



Enhancing Healing Trajectories in Pressure Injuries Through Targeted Desloughing and Antimicrobial Control



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Introduction

- Stage 2–3 pressure injuries often accumulate necrotic slough, particularly in patients who are not candidates for operative debridement¹
- Effective nonsurgical strategies are therefore required to facilitate wound bed preparation and infection control
- A contemporary dressing combines electrostatic debridement and infection prevention^{2,3}
- These highly charged fiber dressings employ electrostatic interactions to bind and remove necrotic slough while providing antimicrobial activity^{2,3,4}
- We present two cases demonstrating the use of this dressing in a complex, non-healing pressure injury

Case Presentation

- 64-year-old morbidly obese male who had undergone wide excision for severe left thigh and perineal hidradenitis suppurativa that then developed a postoperative pressure wound near the ischium
- 73-year-old female developed a stage IV buttock pressure injury after prolonged immobilization
- Original treatment included NPWT, pressure offloading, nutritional optimization, and frequent follow ups
- Revised treatment regimen included pure hypochlorous acid (pHA) wound soaks and highly charged silver fiber dressing and coordinated wound care management

Methods

- Initiation of pure hypochlorous acid (pHA) wound soaks for antimicrobial cleansing
- Application of highly charged silver fiber dressing to facilitate electrostatic debridement and provide antimicrobial activity
- Dressing changes performed as part of routine wound care with ongoing wound evaluation
- Serial wound assessment performed to evaluate changes in granulation tissue formation and healing progression

Results

Case 1



Figure 1A: Pressure injury developed after prolonged positional stasis due to complex surgical excision



Figure 1B: Ischial pressure injury after initial debridement

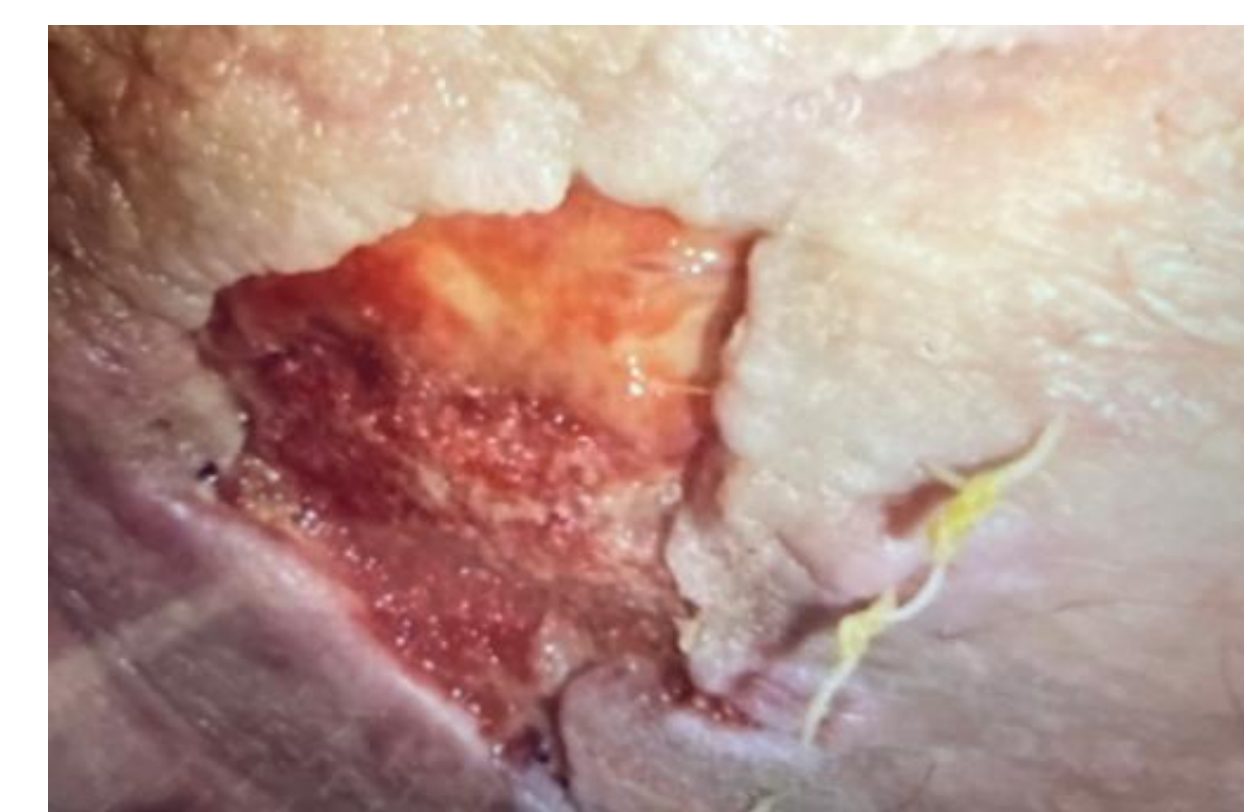


Figure 1C: Pressure injury progression with standard wound care



Figure 1D: Ischial pressure injury after two weeks of wound care including charged fiber dressings

