

Treatment of Large Refractory Atypical Buttock Wound from Systemic Fungal Infection with Novel Transforming Powder Dressing: Case Study of Critically Ill Nine-Year-Old Male

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INTRODUCTION

Wounds and resulting complications are challenging, especially when standard of care (SOC) therapies fail, prompting clinicians to think "out of the box." This case study involves a 9-year-old male with multiple medical conditions including antibody autoimmune hemolytic anemia. He was admitted with shortness of breath and jaundice, requiring dialysis, ECMO and emergent intubation. The Wound Care team was consulted for what appeared to be a deep tissue injury on the buttocks but was ultimately determined to be a systemic fungal infection (*Rhizopus*). Complications resulting from SOC treatment highlight the need for incorporating new technologies, like transforming powder dressing (TPD*) into our wound care regimen.

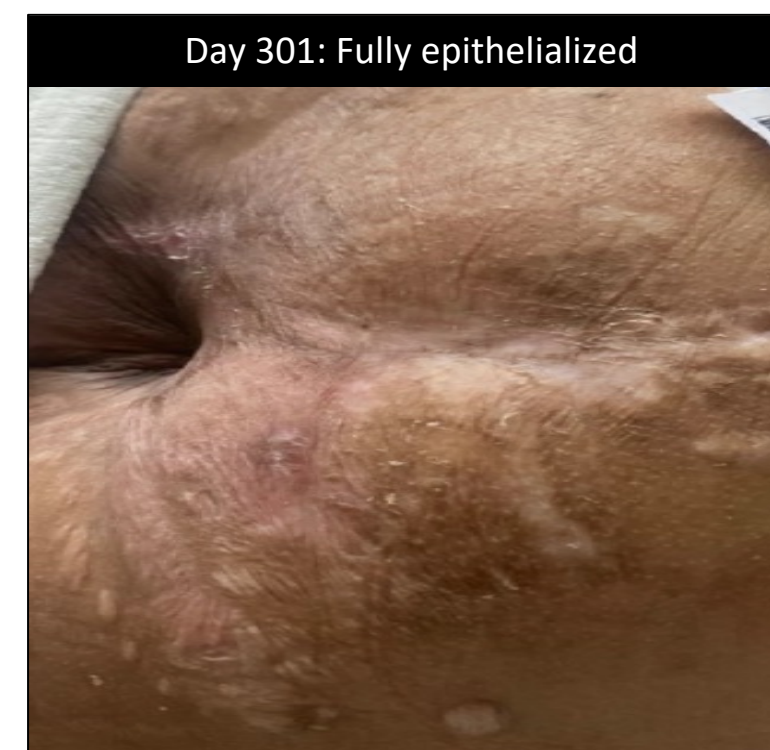
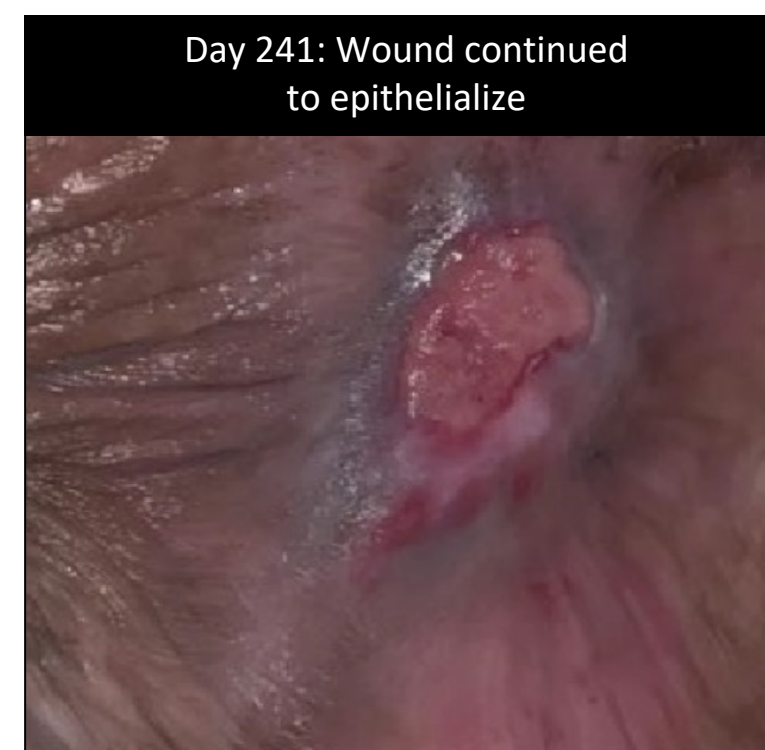
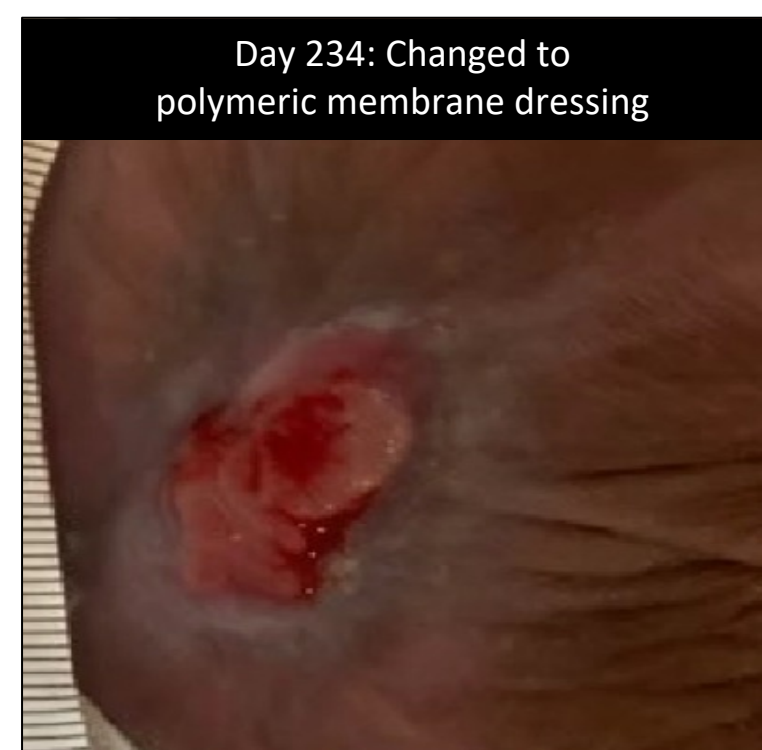
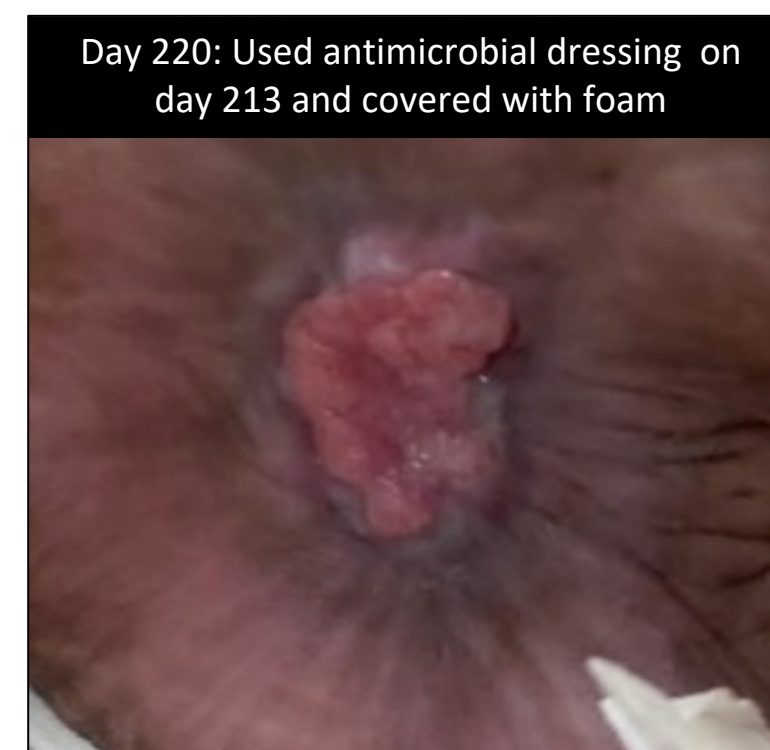
METHODS

