

INTRODUCTION

Pressure injury with secondary ulceration is a challenge for surgical healing following reconstruction. Previously, we have reported the use of placental allografts for incisional management following surgical closure of chronic wounds. The challenges of pressure injury are twofold: the chronicity of the wound and the associated bioburden. Placental allografts provide 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 optimization of the wound bed may also be beneficial for partial surgical healing with secondary healing as an alternative.

METHODS

We present a retrospective review of a series of surgical reconstructive procedures for pressure ulceration over a 2-year period using aseptically processed dehydrated placental allograft for pressure ulcer reconstruction.

Over the 2 year period 46 patients presented with 62 pressure ulcers, with some patients presenting with multiple ulcers. Forty-four patients underwent surgical reconstruction with closure. One patient who presented on two occasions underwent debridement without closure because of poor nutritional status. All of the patients except one underwent surgical closure with placement of placental allograft intraoperatively. The dehydrated placental allograft was placed over the exposed bone following partial ostectomy as well as in the soft tissue prior to surgical closure and incisional management.

RESULTS

Forty-one (93%) of the patients left the hospital with no complications to include infection and or dehiscence. Three patients experienced incisional dehiscence with no evidence of infection and underwent operative closure and/or allowed to heal secondarily.

DISCUSSION

The addition of dehydrated placental allograft placental may improve surgical outcomes in patients undergoing pressure ulcer surgery. The aseptically processed placental tissue without terminal sterilization is known to maintain native matrix proteins, which support wound closure and healing. We found that surgical outcomes were encouraging in the face of chronic inflammation and bioburden as is the case for pressure injury. While some patients experienced dehiscence, these patients were complex cases and were treated successfully with reoperation and/or secondary healing.

Aseptically Processed Dehydrated Human Placental Allograft* for Pressure Ulcer Reconstruction

Michael N. Desvigne, MD, FACS, CWS, FACCWS; Krista Bauer (Montgomery), RN, WCC, OMS; Jody Wolfe, BSN, MBA, RN; CWOCN, Ashley L. Wardman, LPN. Plastic & Reconstructive Surgery, Wound Care & Hyperbaric Medicine, Abrazo Arrowhead Hospital and Wound Clinic, Glendale, AZ

CASE 1

Patient Information: 33 year old female with incomplete paraplegia presents with stage 4 pressure ulcer present for 4 years. Admitted for surgical intervention. Medical History: Colostomy Social History: Lives with family, lives out of town

Treatment:

- Taken to OR for excision ulcers and flap closure
- Foreign body found and removed
- Dehydrated placental human mini-membrane placed to support vascularization and support healing Incisional V.A.C.[®] Therapy initiated with a PREVENA[™] CUSTOMIZABLE[™] Dressing immediately following surgical closure
- Outcome: Surgical site remained closed, no dehiscence





Figure 1A. Wound at initial presenta

Patient Information: 56 year old male with incomplete paraplegia presents with stage 4 pressure left ischium present for 1 year. Previous ulcers and flap surgery have been performed. Admitted for surgical intervention.

Medical History: DM, HTN, PE **Social History:** Lives with family **Treatment**

Taken to OR for excision ulcers and flap closure

Dehydrated human placental mini-membrane placed to support vascularization and support healing Incisional V.A.C.[®] Therapy initiated with a PREVENA[™] CUSTOMIZABLE[™] Dressing immediately following surgical closure

Outcome: Surgical site remained closed, no dehiscence observed at 6 weeks



(Day 1)



Figure 2B. Placement of dehydrated huma placental mini-membrane (Day 1)

CASE 3

Patient Information: 62 year old male with paraplegia. Developed stage 4 pressure ulcer progressed despite wound care. Admitted for surgical intervention. **Medical History:** HTN, PE Colostomy

Social History: Lives with family

- Taken to OR for excision ulcers and flap closure
- Dehydrated human placental mini-membrane placed to support vascularization and support healing Incisional V.A.C.[®] Therapy initiated with a PREVENA[™] CUSTOMIZABLE[™] Dressing immediately following surgical closure

Outcome: Surgical site remained closed, no dehiscence observed at 3 months





placental mini-membrane (Day 1)



