An Innovative Dehydrated Human Amnion/Chorion Membrane Application Technique for Large VLUs: A Case Study

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Background

- Venous leg ulcers (VLUs) are extremely common in clinical practice and can take months to heal using conventional compression therapy.
- PURION® Processed dehydrated human amnion/chorion membrane (dHACM) has been shown to 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.1
- In a recent randomized controlled trial, dHACM with multi-layer compression therapy (MLCT) demonstrated reduced healing time versus MLCT alone.2

Purpose

- This case study demonstrates the effectiveness of an innovative approach to applying dHACM allograft tissue membrane to a large VLU.

Case History

- One case of a 62-year-old male who had failed conventional MLCT for a large VLU initially measuring 16 cm x 15 cm.
- Comorbidities included insulin-dependent diabetes, peripheral vascular disease, congestive heart failure, as well as multiple previous venous stasis ulcers and amputations.
- Left leg VLU caused by extensive edema secondary to CHF exacerbation. The ulcer was superficial and the wound base was 100% granular.
- MLCT was attempted initially but due to the patient’s high risk for limb loss (previous non-traumatic 1st ray and 3rd digit amputations of the ipsilateral limb) advanced biologics were indicated.

Application Method

- The VLU was gently debrided with 4x4 gauze and saline. The patient tolerated nothing more as he was completely sensate.
- Post-debridement, particulate dHACM was applied weekly in a “salt-shaker” fashion to the entirety of the wound bed.
- After application of the graft, a non-adherent dressing was placed over the VLU and the leg was wrapped with a multi-layer compression dressing.
- No dressing changes were performed during the week.
- Debridement and graft application were performed on a weekly basis.

Apparatus: The particulate dHACM powder was transferred into a sterile specimen cup. The top of the cup was then covered with a dry non-adherent wound veil, which allowed the powder to be spread. The veil was then secured to the cup using medical tape.

Results

<table>
<thead>
<tr>
<th>Week</th>
<th>Wound Size (cm)</th>
<th>Appearance</th>
<th>dHACM Applied</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>16 x 15 x superficial</td>
<td>Superficial, granular base</td>
<td>160 mg x 2</td>
</tr>
<tr>
<td>1</td>
<td>16 x 13.5 x superficial</td>
<td>Superficial, granular base</td>
<td>160 mg x 2</td>
</tr>
<tr>
<td>2</td>
<td>16 x 13 x superficial</td>
<td>Islands of epithelialization appearing within wound base</td>
<td>160 mg x 2</td>
</tr>
<tr>
<td>3</td>
<td>Wound base 65% covered with islands of epithelialization</td>
<td>Wound base 65% covered with islands of epithelialization</td>
<td>160 mg x 1</td>
</tr>
<tr>
<td>4</td>
<td>Epithelialized</td>
<td>Epithelialized</td>
<td>100 mg x 1</td>
</tr>
</tbody>
</table>

Conclusions

- A “salt-shaker” type of application method proved to be an effective technique to deliver a small amount of dHACM to a large wound surface area.
- The versatility of the particulate dHACM plays an integral role in limb salvage efforts of high-risk diabetic patients.
- There were no adverse reactions to the therapy.

References


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