Full Leg Application of a 2 Layer Cohesive Short Stretch Compression System for Rapid Limb Volume Reduction and Chronic Edema Management

Jody Wong, PT, CWS, CLT – LAN
Legacy Village Rehabilitation, Layton Utah

Introduction

Compression of the lower extremities is recognized as the industry gold standard in providing treatment for the majority of venous related lower extremity wounds as well as chronic secondary lymphedema and edema of many etiologies. In many patients; lower leg compression wrapping only tends to push fluid up into the knee and thigh where it is very difficult to mobilize and dissipate. When edema occurs above the knee, few bandage options besides traditional short stretch bandages are available. Providing appropriate, maintainable compression above the knee can prove difficult even for the trained lymphedema clinician. A cohesive, 2 layer compression system* has been successfully used and is well known to manage lower leg edema. My plan was to evaluate its effectiveness in managing edema of the full leg.

Patients and clinicians alike who try to manage edema issues involving the knee, proximal thigh, groin, or the entire lower extremity often express frustration and extreme difficulty with attempts to maintain compression above the knee. Common complaints are slippage, rolling and “bunching” of the bandage especially at the knee. Patients’ report becoming discouraged when the bandages loosen and with the difficulty of rewrapping their bandages, especially above the knee.

As a PT, CWS, CLT, I believe both provide wound and lymphedema treatment and regularly utilize the single use 2 layer short stretch compression system to achieve significant and rapid edema reduction in order to promote wound closure, shut down drainage and/or lymphoedema, and help prevent recurrance of ulceration.

Methods & Results

Six patients diagnosed with Stage II Secondary Lymphedema of the entire lower extremity due to a variety of etiologies were treated with standardized edema management techniques including the application of the 2 layer bandages adapted to fit the entire limb from the foot to the upper thigh. Patients were seen twice weekly with routine circumferential measurements and limb volume calculations completed regularly. Each of the patients exhibited significant limb volume reduction, improvement in tissue quality and good skin tolerance. Comparison circumferential measurements were taken and limb volume calculation were performed 5-14 days from initial evaluation.

In each case there was a significant and rapid decrease in limb volume reduction noted in the first 5-14 days from initial evaluation and/or start of care. This marked limb volume reduction was enough to allow for measurement and ordering of compression garments as appropriate for long term management of the patient.

I believe that the early results of this case series may be indicative of cost savings in relation to more effective limb volume reduction that decreases the amount of treatment visits required to achieve goals before discharge from service.

Case:

Patient with unilateral, 3+ pitting edema with non-pitting fibrosis at proximal thigh and through the adductor canal.

• Start of care 10/21/11: 41% difference between extremities
• 7 days later: 18% (390.94 ml’s) reduction (measured for garment)
• 6 days later: 7% (63.29mls) reduction
• Last visit and discharge 1/18/11: 15% (111.82 ml’s) reduction

Total Reduction: 1285.42 ml’s from start of care to discharge. Follow-up call 2/15/2012: Doing well, with no rebound edema.

Methods & Results

Utilization of the 2 layer bandage application significantly aided in the rapid and successful treatment of full leg edema of various etiologies and lymphedema.

• Limb volume reduction was maintained until the patients were fit into their compression garment for long term management.
• Patients could be measured and have garments ordered sooner into their course of treatment due to rapid volumetric reduction.
• Patients reported minimal disruption/discomfort in their daily lives during wear while maintaining mobility due to the less bulky bandage.
• None to minimal skin irritation issues were experienced.

Discussion

This wrapping technique, adapted to fit the entire limb, effectively controlled edema above and below the knee providing a rapid, effective, and highly functional treatment option for these challenging situations.

* 3M™ Coban™ 2 Layer Compression System

Conclusions