

Advancing Secondary Intention Healing in Complex Post-Mohs Defects with a Borate-based Bioactive Glass Fiber Matrix

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INTRODUCTION

Non-healing post-Mohs surgical wounds present a substantial clinical management challenge, particularly when complicated by exposed bone, delayed granulation, or patient-specific factors that limit reconstructive options. Although many postoperative defects heal reliably by secondary intention, a subset, especially those involving deeper structures or prolonged tissue desiccation, fail to progress using standard wound care alone.^{1,2} Advanced adjunctive therapies may be required to optimize the wound environment and support re-epithelialization. A Borate-Based Bioactive Glass Fiber Matrix (BBGFM), a fully resorbable, degradable scaffold designed to maintain physiologic moisture balance, has emerged as a potential option for complex surgical wound beds. This case series describes two non-healing Mohs defects treated with BBGFM.

METHODS

Two patients with recalcitrant post-Mohs wounds were managed in an outpatient wound center. Both cases involved periosteum stripping, which precluded skin grafting. Both patients declined scalp flap closure.

- **CASE 1:** A forehead defect that remained non-healing one month after Mohs excision of a basal cell carcinoma. The wound exhibited minimal granulation and early contraction failure. BBGFM was applied weekly with moisture-balancing secondary dressings.
- **CASE 2:** A chronic scalp wound three months post-Mohs surgery for a basal cell carcinoma, presenting with exposed, desiccated calvarial bone and lack of granulation following prior treatment with a dehydrated amniotic membrane graft. The patient declined rotational flap closure. Over ten weeks, the wound received five applications of BBGFM alongside local wound care focused on hydration, protection, and gentle mechanical debridement when appropriate.

RESULTS

Both Mohs cases demonstrated favorable healing trajectories following BBGFM application.

- The forehead defect developed a robust, well-vascularized granulation base and achieved substantial epithelial advancement within five weeks, requiring three total applications.
- The chronic scalp defect, initially characterized by exposed bone and stalled healing, progressed to approximately 95% closure over ten weeks, with soft tissue coverage forming reliably over areas of previously desiccated calvarium. No adverse events or treatment-related complications were observed.

CONCLUSION

In this small series, BBGFM functioned as a useful adjunctive therapy for complex post-Mohs wounds that had failed to progress with standard care. Improvements were seen in granulation quality, epithelial migration, and overall wound trajectory, suggesting potential value for patients who are poor surgical candidates or present with challenging anatomic or tissue-healing constraints.

REFERENCES

1. Liu KY, Silvestri B, Marquez J, Huston TL. Secondary Intention Healing After Mohs Surgical Excision as an Alternative to Surgical Repair: Evaluation of Wound Characteristics and Esthetic Outcomes. *Ann Plast Surg.* 2020;85(S1 Suppl 1):S28-S32.
2. Gil-Lianes J, Marti-Marti I, Morgado-Carrasco D. Secondary Intention Healing After Mohs Micrographic Surgery: An Updated Review of Classic and Novel Applications, Benefits and Complications. *Actas Dermosifiliogr.* 2025;116(5):511-520.

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*Mirragen Advanced Wound Matrix, ETS Wound Care, LLC. This poster was prepared in collaboration with ETS Wound Care, LLC. All protocols and clinical assessments were conducted and reported independently by Promedica & Utoledo Health without any financial compensation from the manufacturer. For application instructions and risks of this device, please refer to the Mirragen Instructions for Use.

CASE 1: Mohs Surgery at BCC of the Forehead

Age: 81
Gender: Female
Eliquis for A fib
Non-healing forehead Mohs defect one month after the removal of BCC
Denuded bone with no periosteum

- Previous Treatments:
- SOC
 - Wound gel dressing changes



Before Mirragen started.



