Improved Graft Donor Site Management and Patient Tolerability Using a Biodegradable Hemostatic, Cellulose Matrix

Allegra L. Fierro MD, Nicholas J. Stafford MD, Lauren Rodio BS, John C. Lantis II MD

Mount Sinai West, Department of Surgery, Division of Vascular Surgery, New York, NY

Icahn School of Medicine at Mount Sinai, Department of Surgery, New York, NY

Icahn School of Medicine at Mount Sinai

PURPOSE

- At our institution, the standard of care for managing donor sites in patients who undergo split-thickness skin grafting has been the application of oxidized, regenerated cellulose mixed with thrombin, placed directly on the wound bed post-harvest.
- However, we have noted patients tend to have moderate post-application drainage, discomfort, and frequently require reapplications.
- BloodSTOP® (LifeScience PLUS, Inc., Mountain View, CA) is a novel, biocompatible, etherified carboxymethyl cellulose matrix (ECCM) marketed for rapid hemostasis, increased patient comfort, and improved wound management.[1]
- We used the ECCM in split-thickness skin graft (STSG) donor sites to assess if it was equally as effective in promoting hemostasis and donor site healing as our standard therapeutic intervention.

METHODS

- Each patient's lateral thigh was prepped with mineral oil prior to autologous donor site graft harvest.
- After harvesting, the ECCM was cut to size and placed immediately on the donor site.
- The surrounding area was cleaned with saline, dried, and tincture of benzoin was applied.
- Tegaderm was then placed overlying the ECCM.
- At 96 hours post-application, the tegaderm was removed, and a new Tegaderm was placed.
- All patients were discharged at 96 hours, with planned follow up in our outpatient clinic at 1 week.

RESULTS

- Patients had rapid cessation of bleeding at the time of the STSG harvest after applying ECCM.
- Post-application, patients had good control of their wounds with minimal drainage and discomfort.
- Three patients required dressing reinforcement during the 96 hours post-application, all of which were notably on full-strength anticoagulation.
- Re-application at 96 hours was not required in any patients.
- Donor site healing was notably faster in all patients, with some showing re-epithelialization at the 96 hour dressing change.
- In patients who had undergone prior STSG harvests, all but 1 patient noted ECCM to be much more comfortable than the previous regimen.

CONCLUSION

- A single application of ECCM is a cost-effective strategy for donor graft site management that reduces pain and drainage.
- Patient satisfaction was greater with ECCM in patients who had previously undergone STSG harvests using our previous regimen.
- The ECCM product works very effectively and evaluating its use in the future as an adjunct to wound healing may be an interesting and worthwhile endeavor.

REFERENCES

1. BloodSTOP® hemostatic dressing - lifescience plus: Bloodstop. LifeScience Plus | BloodSTOP. September 11, 2023.https://lifescienceplus.com/products/bloodstop-hemostat-for-surface-wounds
2. Components of poster previously presented at Innovations in Wound Healing, 2023, Key Largo, FL.

The ECCM (BloodSTOP®, LifeScience PLUS, Inc., Mountain View, CA) was provided to us for use free of charge