 31 (Healed)

Patient 3
Age: 73
Comorbidities: Diabetes Mellitus, MRSA+ Wound
Previous Tx: Multiple failed biologics, managed by Podiatry
Current Tx: Aggressive sharp debridement, HPCTM*, Negative Pressure Therapy, Split-Thickness Skin Graft

Conclusions

All patients demonstrated complete healing and the use of HPCTM* increased granulation tissue deposition and expedited healing time as compared to experience using the same procedure without the use of HPCTM*. The use of the HPCTM* as a particularized pad in conjunction with negative pressure therapy and split-thickness grafting embedded the HPCTM* into the wound allowing for quicker incorporation and healing.

Discussion

The use of HPCTM* in conjunction with aggressive sharp debridement, negative pressure therapy, and split-thickness skin grafting (as necessary) appears to hasten the healing time of notoriously difficult to manage wounds. HPCTM* appears to improve the abundance and quality of granulation tissue in the wound bed, thus leading to faster healing times.

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