

Lipo-lymphedema

Working collaboratively to improve a patient's life

By Edith Mulhall and Wendy Leroux

Background

The patient is an 82 year-old woman residing in a personal care home. She presented with lipo-lymphedema and had heavily exudative wounds on the posterior aspect of both legs, which had been present for approximately one year. Despite the use of traditional skin-care protocols, the wounds were not healing but continued to enlarge, increasing the threat of infection. Her doctor requested consultation with a lymphedema therapist. Treatment was paid for through a joint effort by the family and a private source during the intensive phase, and by the family during the maintenance phase. We present this case in de-identified manner, with the patient's consent.

Lipo-lymphedema

Lipedema is a chronic disorder of the fatty tissue that primarily effects women. As lipedema progresses, the superficial lymphatic vessels become compressed within the excessive fatty tissue, affecting the transport capacity of the lymphatic system. If lipedema is left unmanaged, lymphedema will develop secondary to the lipedema (Zuther, 2013).

Wounds, in the presence of lymphedema, are hampered from healing and are always at risk of infection⁴. Combined Decongestive Therapy (CDT) is the treatment of choice for lymphedema with non healing wounds when there is persistent swelling³. Once wounds heal and the edema volume reduces, the patient is then transitioned into compression

TABLE 1: LEFT LEG VOLUME MEASUREMENT

| Initial Measurement | $\epsilon[(N^3)/\pi]^*$ Circumference | Volume Reduction/increases from initial measurement in cc's | Differences from Previous measurement in cc's | Segmental Volume using first 3 measurements |
|---------------------|--|---|---|---|
| July 20, 2015 Wk1 | 3653.78 | | | |
| July 24, 2015 Wk1 | 3680.23 | +26.48 | | -203.733 |
| Aug 03, 2015 Wk3 | 4544.21 | +890.43 | +863.98 | |
| Aug 12, 2015 | 3208.43 | -445.34 | -1335.78 | |
| Aug 28, 2015 Wk7 | 2799.74 | -880.49 | -408.69 | |
| Nov 24, 2015 | 2157.50 | -1496.28 | -642.24 | |

TABLE 2: RIGHT LEG VOLUME MEASUREMENTS

| Initial Measurement | $\epsilon[(N^3)/\pi]^*$ Circumference | Volume Reduction/increases from initial measurement in cc's | Differences from Previous measurement in cc's | Segmental Volume using first 3 measurements |
|---------------------|--|---|---|---|
| July 20, 2015 | 3329.72 | | | |
| July 24, 2015 | 3043.56 | -286.17 | 0 | -245.71 |
| Aug 03, 2015 | 3526.23 | +196.51 | +482.67 | |
| Aug 13, 2015 | 2720.47 | -609.26 | -805.76 | |
| Aug 28, 2015 | 2433.98 | -609.58 | -286.49 | |
| Nov 24, 2015 | 2072.02 | -971.53 | -361.95 | |

garments. This treatment can greatly improve the patient's quality of life (QOL). Therefore, our objective was to employ CDT to decrease leg volume, prevent infection and allow the patient's wounds to heal.

Medical history

The patient's medical history included atrial fibrillation, pacemaker insertion, colostomy due to a perforated bowel, osteoarthritis, chronic venous insufficiency, transient ischemic attacks, renal cancer (in remission), and a left knee replacement. The patient was admitted to the care home in 2013.

Method

Circumferential measurements were taken at initial assessment and on four other occasions (Tables 1 and 2). Photos were taken throughout the patient's treatment.

Intensive phase: This phase involved three weeks of daily treatment in an interdisciplinary fashion, involving two lymphedema-trained massage therapists and a nurse. Massage therapists removed the compression bandages and assessed the skin and tissue conditions. The nurse removed the wound dressings, then assessed, cleaned and re-banded the wound area. The massage therapists then treated both legs with Manual Lymphatic Drainage (MLD). Proximal lymph areas, abdominal to inguinal, were addressed first and then treatment gradually moved distally. In the first week, both legs were wrapped to the knee with short-stretch compression bandages. A combination of wrapping to the knee or thigh was employed after the first week, depending on what was observed. This treatment took from 1 ½ to two hours with two therapists in attendance.

