A Bordered Silicone Foam Dressing as Secondary Coverage Over Collagen-Based Primary Treatments in Chronic Full-Thickness Pressure Injuries

A PROSPECTIVE CASE SERIES

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INTRODUCTION

Chronic full-thickness pressure injuries (PIs) open beyond 90 days often demonstrate stalled healing despite advanced primary treatments. Collagen-based primary treatments—ranging from collagen dressings to cellular tissue-based products (CTPs) and platelet-rich plasma (PRP)—stimulate extracellular matrix deposition but require effective secondary coverage to manage exudate and protect developing tissue.

Recent Medicare coverage policy changes for CTPs and Coverage with Evidence Development requirements for PRP have created variable access to advanced therapies across clinical settings. Clinicians need versatile secondary dressings that perform consistently regardless of which collagen-based primary treatment is accessible.

This prospective case series evaluates a three-dimensional conforming bordered silicone foam dressing as secondary coverage over various collagen-based primaries in chronic PIs with depths of 0.5-2.0 cm.

METHODS

Ten patients with PIs open >90 days were enrolled. Baseline assessments included wound depth, tissue type, periwound condition, pain scores, and subcutaneous perfusion using near-infrared spectroscopy (NIRS). Collagen-based primary treatments were applied to debrided wound beds, followed by the bordered silicone foam dressing as secondary coverage. Dressing changes occurred three times weekly.

Weekly assessments documented wound depth, granulation tissue formation, periwound status, wound bed temperature, patient-reported pain, dressing adherence, and wear time over six weeks.

RESULTS

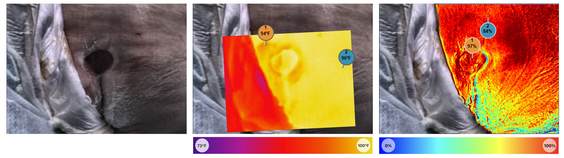
SEE SELECTED CASE EXAMPLES →

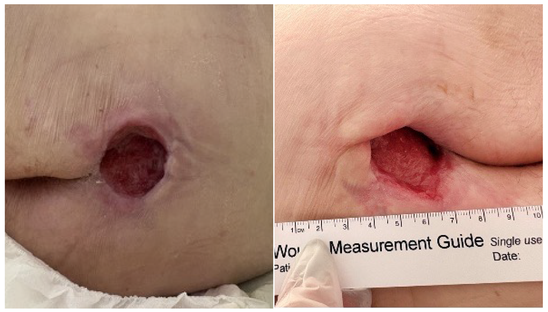
All ten patients demonstrated measurable wound depth reduction, with mean decrease of 1.1 cm over six weeks. Eight patients (80%) achieved ≥50% depth reduction; three wounds (30%) closed completely. Near-infrared spectroscopy documented stable wound bed temperatures within optimal healing range (30.2-33.0°C). The secondary dressing demonstrated minimal strike-through and no periwound maceration. Patient-reported pain scores decreased from mean 5.2 at baseline to 2.1 at week six (59% reduction). No adverse events were observed.

Case #1 SACRUM, STAGE 4 PI | IMAGED DECEMBER 12, 2025)

NIRS Interpretation: Near-infrared spectroscopy shows characteristic cold spots at wound edges typical of pressure injuries, with no hot spots indicating absence of inflammation or infection. Well-prepared wound bed with adequate perfusion.

Progress Snapshot: 12/12/2025 → 1/26/2026



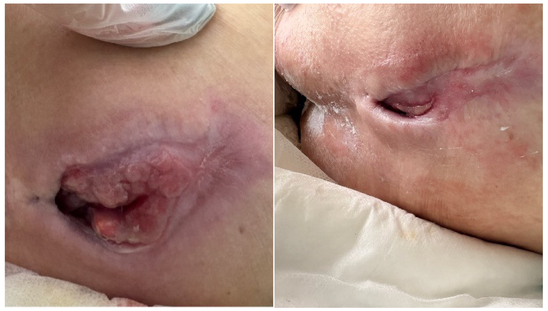


Volume: 18.252cm³ *Volume: 3.6cm³*

Case #2 SACRUM, STAGE 4 PI | IMAGED JANUARY 4, 2026

NIRS Interpretation: Cold spots indicate pressure injury pattern with sufficient perfusion for healing. No thermal signatures of shear or infection. (Note: White material may appear green on imaging; artifact only.)