Case 2

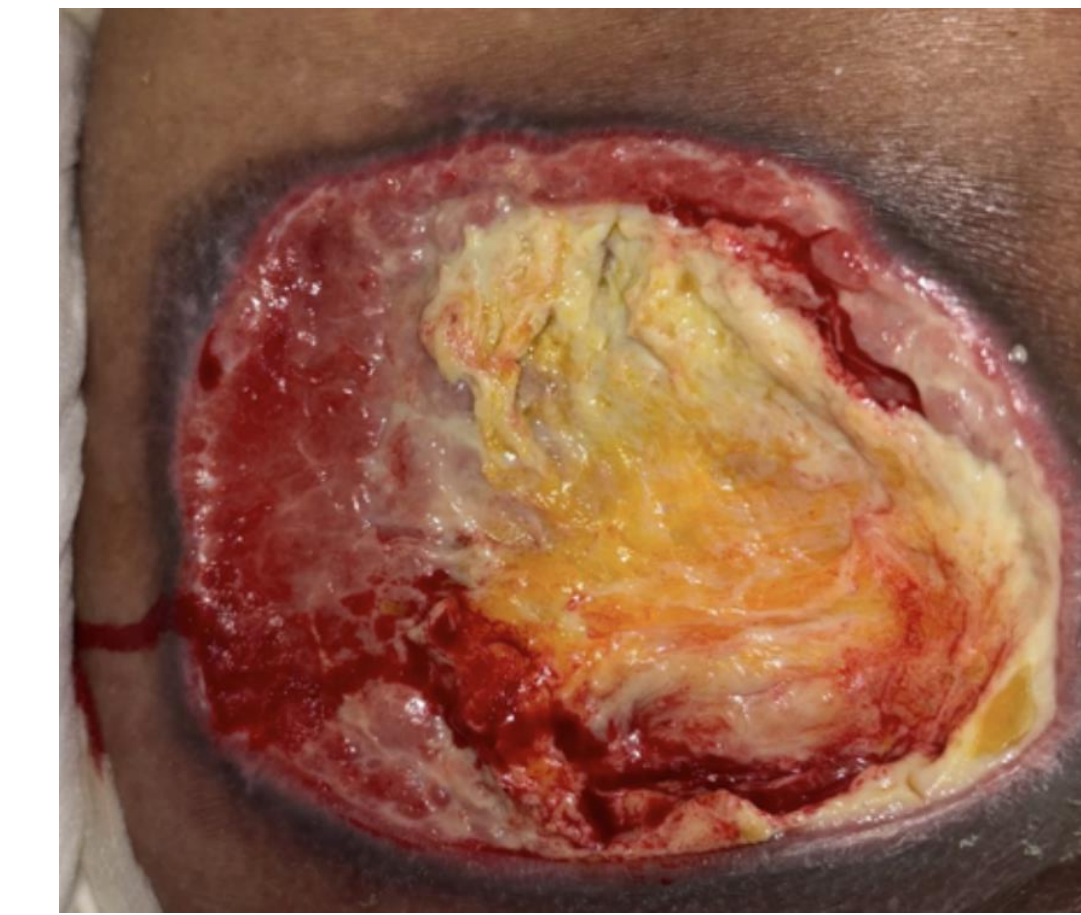


Figure 2A: Pressure injury developed after prolonged immobilization



Figure 2B: Buttock pressure injury after the initial debridement



Figure 2C: Pressure injury progression standard wound care



Figure 2D: Buttock pressure injury after two weeks of wound care using charged fiber dressings

Key Pearls

- Shear-related wounds in pressure-bearing areas may respond poorly to standard care
- Highly charged silver fiber dressings may facilitate electrostatic removal of slough while providing adequate antimicrobial coverage
- pHA wound soaks offers a well-tolerated antimicrobial wound cleansing option that may support wound bed preparation

Results

- Following initiation of the electrostatic fiber dressing regimen, granulation tissue formation was observed within 2 weeks
- Reduction in slough burden and increased granulation tissue formation was observed in both cases
- Decreased wound odor and drainage noted within the early weeks of therapy
- Both patients demonstrate favorable healing trajectories and avoided operative debridement

Conclusion

Charged fiber dressings dual mechanism including gentle autolytic desloughing through poly-absorbent fibers and antimicrobial control from ionic silver, promotes an optimal wound bed for tissue repair even in comorbid pressure injuries. Evidence supports the integration of charged fiber dressings into pressure injury care to reduce infection risk and enhance wound progression. Appropriate dressing selection is essential, particularly when surgical intervention is not feasible. Findings from this case series reinforce the value of these dressings as an important component of multidisciplinary nonoperative pressure injury management.

References

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