Aseptically Processed Dehydrated Allograft Placental Membrane* for Limb Salvage Reconstruction Michael N. Desvigne, MD, FACS, CWS, FACCWS; Krista Bauer (Montgomery), RN, WCC, OMS; Kari Day, RN, BSN, WCC; Ashley L. Wardman, LPN

Abrazo Arrowhead Hospital, Glendale, AZ



INTRODUCTION

Surgical reconstruction as a "last resort attempt at limb salvage" is challenging and comes with a significant burden of limb loss if failure occurs. Previously, we have reported the use of placental allografts for incisional management following surgical closure of chronic wounds.

Placental allografts provide native matrix proteins and support wound progression. While incisional management following closure of chronic wounds may benefit from the addition of aseptically processed dehydrated allograft placental mini membrane to assist in optimizing the tissue for surgical healing, the value of the supportive tissue is beneficial when failure can result in limb loss.

METHODS/RESULTS

We present 5 cases utilizing placental allograft mini membrane to optimize outcomes following reconstruction in the setting of potential limb loss of the lower extremity. The cases include hardware infection in the knee (n=2) and ankle (n=1) and chronic infection without hardware in the knee (n=1) and ankle (n=1). The dehydrated placental mini membrane was placed prior to incision closure and/or over a skin graft. Negative pressure was applied postoperatively and continued for 7-10 days.

Primary healing was achieved in all cases without postoperative infection and/or surgical site dehiscence. In 1 case, the patient had a small area of dehiscence which was managed non-operatively and healed without further surgical intervention.

DISCUSSION

The addition of dehydrated allograft placental mini membrane without terminal sterilization to surgical reconstruction may improve surgical outcomes. The aseptically processed placental tissue without terminal sterilization is known to maintain native matrix proteins and growth factors, which support wound closure and secondary healing. We found that surgical outcomes were encouraging in the face of chronic infection with and without hardware present. Additionally, in those cases that had incomplete surgical healing, the wounds healed and/or progressed without recurrent infection.

CASE 1

Patient Information: 81 year old female with non-healing surgical wound 4 weeks s/p revision arthroplasty and ORIF distal femur fracture right knee. **Medical History:** Multiple surgeries on right knee

- Taken to OR for drainage abscess, evacuation hematoma excision non viable tissue.
- V.A.C. Veraflow[®] Therapy initiated for wound bed preparation.
- Returned to OR for additional debridement and NPWT.
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- Dehydrated placental mini membrane placed to optimize healing.
- •Incisional V.A.C.® Therapy initiated with a PREVENA™ CUSTOMIZABLE™ Dressing immediately following closure

Outcome: Successful outcome. Limb salvaged. No further surgery required.























CASE 2

Patient Information: 69 year old female with non-healing surgical wound 4 weeks after Open Reduction and Internal Fixation distal femur fracture. Medical History: Multiple surgeries right hip and previous left femur fracture DM, HTN, chronic opioid use

- Taken to OR for excision of non-viable tissue. V.A.C. Veraflo® Therapy initiated for wound bed preparation.
- Returned to OR for definitive closure.
- Dehydrated placental mini membrane was placed to assist with healing.
- Incisional V.A.C[®] Therapy initiated with a PREVENATM CUSTOMIZABLETM Dressing immediately following closure. **Outcome**: Successful outcome. Limb salvaged. No further surgery required.













CASE 3

Patient Information: 47 year old male with chronic infection in the left knee after total knee replacement 1 year prior with washout and hardware removal 1 month later. 6 months later suffered patellar dislocation requiring surgical repositioning. Since then, he had chronic drainage and pain. **Medical History**: Hypertension

Treatment:

- Taken to OR for excision of non-viable tissue and phlegmon.
- Dehydrated placental mini membrane was placed to assist with healing.
- V.A.C Therapy was initiated to assist with STSG take.
- Incisional V.A.C[®] Therapy initiated with a PREVENATM CUSTOMIZABLETM Dressing immediately following closure. **Outcome:** Successful outcome. Limb salvaged. No further surgery required.



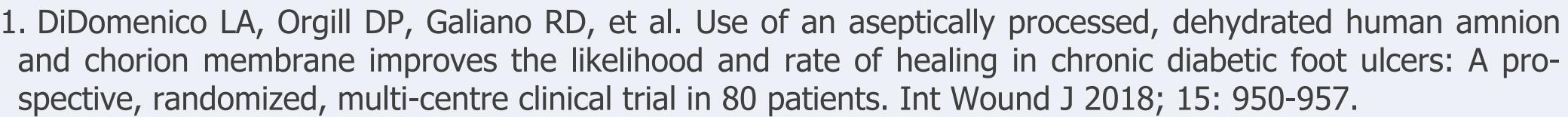








(Week 6)



2. Zelen CM, Orgill DP, Serena TE, et al. An aseptically processed, acellular, reticular, allogenic human dermis improves healing in diabetic foot ulcers: A prospective, randomized, controlled, multicenter follow-up trial. Int Wound J 2018: 1-9.

*Salera® Mini Membrane (MTF Biologics, Edison, NJ) **Salera® Membrane (MTF Biologics, Edison, NJ)

CASE 4

Patient Information: 65 year old female with non-healing surgical wound on right ankle following ankle replacement 1 year prior.

Medical History: Venous insufficiency, Previous MRSA

- Taken to OR for excision non viable tissue and flap coverage
- Dehydrated placental membrane** placed over exposed tendon
- Autologous patch placed to assist with optimization of healing
- Incisional V.A.C.[®] Therapy initiated with a PREVENA™ CUSTOMIZABLE™ Dressing immediately following closure
- Incisional dehiscence lead to recurrent wound
- Muscle flap performed followed by STSG
- Dehydrated placental mini membrane placed to optimize healing.

Outcome: Successful outcome. Limb salvaged. No further surgery required.







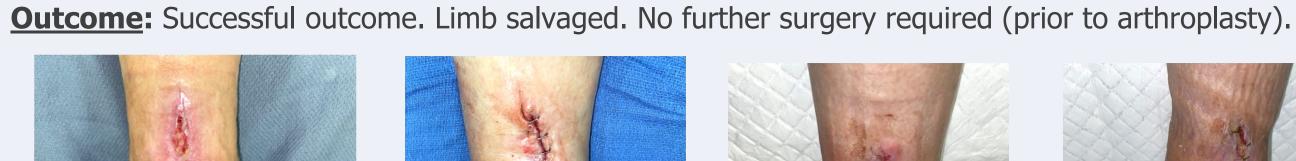


CASE 5

Patient Information: 76 year old male with non-healing surgical wound right ankle following ankle replacement 1 year ago. Arthroplasty hardware removed with antibiotic spacer placement. Wound failed to heal and currently spacer is exposed.

Medical History: CAD, HTN, DVT, Pulmonary embolism

- Taken to OR for excision non viable tissue and flap coverage
- STSG performed
- Dehydrated placental mini membrane placed to optimize healing
- Incisional V.A.C.[®] Therapy initiated with a PREVENA™ CUSTOMIZABLE™ Dressing immediately following closure
- Dehiscence occurred but incision healed without further surgical intervention















REFERENCES