Maintenance phase: In the fourth week, the transition into the maintenance phase began. Compression bandages were left on continually for two days to assess the patient's response. By week eight the patient was fitted into custom compression garments. The nursing staff was responsible for donning



Edith Mulhall, RN, CLT-LANA, is a registered nurse and a registered massage therapist trained in the Dr Vodder technique of complete decongestive therapy. She has 19 years experience working with lymphedema patients in Winnipeg. Edith is the Canadian Regional Liaison for LANA.



Wendy Leroux, BA, RMT, CLT-LANA, is a registered massage therapist trained in the Dr Vodder technique of complete decongestive therapy. She works in Winnipeg in a home-based clinic focusing her practice on treating lymphedema.

the compression garments in the morning and removing them in the evening. This allowed the massage therapists to gradually reduce MLD/CDT sessions to three days a week and to have one therapist in attendance instead of two. The time required to do the MLD/CDT treatment remained the same.

MLD/CDT was further reduced to once a week, with the occasional additional treatment to assist with fluctuating fluid levels. The treatment consisted of removing compression garments, assessing the patient's legs, providing MLD and wrapping with short-stretch compression bandages. The treatment time was reduced to 1-1 ½ hours with one therapist. Nursing staff removed the compression bandages the following morning and assisted the patient to don compression garments. The garments were removed in the evening, legs were cleaned and moisturized and compression garments washed.

Results

Volume measurements indicated a significant decrease: the left leg showed a 1496.28 cubic centimetre (cc) reduction from the initial measurements taken July 20th, 2015 and those taken November 24th, 2015. The right leg reduced 971.53 cc during that time



Figure 1: Left second toe infection.

(see Table 1 and 2). Tissue became soft and wound margins receded. (We used five circumferential measurement

points, 8 cm apart. Our starting reference was 9.5 cm from the base of the heel.)

Measurements taken August 3 indicated an increase in fluid. However, this should not be interpreted as a lack of progress at this stage. When we calculated segmental volume using just the first three circumferences (closest to the heel),



Figure 2: July 23, 2015. Right lower leg. Intensive phase. **Figure 3:** July 23, 2015. Left lower leg. Intensive phase. **Figure 4:** August 25, 2015. Posterior lower legs with patient on her left side. Intensive phase.

we measured a volume reduction of 203.733 cc on the left and 245.71 cc on the right. The more proximal measurements increased until week 3 which resulted in the recorded increase in overall volume. The overall volume decreased after week 3.

By week eight the wounds had healed significantly, no longer requiring wound care, and by week 13 the wound areas were completely dry. The patient at this point was fit into knee-high compression garments.

Other changes that were noted: regular pain medication was discontinued and the patient seemed more cheerful. With the increased comfort level, she became more mobile.

One setback occurred at week 11. The patient's 2nd toe on her left foot became infected. Antibiotics were administered and treatment was stopped until there was positive effect. Treatment resumed after two days on the right leg and after four days on the left. Despite this setback, the patient's progress was not delayed. Transitioning continued and by week 16 the patient was fitted with capri and knee high custom compression garments. Successful transitioning was indicated by the skin remaining soft and continuing to heal.

Discussion

The patient tolerated the CDT well, often sleeping during treatment.

The care home staff had no prior experience working with MLD/CDT, so the therapists provided some education. This led to more cohesive teamwork between the RMT's and nursing staff.



Figure 5: Oct 12, 2015. Patient in supine, transitioning to maintenance phase. **Figure 6:** November 30, 2015. Posterior lower legs with patient on her left side. Maintenance phase.

Transitioning into compression garments was not without setbacks. We first introduced the knee-high garments and invited staff members to a demonstration on how to put them on, as incorrect donning can have negative results. Two group education sessions were provided. There were gaps in information due to shift changes amongst staff, and this created a challenge to providing consistent, proper donning.



Figure 7: Multi-layered short-stretch compression bandaging. **Figure 8:** Custom compression garments.

Staff were instructed to clean the patient's shoes (Crocs) to prevent the spread of infection and to use socks to provide a barrier.

Conclusion

The nursing staff and the massage therapists were able to work collaboratively. The patients' wounds healed and the patient successfully transitioned from short-stretch compression wrapping to custom compression garments. The nursing staff assumed the responsibility of donning, removing and washing the compression garments daily. CDT was reduced to weekly treatments and currently once a month. Successful management of these long-standing wounds has significantly improved the quality of life (QOL) of this patient. **LP**

A comprehensive set of references can be found at: www.lymphedemapathways.ca