Progress Snapshot: 1/4/2026 → 2/19/2026

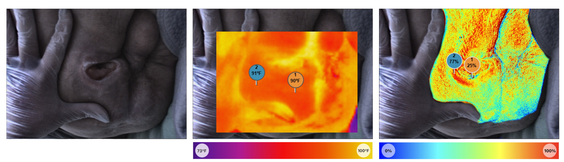


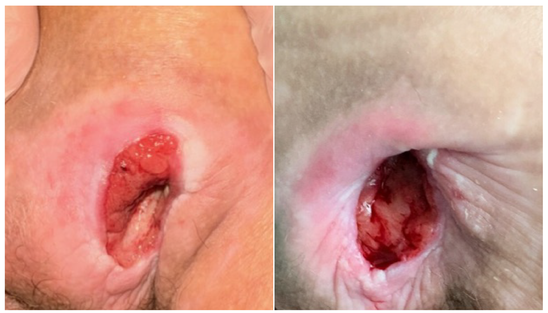
Volume: 4.08cm³ *Volume: 0.6cm³*

Case #3 RIGHT GLUTEAL FOLD, STAGE 4 PI | IMAGED JANUARY 23, 2026

NIRS Interpretation: No thermal signatures of inflammation or infection. Cold pattern on right side likely reflects recent repositioning (transient physiological response). Well-prepared wound bed with minimal low-oxygenation area.

Progress Snapshot: 1/23/2026 → 3/6/2026





Volume: 4.86cm³ *Volume: 7.14cm³ | 1 Week post-surgical debridement*

DISCUSSION

This case series demonstrates promising outcomes using a bordered silicone foam dressing as versatile secondary coverage over collagen-based primary treatments in chronic pressure injuries with significant depth. The three-dimensional conforming properties accommodated wound depths while maintaining periwound integrity and thermoregulation supporting wound healing.

Given variable access to advanced collagen-based therapies across clinical settings, a secondary dressing performing consistently across available primary modalities offers practical value. This approach achieved substantial depth reduction and 30% complete closure.

Select case examples illustrate resolution of hypergranulation tissue following the treatment protocol, demonstrating the dressing's ability to support balanced wound bed preparation.

Near-infrared spectroscopy demonstrated exceptional dressing biocompatibility with no signs of skin irritation, moisture-associated skin damage (MASD), maceration, or thermal signatures indicative of infection throughout the treatment period.

These findings support further controlled studies validating this dressing combination in stalled pressure injuries.

CONCLUSIONS

Bordered silicone foam dressing as secondary coverage over collagen-based primaries demonstrated an 80% rate of achieving ≥50% depth reduction, 30% complete closure, and 59% pain reduction. Near-infrared spectroscopy confirmed exceptional biocompatibility with no signs of irritation, MASD, or infection. Results warrant larger controlled studies.

REFERENCES

1. Beeckman D, Fourie A, Raepsaet C, et al. Silicone adhesive multilayer foam dressings as adjuvant prophylactic therapy to prevent hospital-acquired pressure ulcers: a pragmatic noncommercial multicentre randomized open-label parallel-group medical device trial. *Br J Dermatol*. 2021;185(1):52-61.

2. Graumlich JF, Blough LS, McLaughlin RG, et al. Healing pressure ulcers with collagen or hydrocolloid: a randomized, controlled trial. *J Am Geriatr Soc*. 2003;51(2):147-154.

3. Gethin G, Ivory JD, Sezgin D, Muller H, O'Connor G, Vellinga A. What is the "normal" wound bed temperature? A scoping review and new hypothesis. *Wound Repair Regen*. 2021;29(5):843-847.

4. Centers for Medicare & Medicaid Services. Autologous platelet-rich plasma. Accessed December 10, 2025.

5. Alliance of Wound Care Stakeholders. Wound care advocacy wins: separate, site neutral payments for CTPs/skin substitutes remove access barriers. November 2025.

SCAN QR CODE TO WATCH VIDEO
An Interview with the Lead Study Author

Product Notation
Bordered silicone foam dressing refers to Biatain® Silicone Fit, Coloplast Corp., Minneapolis, MN | Near-infrared spectroscopy refers to MIMOSA Pro, Mimosa Diagnostics, Toronto, Ontario, Canada

Acknowledgment:
Dressings provided by Coloplast Corp.

Conflict of Interest Statement:
The author declares no financial conflicts of interest related to this work. Biatain Silicone Fit dressings used in the study were provided by Coloplast; however, the company had no involvement in study design, data collection, data interpretation, or manuscript preparation. The author received no financial compensation, incentives, or direction from Coloplast or any other manufacturer, and all clinical decisions and conclusions were made independently based on patient care considerations.

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