

Use of Dehydrated Human Amnion/Chorion Membrane Mesh Allograft in Wounds with Exposed Bone or Tendon

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Abstract

Background: Lower-extremity wounds with exposed tendon, bone, or hardware present a difficult treatment challenge. Dehydrated human amnion/chorion membrane (dHACM) allografts have been shown to be effective in the treatment of many types of wounds. Our purpose is to evaluate dHACM allograft in mesh configuration as a treatment for patients with exposed tendon, bone, and/or hardware.

Methods: A review of patients (n=3) with exposed tendon, bone, or hardware treated with mesh dHACM was conducted. The dHACM was applied weekly to the wound after sharp debridement, followed by standard topical dressings. Weekly dressing change and wound assessment was conducted to determine rate of granulation over the exposed tendon, bone, or hardware.

Cases: Case 1 was an 85yo female smoker with diabetes. She presented with a 7 x 7 cm wound with exposed hardware following a heel fracture. Within 2 weeks of one dHACM application, hardware was covered with granulation tissue and her wound had reduced by 58%. Case 2 was a 41 yo male smoker with uncontrolled Type 2 diabetes with exposed bone and tendon following amputation of his 5th metatarsal. Wound V.A.C.[®] was discontinued due to stalled progress and treatment with dHACM allograft was initiated. Wound area was 7.0 x 4.5 cm. Within one week, the wound area had decreased by 44%. After 3 weekly applications, tendon and bone were covered. Case 3 was a 78yo female with Type 2 diabetes and multiple comorbid conditions and a deep right ankle wound with exposed tendon. At time of first dHACM application, the wound area was 8 x 8 cm. Within one week, the wound had reduced by 39%. After 2 weekly applications, granulation tissue covered the tendon.

Conclusion: In these 3 cases, dHACM in mesh configuration was effective in promoting tissue granulation over exposed tendon, bone, and/or hardware. The mesh configuration allows for greater wound coverage with less graft material.

Background

- ❖ Lower-extremity wounds with exposed tendon, bone, or hardware present a difficult treatment challenge.
- ❖ Human amniotic membrane has been used as a biological dressing for the treatment of various types of wounds for over a century.¹
- ❖ PURION[®] Processed dehydrated human amnion/chorion membrane (dHACM) has been shown to contain growth factors that help in wound healing.²
- ❖ The dHACM allografts are available in a variety of sizes and configurations including a mesh configuration which allows for greater wound coverage with less graft material.
- ❖ The dHACM allografts have been shown to be effective in the treatment of many types of wounds.³⁻⁷

Purpose

- ❖ Our purpose is to evaluate dHACM allograft in mesh configuration as a treatment for patients with exposed tendon, bone, and/or hardware.

dHACM = EpiFix[®] MiMedx Group, Inc., Marietta, GA
EpiFix[®] and PURION[®] are registered trademarks of MiMedx Group, Inc.
V.A.C.[®] is a registered trademark of KCI Licensing, Inc.



Methods

- ❖ We conducted a review of patients (n=3) with exposed tendon, bone, or hardware treated with mesh dHACM.
- ❖ The dHACM was applied weekly to the wound after sharp debridement, followed by standard topical dressings.
- ❖ Weekly dressing change and wound assessment was conducted to determine rate of granulation over the exposed tendon, bone, or hardware.
- ❖ All patients provided consent for treatment and use of their personal health information.

Results

Table 1. Summary of Cases.

Case	Wound Size at 1 st dHACM	Weeks to Cover Exposed Bone, Tendon, or Hardware	# of dHACM Mesh
1	7.0 cm x 7.0 cm	2	1
2	7.0 cm x 4.5 cm	3	3
3	8.0 cm x 8.0 cm	2	2

Conclusions

- ❖ In these 3 cases, dHACM in mesh configuration was effective in promoting tissue granulation over exposed tendon, bone, and/or hardware.
- ❖ The dHACM mesh configuration allows for greater wound coverage with less graft material.

References

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Case Results

Case 1 was an 85 y/o female smoker with diabetes. She presented with a 7 cm x 7 cm wound with exposed hardware following a heel fracture. Within 2 weeks of one dHACM application, the hardware was covered with granulation tissue and her wound had reduced by 58%.

Week 1



Week 2 – Hardware covered



Case 2 was a 41 y/o male smoker with uncontrolled Type 2 diabetes with exposed bone and tendon following amputation of his 5th metatarsal. Wound V.A.C.[®] was discontinued due to stalled progress and treatment with dHACM allograft was initiated. Wound area was 7.0 cm x 4.5 cm. Within one week, the wound area had decreased by 44%. After 3 weekly applications, tendon and bone were covered.



1st dHACM



Week 1



Week 2



Week 3 – Tendon and bone covered



Week 7

Case 3 was a 78 y/o female with Type 2 diabetes and multiple comorbid conditions and a deep right ankle wound with exposed tendon. At time of first dHACM application, the wound area was 8 cm x 8 cm. Within one week, the wound had reduced by 39%. After 2 weekly applications, granulation tissue covered the tendon.



Pre dHACM



1st dHACM



Week 1



Week 2 – Tendon covered



Healing