

ABSTRACT: The Symposium on Advanced Wound Care (SAWC), Dallas, TX, April 2011

Longitudinal Yarn Compression Textile is an Effective Elastic Engine for Venous Leg Ulcer Layered Dressings: Dynamic Compression is safe and comfortable for painful ulcers.

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Problem

Modern layered compression dressings for Venous Leg Ulcer (VLU) therapy have evolved little since Sir Robert Jones' formula ("fuzzy padding + compression wrapping") for dressing injured limbs on WWI battle fields.(1) Padding stents painful tissue, down regulates cutaneous nociceptive pain mechanisms, and absorbs exudates.(2) External compression (ACE wraps) "overcomes" venous and lymphatic hypertension in subcutaneous fat – the result of venous insufficiency.(3)

Kozeny, 2006, reported use of Longitudinal Yarn Compression (*) (LYC), stockinet. The dynamic compression (**) physiology of LYC textile appears to be more effective than modern elastic stockings and wraps to control edema.(4) Fuzzy parallel yarns stent skin and subcutaneous fat to deliver elastic compression to just one fifth of the limb's surface. Furrows form in the subcutaneous fat as edema fluid is squeezed out beneath the fuzzy yarn stents. Patent lymphatics in noncompressed fat between yarns act as a low pressure sink for effluent drainage.(5) Pressure gradients between compressed and noncompressed subcutaneous fat generate a dynamic compression (**) of lymphangion subunits that is more physiologic for lymphatic function than existing circumferential compression.

This study reports initial clinical use of LYC stockinet as the dynamic compression 'elastic engine' first layer of a three layer dressing preserving Jones's formula of fuzzy padding + elastic compression.

Methods

Ten VLU patients were treated with LYC textile as the elastic engine of a three layer dressing.

Results

All wounds healed with no complications. Photos document dressing technique and healing. VLU pain under compression is discussed.

Conclusion

Longitudinal yarn compression stockinet is effective, comfortable and safe as the elastic engine for layered dressings to treat VLU.

*EdemaWear®, Compression Dynamics, LLC, Omaha, NE

**Dynamic Compression™, Compression Dynamics, LLC, Omaha, NE

References

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