Application of A Dehydrated Human Umbilical Cord Particulate (dHUCP) Device* in The Management of A Postoperative Hip Wound Dehiscence

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INTRODUCTION

- Wound dehiscence can become a serious postoperative complication commonly associated with pain, infection, and delayed healing¹.
 - > These wounds can have complex features such as tunneling and draining, often requiring advanced wound care therapies.
- The novel dehydrated human umbilical cord particulate (dHUCP) device* is the first FDA-cleared human birth tissue medical device for wound management. It is intended to cover, protect, and provide a moist wound environment. (*Corplex P[®], Stimlabs LLC[®], Roswell, GA; **Figure 1**).



- Figure 1: The dHUCP device. final product.
- Indicated for the management of chronic and acute wounds, such as tunneled and surgical wounds, herein is a clinical report of dHUCP use in postoperative hip wound dehiscence management.

METHODS

Patient History: 59-year-old female with a history of severe osteoarthritis and obesity (BMI = 40) underwent total left hip replacement.

- Four weeks later the patient developed a postoperative wound dehiscence (Figure 2). The patient presented with fever and localized pain at the surgical site. A CT scan revealed a fluid collection deep to the tensor fascia lata, suggestive of a postoperative infection.
- Ten days prior to dHUCP treatment wound size was approximately 12cm x 1.5cm x 0.2cm with a tunneled area that measured 3cm x 3cm.
- The patient was prescribed antibiotics to treat the deep incisional infection (confirmed via intraoperative cultures) and outfitted with negative pressure wound therapy (NPWT). Despite ongoing NPWT and regular dressing changes twice weekly, the care team remained concerned about the persisting tunnel that was slow to close.

Acknowledgements and Disclaimer:

This case was supported by Stimlabs[®] LLC, Roswell, GA. Patents: https://stimlabs.com/patents. Performance testing for Corplex P in conjunction with negative pressure wound therapy has not been performed. The wound treatment algorithm is under the discretion of the physician. For detailed product safety and device application information, refer to the Instructions for Use.



Representative image of particulate





Figure 2: Postoperative wound dehiscence (a) 24 days prior to dHUCP treatment and (b) 17 days prior to dHUCP treatment.



Figure 3: 5 days prior to dHUCP treatment.



Figure 5: Day 5 of dHUCP treatment, prior to second dHUCP application. Peri-wound visibly irritated from the NPWT.





Figure 4: Day 0 of dHUCP treatment, prior to dHUCP application.



Figure 6: Day 14 of dHUCP treatment. Tunneled portion of the wound resolved.

RESULTS

DISCUSSION AND CONCLUSION

- multidisciplinary approach.

References:

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• After the infection was cleared, clinical necessity of dHUCP device was established to manage the wound as tissue regrowth occurred, particularly targeting the deep tunneled area (Figure 3).

Day 0: Wound size 8cm x 1cm x 0.3cm, with a tunneled area 2cm x 1.5cm x 1.5cm (Figure 4). 4cc of dHUCP was hydrated and applied as an adjunctive treatment to facilitate complete wound closure. dHUCP application was followed by a non-adherent, NPWT dressings, and NPWT device.

• Day 5: NPWT discontinued due to irritation of the peri-wound (Figure 5).

Day 7: Wound redness and irritation decreased after discontinuing NPWT (not pictured). An additional 4cc of dHUCP was applied in the wound edges and covered with a silicon nonadherent dressing, which the patient was instructed to change on day 10.

Day 14: One week after the second dHUCP treatment, the wound size decreased by 98% to 3cm x 0.1cm x 0.2cm, and the tunneled portion was resolved (Figure 6). No drainage was reported. The patient was requested to return in 3 weeks and continue with standard at home care.

Day 35: Wound was confirmed fully closed.

• The versatile particulate format of dHUCP in combination with its diverse matrix composition² was advantageous in this case and facilitated expedited resolution of the dehisced wound.

 Patient reported satisfaction with pain resolution, and the care team was pleased with the wound progression.

• This case highlights the complexity of managing challenging wounds in patients with comorbidities, and emphasizes the importance of a

• The use of advanced wound care products like dHUCP can be instrumental in achieving wound closure in challenging cases.

> The integration of surgical, pharmacological, and innovative wound management strategies proved effective in this patient's recovery.

• dHUCP is a novel advancement, offering an allogeneic device with a unique structural complexity designed for challenging wound topographies and readily incorporates into the wound as it heals.

^{1.} Rosen RD, Manna B. Wound Dehiscence. [Updated 2023 May 1]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK551712/

^{2.} Croteau D, Buckley M, Mantay M, Brannan C, Roy A, Barbaro B, Griffiths S. A Novel Dehydrated Human Umbilical Cord Particulate Medical Device: Matrix Characterization, Performance, and Biocompatibility for the Management of Acute and Chronic Wounds. Bioengineering (Basel). 2024 Jun 8;11(6):588. doi: 10.3390/bioengineering11060588. PMID: 38927824; PMCID: PMC11200885.