The wound required serial surgical wound debridements involving bilateral buttocks and posterior thigh. The wound circumscribed the anus and uncontrolled stooling necessitated multiple dressing changes per day. Negative pressure wound therapy (NPWT) was applied after a diverting colostomy. However, painful dressing changes necessitated premedication with conscious sedation and bleeding complications prompted NPWT discontinuation. TPD was initiated to treat the 2,794.5 cm³ buttock wound (27 × 23 × 4.5 cm with a 6 cm tunnel).

TPD is a novel, extended wear (up to 30 days) dressing comprised of polymer granules that transform into a moist, protective matrix to cover the wound surface when hydrated with saline. TPD was applied and secured with a non-adhesive contact layer, gauze, and an egress system to manage drainage initially and then transitioned into a foam dressing.

RESULTS

Within 10 days of TPD treatment, new granulation tissue was observed over the muscle and grafting/multilayer closure was performed. However, the graft failed and TPD applications were resumed until ready for closure. However, the wound incision dehiscd and TPD was restarted until granulation was complete. No complications were observed from TPD.



DISCUSSION

Conversion to TPD eliminated bleeding complications, the need for conscious sedation and all pain medications. Wound care assessments were reduced from multiple times a day to 2x/week for the initial 10 days and to weekly thereafter. TPD stimulated granulation and the wound was transitioned to SOC dressings. The wound healed without further complications. TPD provided a viable course of treatment where conventional SOC and surgical interventions failed while reducing clinician time and material cost.

REFERENCES & ACKNOWLEDGEMENTS

References: 1. Gunaydin SD, Arikan-Akdagli S, Akova M. Fungal infections of the skin and soft tissue. *Curr Opin Infect Dis.* 2020 Apr;33(2):130-136. doi: 10.1097/QCO.0000000000000630. PMID: 31990815. | 2. Black JM, Berke CT. Deep Tissue Pressure Injuries: Identification, Treatment, and Outcomes Among Critical Care Patients. *Crit Care Nurs Clin North Am.* 2020 Dec;32(4):563-572. doi: 10.1016/j.cnc.2020.08.006. Epub 2020 Oct 7. PMID: 33129414. | **Acknowledgements:** This poster was developed in collaboration with Altrazeal Life Sciences Inc. (ALSI). All clinical assessments were conducted independently by AdventHealth. Tammy Lichtman and Rosalyn Barnabee serve as clinical consultants for ALSI. For application instructions and risks of this device please refer to Altrazeal Instructions for Use.