Figure 1B. Placement of dehydrated human placental mini-membrane (Day

Figure 1C. Surgical closure (Day 1)

CASE 2

Figure 2C. Surgical closure (Day 1)



Figure 2D. Site remained closed (6

Figure 3C. Surgical closure (Day 1)



Figure 3D. Remained closed, no dehiscence (3 Months)

Medical History: Back surgery **Social History:** Lives with family

- Taken to OR for excision ulcers and flap closure
- Dehydrated human placental mini-membrane placed to support vascularization and support healing

Outcome: Surgical site remained closed, no dehiscence was observed at 8 weeks

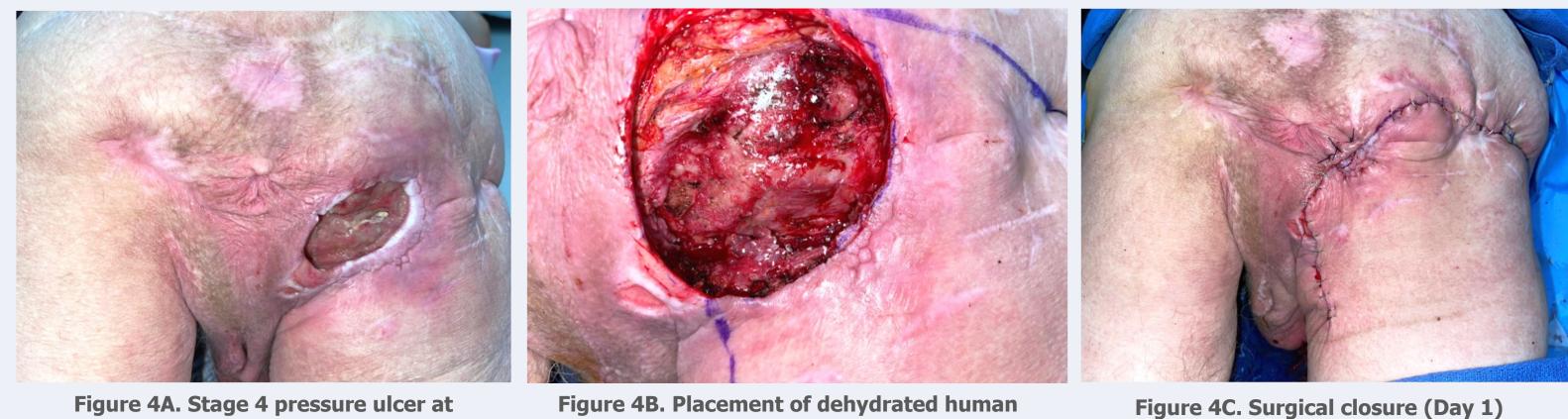


Figure 4A. Stage 4 pressure ulcer at initial presentation (Day 1)

Medical History: Colostomy **Social History:** Lives with family Treatment

Taken to OR for excision ulcers and flap closure

Outcome: Surgical site remained closed at 3 months post-op, no dehiscence observed





- patients. Int Wound J. 2018. 15: 950-957

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

CASE 4

Patient Information: 50 year old male with paraplegia. Developed stage 4 pressure ulcer progressed despite wound care. Admitted for surgical intervention.

Incisional V.A.C.[®] Therapy initiated with a PREVENA[™] CUSTOMIZABLE[™] Dressing immediately following surgical closure

Figure 4B. Placement of dehydrated human placental mini-membrane (Day 1)



Figure 4D. Site remained closed (8 Weeks)

CASE 5

Patient Information: 72 year old male after stroke. Developed stage 4 pressure ulcer progressed despite wound care. Admitted for surgical intervention.

- Dehydrated placental human mini-membrane placed to support vascularization and support healing Incisional V.A.C.[®] Therapy initiated with a PREVENA[™] CUSTOMIZABLE[™] Dressing immediately following surgical closure



Figure 5A. Stage 4 pressure ulcer at ini-
tial presentation (Day 1)Figure 5B. Placement of dehydrated humanFigure 5C. Surgical closure (Day 1)placental mini-membrane (Dav 1)





Figure 5D. Site at 6 Weeks



REFERENCES

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