Elastic Compression of Bioengineered Human Skin Substitute Improves Chronic Ulcer Healing: Fuzzy Yarn Compression Controls Wound Bed Edema

Diabetic Ulcers
Problems
- Diabetes, on insulin
- Lateral ankle ulcers
- Pedal pulse present
- Healing staled in spite of community wound center therapy with use of honey for 5 months

Rx
- Bioengineered human skin substitute
- Hypochlorous acid solution lavages
- Acoustic powered (A) debridement
- HEMA Nanoparticle Power dressings
- Longitudinal Yarn Compression Textile

Outcome
- Ulcers healed with 12 weeks of Longitudinal Yarn Compression and bidettement control
- Ulcers healed 9 weeks after Bioengineered Human Skin Substitute

Ischemic Ulcer
Problems
- Recurrent R foot ulcers
- No healing progress over 7 months
- Pain
- NPWT x 2 months
- Atherosclerosis, absent pedal pulses
- L BKA, Relieves R BKA

Rx
- Longitudinal Yarn Compression as the first layer of a four layer dressing
- HEMA nanoparticle gel
- Bioengineered human skin substitute
- Weekly mechanical control of beddin with Hypochlorous acid solution and 22.5 kHz ultrasound debridement

Outcome
- Ulcer 80% healed 7 weeks post BeSS. Note cornrow furrows in the granulating wounds.

Recurrent Stasis Ulcer
Problems
- Recurrent L leg stasis ulcers
- Poorly-controlled diabetes
- On Prednisone for emphysema

Rx
- Longitudinal Yarn Compression textile for treatment of stasis dermatis for 11 weeks
- Sharp and later Acoustic powered (A) debridements
- Bioengineered human skin substitute. For the primary dressing, UVC was used as the first layer of a four layer dressing

Outcome
- UVC stockinet treats stasis dermatis. Wounds heal seven weeks after human skin substitute

Painful Bilateral Stasis Ulcer
Problems
- Various insufficiency
- Atherosclerosis
- On Prednisone for emphysema

Rx
- Compression with Longitudinal Yarn Compression (UVC) textile for four months to control severe stasis dermatis.
- Two applications of Bioengineered Human Skin Substitute. UVC textile was used as a primary dressing after the second BeSS application

Outcome
- Nanoparticle Polymer Powder Gel Controls Ulcer Pain
- Longitudinal Yarn Compression Stockinet (UVC) in direct contact with Granulation Tissue Speeds Healing
- Ulcers Healing, at Time of Publication, After 17 Days of Longitudinal Yarn Compression

Note the cornrow furrows in the skin surrounding the healing stasis ulcers.

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Legend
• Bioengineered Human Skin Substitute
• Hypochlorous acid solution lavages
• Acoustic powered debridement
• HEMA Nanoparticle Power dressings
• Longitudinal Yarn Compression Textile

On Prednisone for emphysema:
- Takes Prednisone 5mg daily for COPD.
- Effective.
- Pedal pulses were present. Patient has unrequited relationship with a local wound care provider

Note also the cornrow furrows in the skin how robust the skin appears after 15 weeks of yarn focused compression.

Note how thin the skin placed after 15 weeks of yarn focused compression. Bioengineered Human Skin Substitute healed the other two ulcers.

Pinch graft failed while the bioengineered human skin substitute pinch skin graft. Note the thickness wound center pinch skin graft. Note the shiny red skin reflects light and how robust the skin appears after 15 weeks of yarn focused compression. Bioengineered Human Skin Substitute.

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Wounds at first clinic visit. Note how thin the skin have been treated with collagenase debridement was halted.

Week two of therapy, severe stasis dermatitis with weeping serum and heavy bioburden. Debridements.

Week one of therapy, severe stasis dermatitis with weeping serum and heavy bioburden. Debridements.

Severe stasis dermatitis with weeping serum and heavy bioburden.

Tissue Speeds Healing
Longitudinal Yarn Compression Stockinet
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