

Longitudinal Wale Elastic Compression Textile Controls Comorbid Wound Edema to Improve Wound Healing

MARTIN J WINKLER MD FACS | Creighton University Mercy Wound Clinic, Omaha Nebraska

PROBLEM

- Bilateral Refractory VLUs present > 20 months
- Polycythemia Rubra Vera Recent MI
- CHF, not taking diuretics (diuresis > 45 lbs. by day 60)
- Diabetes
- Pain disrupts activities of daily living, limits elastic compression and prevents effective wound debridement



Painful dermatitis prevents effective debridement. At 19 days, exudate is heavy and wounds are not "clean."



Longitudinal yarn compression stocking* is fenestrated and wound covered with Leva Fiber hydroconductive** dressings.

METHODS

- Wound bed preparation, weekly debridement and topical HOCI***Rx
- Longitudinal wale elastic compression stocking*
- Leva Fiber hydroconductive contact dressing**



Observe decreased swelling in the periwound skin, cornrow furrows and decreased redness after a week of EdemaWear® therapy.



Fenestrated EdemaWear compression textile on the left leg.



Left leg ulcer responds to Drawtex** hydroconductive therapy, exudate decreases and wound bed preparation proceeds slowly. Observe decreased redness in periwound skin.

OUTCOME DAY #60

- Ulcers respond to hydroconductive Rx & longitudinal wale compression
- Dermatitis pain decreases, enabling increased elastic compression
- Exudate decreased dramatically

PROBLEM

- VLU reoccurs in a chronic scar and is neglected
- Economic and cultural barriers



METHOD

Wound presented with tunneling that required unroofing with curette



Sharp debridement with Lidocaine jelly and HOCI*** solution pretreatment.



Wound dressed with Leva Fiber and a three layer compression dressing with EdemaWear®* as the "elastic engine" compression layer.



Patient continued to work during treatment as a butcher, standing comfortably for 10 hour shifts with EdemaWear delivering compression on the small recurrent VLU and retaining the dressing. During final weeks of therapy he used EdemaWear and a gauze dressing that was changed after work, he took daily showers and showered sprayed the wound. EdemaWear has the advantage that it is easy to remove and reapply allowing active patients to shower and do daily wound care while delivering reliable comfortable compression.

OUTCOME

- Discharged, VLU 90% healed at week #7
- Lost to follow up because of insurance coverage

PROBLEM

- Senile postmenopausal hypotrophic skin
- Car door pretibial skin avulsion sutured in ER
- Painful infected swollen leg
- Venous insufficiency



Female with thin senile skin had car door avulsion injury 13 days before presenting at wound clinic with painful infected swollen leg.

METHODS

- Sutures removed, wound irrigated with HOCI solution***
- Thin sterile contact dressing
- Longitudinal Wale Compression Stockinet*



Observe that edema and redness have disappeared and that wound is nearly closed.

OUTCOME

Discharged from clinic with 95% healed wound on Day #28

*EdemaWear®, & EdemaWear® LITE™, Quart Medical, Cambridge, Canada. Patent pending in Canada. U.S. Patent Numbers 8,034,013B2 & 8,641,653B2.
**Drawtex® SteadMed Medical, SteadMed Medical, Fort Worth Texas 76107
*** Vashe Hypochlorous Acid Solution, SteadMed Medical, Fort Worth, Texas 76107

AIM Because edema disrupts cellular physiology, similar to arterial ischemia and diabetes, wound healing is delayed. Comorbid wound edema is notoriously difficult for patients and care givers to manage. Venous leg ulcers are a pure example of wounds that require 'edema control' via elastic compression. In advanced wound parlance care, treating edema is essential for optimal Wound Bed Preparation.¹ Longitudinal elastic stockinet delivers mild compression via fuzzy wales that compress just 20% of the skin surface, creating furrows as water moves out of the subcutaneous fat, is now available in Canada.^{2,3} This real world study evaluates a longitudinal wale elastic compression textile to control periwound edema: patient compliance, cost, safety on ischemic limbs, and impact on wound healing are measured.

METHODS Fuzzy wale elastic compression was used to treat refractory leg wounds in five patients. Photographs document presentation, treatment, and healing.

RESULTS All wounds healed. Compression therapy was comfortable on painful dermatitis, easy to don and doff, easy to laundry and reuse, safe on ischemic skin, and a useful adjunct for wound bed preparation.

CONCLUSIONS Fuzzy wale elastic compression, appears anecdotally to be cost effective, comfortable and to improve wound healing rates.

References

1. Gary Sibbald, Liza Ovington, Wound Bed Preparation 2014 Update: Advances in Skin & Wound Care, March 2014 V27, Supplement, 1-13
2. Debra Kozeny, K Stott, Longitudinal yarn compression textile: An innovative treatment for leg swelling. J of Vascular Nursing, 2007, V 25, p 3.
3. Sara Foss, Matthew Livingston, A Comparison of Fuzzy Wale Longitudinal Elastic Compression to Elasticated Tubular Bandage Compression as a Tool in Reducing Lower Extremity Edema. Symposium of Advanced Wound Care May 2015 Science Poster. Link accessed July 10 2015 <http://compressiondynamics.com/wp-content/uploads/2015/06/Poster-A-Comparison-of-Fuzzy-Wale-Longitudinal-Elastic-Compression-to-Elasticated-Tubular-Bandage-Compression-as-a-Tool-in-Reducing-Lower-Extremity-Edema.pdf>