

Fractional Blister Grafting for Non-Healing Burn Wounds.

Andrew Ferdock
St. Mary's College of Maryland

Hamed Amani MD
Lehigh Valley Health Network, Hamed.Amani@lvhn.org

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Fractional Blister Grafting for Non-Healing Burn Wounds

Andrew Ferdock, Hamed Amani, MD FACS
Lehigh Valley Health Network, Allentown, Pennsylvania

BACKGROUND / INTRODUCTION

- Blister grafts have been shown to be effective in promoting re-epithelialization in wound sites that other treatments had failed to help close.¹⁻³ The method for blister grafting to treat pigmentation diseases was first described in 1964.⁴
- The cellutome™ automated harvesting system was first introduced to the US market in 2013. We started using the cellutome™ blister grafting procedure in September 2015.
- The procedure is done in the outpatient setting. This reduces patient anxiety and the perceived set-back of returning to the OR and possible hospital re-admission.

METHODS

- We examined the charts of all patients treated in the burn center with this device for non-healing wounds in a retrospective review
- Data collected was: age, gender, wound etiology, wound location, comorbidities, duration of wound from presentation to cellutome™ procedure, wound healing time, percent epithelialization 6 weeks post-procedure, donor site healing time, complications at wound or donor site, pain during procedure, hospital charges, costs of dressings
 - Comorbidities defined as diabetes, vascular disease, obesity, symptomatic CAD, immunosuppression

PROCEDURE



Figure 1: Automated epidermal graft harvester with raised blisters inside suction chamber.



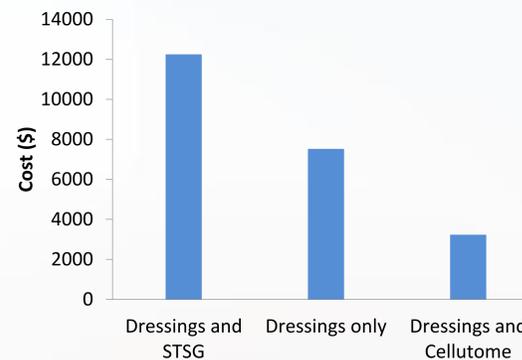
Figure 2: Individual blisters applied to backing material.

RESULTS

- 37 patients met the inclusion criteria
- Mean age was 54.7±20.9 years, 59.5% were male
- 81% of wounds in this series were burn wounds, 1 diabetic foot wound, 3 trauma wounds, 3 vasculitis sores
- Majority of wounds were located on the lower extremities (64.8%) and feet (24.3%)
- Mean wound duration from presentation to the epidermal autografting procedure was 93.0±78.9 days
- 81% of wounds healed successfully
 - In all cases of a wound failing to heal, patient suffered from one or more comorbidities.
- Mean wound healing time was 43.9±23.4 days (range 21-125)
 - 65% of subjects were at or near full epithelialization (>95%) six weeks post-procedure
 - 24.3% developed complications at the wound site
- Donor sites did not develop complications and took a mean of 12.8±6.3 days to heal
- Pain during the procedure was nearly unanimously reported as a 0 on the Lickert scale. One patient reported a rating of 3
- Mean cost of the procedure and subsequent dressings was \$3219.98

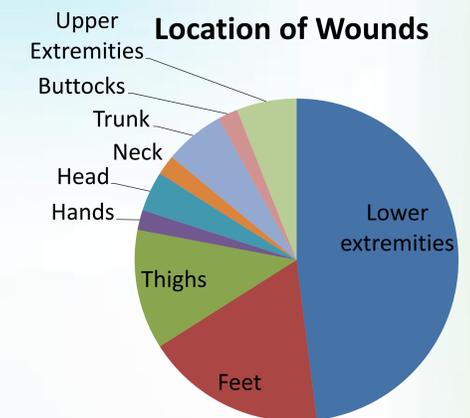


Figure 3: Donor site immediately post-procedure before tegaderm was applied.



DISCUSSION

- Non-healing burn wounds can pose a significant obstacle to the healing and rehabilitation of those that have suffered larger surface area burns. Most of the wounds seen in this series were located on the lower extremities and feet. Epidermal autografting significantly reduced the time that a small, chronic wound took to heal. However, the presence of a comorbidity significantly reduced the likelihood of the wound healing. Pain during the procedure was reported as minimal and donor sites did not develop complications in this series.



CONCLUSIONS

- Blister grafting is an effective, time-saving, and minimally invasive alternative to split thickness skin grafting. Patient compliance and reduction of comorbidities cannot be controlled in the outpatient setting, but produce significant effects on the outcomes of wound treatment.

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