One week post-debridement and Mirragen application



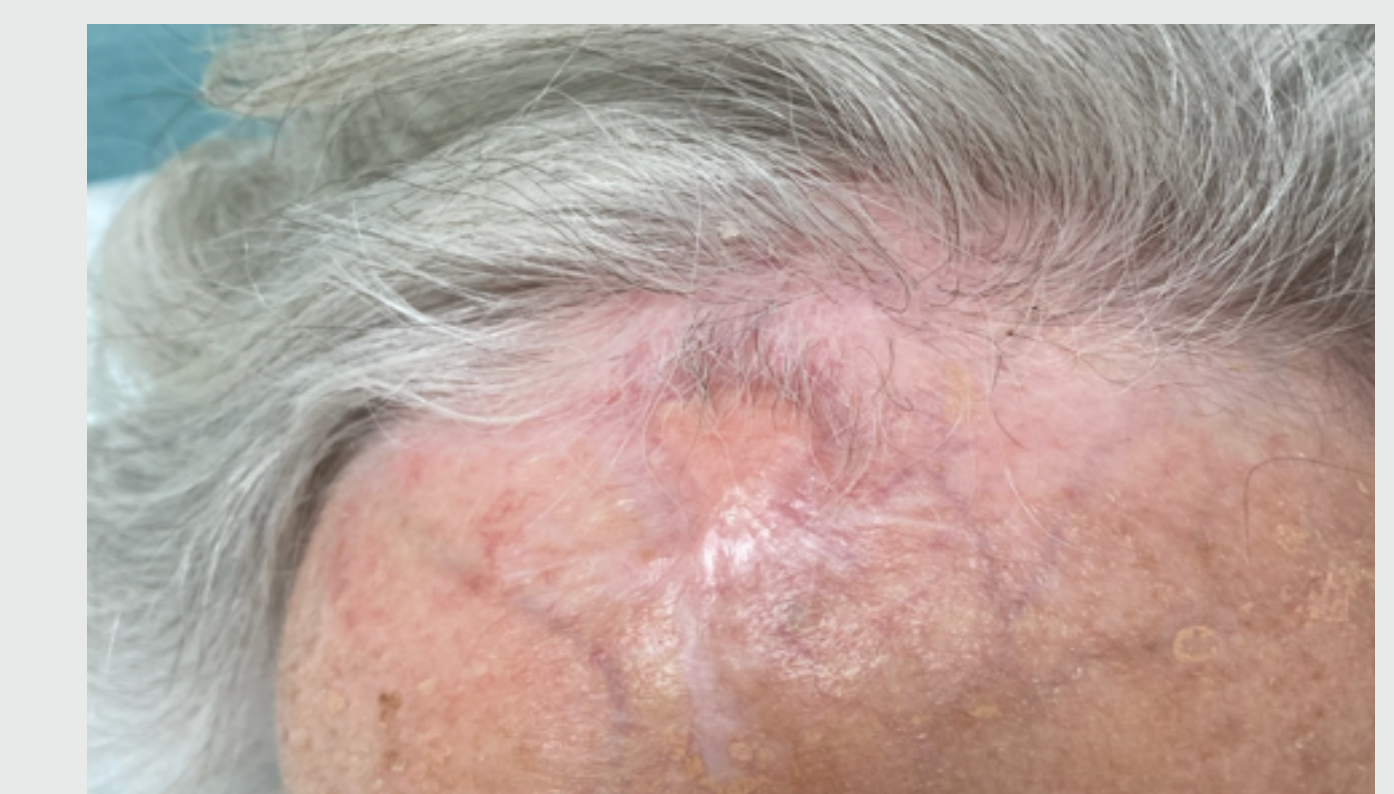
3 weeks from presentation and after second Mirragen application



Dry Mirragen removed. Punctate bleeding from viable frontal bone outer table.



5 weeks from presentation. Healing wound after 3 Mirragen applications.



Complete wound closure at final follow up

CASE 2: Mohs Surgery at Left Parietal Scalp

Age: 87
Gender: Male
Comorbidities:
• Squamous Cell Carcinoma SCC
• 3-month-old wound after Mohs excision and application of dehydrated amniotic membrane.
• CHF

- Previous Treatments:
- Mohs
 - Dehydrated Amniotic Membrane
 - Dry desiccated outer table of skull
 - Declined closure with rotational scalp flap



Before Mirragen started.



Week 0: When Mirragen started after debridement of dry outer skull table with curette



Week 4: 3 Mirragen applications. Residual Mirragen in wound bed. Further debridement of necrotic bone with ronguer



Week 6: 4 Mirragen applications.



After 10 Weeks: 5 Mirragen applications. 95% healed wound.



Complete wound closure at final follow up