

Bio Compression Pumps were used exclusively for this study

PHLEBOLYMPHEDEMA: Management of Dermal Changes and Wounds

Introduction

Lymphedema is an expression of saturation in the compensation mechanisms typical of the lymphatic system. It can be a result of the accumulation of excess intercellular fluid in the legs and feet due to lymphatic obstruction that is the result of chronic venous insufficiency or because it has a functional or organic deficit.

Many edematous conditions may, however, join together changing from one to another and getting intermixed features. Venous and lymphatic systems collaborate to maintain the micro-circulatory homeostasis of the tissues. "The presence of ANY edema, no matter what its cause, is a sign that the lymphatic system has been overwhelmed. It is also a sign that all other defenses, whose activities must not be neglected, have also been overwhelmed." Foldi (1969).

Research affirms that in cases of lower limbs with chronic venous insufficiency, treating the lymphatic problem can help with the care of phlebostasis.

Phlebolympheema compromises the microvascular and lymphatic systems, reducing cellular oxygen and nutrients and thereby affecting skin health and interfering with wound healing.

Interventions

Our treatment center developed a protocol for care for lower extremity phlebolympheema. Complex lymphatic therapy is essential to evacuate lymphostasis, which undermines the integrity of skin and impedes wound healing. Skin and wound care is the first thing that must be managed, followed by manual lymph drainage, vasopneumatic therapy, kinesiotaping, short stretch bandage application, and decongestive exercises.

Dermatological manifestations of phlebolympheema include: stasis dermatitis, lymphorrhea, hyperpigmentation, lymphostasis, verrucose cutis, papillomatosis, lipodermatosclerosis, and ulceration.

Cleansing is followed by application of various advanced skin care products formulated with Olivamine, a proprietary blend of antioxidants, amino acids, their co-factors (vitamins A, B3, B6, C and D3) and methylsulfonylmehtane (MSM). If a wound is present, appropriate wound care is provided, including debridement, followed by the application of wound dressings. Frequently, an antimicrobial controlled release (for targeted antimicrobial protection) ionic silver dressing is applied to reduce the bioburden.

While manual lymph drainage is performed, vasopneumatic therapy is applied. This helps to minimize the skin and vascular changes by forcing fluid from the interstitial spaces back into the vascular and lymphatic compartments (Cavezzi). This modality is ALWAYS applied in conjunction with manual lymph drainage, and never as an isolated treatment (Cheville).

Case Study #1

The patient is a 37-year-old male (CH) referred for lymphedema management, due to swelling and drainage of his lower legs. He relays a several year history of this condition when the swelling and skin condition became unmanageable. He was embarrassed of the foul smelling wounds that constantly drained. His medical history is significant for obesity and multiple episodes of cellulitis. The patient goals were to decrease the swelling, reduce the pain, and to improve the skin so that he could resume daily functional activities.

CH presents with hyperpigmentation, papillomatosis, fibro-sclerotic tissue texture, and hyperkeratosis of the lower leg, ankle, foot and toes. Toenails are mycotic. An amber colored thickened fluid exudes from the friable erythematous tissue.

Volume measurements indicate that the right lower leg is 13254.00ml and the left lower leg is 11778.18ml. The volume difference is 1475.82ml. The right upper leg measures 18914.90ml and the left upper leg is 18855.33ml with a volume difference of 59.57ml. He describes a pain level "8", with 0-10 pain scale, with 10 being most painful. He is independent with his activities of daily living.



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Case Study #1 cont'd

Assessment: Patient presents with clinical signs and symptoms consistent with Stage II bilateral lower extremity phlebolymphedema, which is characterized as an edema with poor skin texture, skin breakdown and lipodermatosclerosis.

After nine treatments, including manual lymph drainage (MLD), Olivamine products, compression bandaging and vasopneumatic therapy, his skin condition improved and the lymphorrhea resolved.

Volume measurement in the right lower leg was 9553.43ml, which is a reduction of 3700.57ml; and the left lower leg was 9929.21ml, which is a reduction of 1848.97ml. The total volume reduction was 5549.54ml. His pain decreased to "0" and there was no evidence of foul odor to the legs. His life long maintenance includes self-MLD, self-compression bandaging, vasopneumatic therapy at home and compression garments.

Case Study #2

The patient is a 65-year-old female (SS) who was referred for lymphedema management, due to abdominal and leg swelling with wounds. Her medical history is significant for obesity and chronic venous insufficiency. The patient goals were to reduce swelling and heal leg wounds.

Volume measurements indicate the right lower leg 3914.58ml and the left lower leg 5301.88ml. The volume difference is 1387.30ml. Volume measurements indicate the right upper leg is 9635.85ml and the left upper leg 9558.18ml. The volume difference is 77.67ml. Abdominal circumferential measurement is 202cm. Bilateral upper leg tissue health is fibro-sclerotic with skin folds. Bilateral lower leg tissue health is fibro-sclerotic with hyperpigmentation, papillomatosis and hyperkeratosis. Her abdominal pannus is grade 3 with fibro-sclerosis and orange peel textured skin.

Before



After



Before



After



Wound assessment: Location: left lateral aspect lower leg. Proximal: Size: 1.0cm x 6.0cm. Middle: 3.0 x 2.5; distal: 4.6 x 2.0 Wound base: 100% yellow slough. Exudate: Moderate straw colored fluid. She is independent with her activities of daily living. She can only walk household distances. Assessment: Patient presents with bilateral lower extremity phlebolymphedema with abdominal lymphedema, which is evidenced by thickening of the underlying tissue with severe skin alterations.

After 13 treatments, including manual lymph drainage (MLD), Olivamine products, compression bandaging, kinesiotaping and vasopneumatic therapy, her skin condition improved and the wound healed by secondary intention. Her life long maintenance includes self-MLD, self-compression bandaging, vasopneumatic therapy at home and compression garments.

Conclusion

The integration of complex lymphatic therapy, advanced skin care, vasopneumatic therapy and kinesiotaping is a proven intervention for treating phlebolymphedema.

References

Cavezzi MD, Attilio. *Elastic compression bandage in lymphedema. Phlebolymphology Platform*, available at <http://www.cavezzi.it/>. Accessed 10-11-2006

Cheville MD, Andrea. Lymphedema management. *21st Anniversary Clinical Symposium on Advances in Skin & Wound Care*, 10-1-2006 available at www.symposiumwoundcare.com.

Foldi E, Foldi M, Weissleder H. *Conservative treatment of lymphoedema of the limbs. Angiology* 1985;36:171-180.

Kunimoto MD, Brian; Cooling RN, Maureen; Gulliver MD, Wayne; Houghton PT, Pamela; Orstead RN, Heather, Sibbald MD, R. Gary. *Best Practices for the Prevention and Treatment of Venous Leg Ulcers. Ostomy/Wound Management* 2001; 47(2): 34-50.