

# Lymphoedema Management.

## Involving the patient in treatment choice and implementation of care.

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### Introduction

Lymphoedema is a non-pitting persistent swelling caused by an incompetent or damaged lymphatic drainage system failing to adequately transport excess water, proteins and waste products away from the affected area. This accumulation of waste products in the interstitial tissues leads to a chronic inflammatory response which causes skin and tissue changes as well as progressive swelling which distorts the shape of the area affected (Foldi M, Foldi E, Kubik S 2003). Lymphoedema can have profound psycho-social and emotional consequences (Woods M 1995) as well as the physical effects of reduced function and mobility, heaviness and pain. There is also an increased risk of recurrent infection. Failure of the lymphatic system to develop normally in utero or after birth is classed as Primary Lymphoedema.

Lymphoedema caused by damage such as trauma, surgery, burns, radiotherapy, infection is termed Secondary Lymphoedema (Keeley V. 2000). Breast Cancer treatment is recognised as the most common cause of Secondary Lymphoedema of the arm in developed countries. The risk of developing lymphoedema is increased when chest wall radiotherapy is used in addition to surgery and axillary node sampling/clearance.(Mortimer et al 1996)

The purpose of this case study is to demonstrate that appropriate treatment of lymphoedema and providing the patient with information and training in a range of skills to manage their own lymphoedema can reduce the impact of lymphoedema on their lives and allow them to fulfil goals.

### Referral:

64-year old woman was with moderate to severe Secondary Lymphoedema of the left arm and hand following mastectomy and axillary node clearance and chemotherapy (no radiotherapy) 2 years previously. Referred by Lymphoedema Keyworker/ Breast Care Nurse at the Breast Care Unit.

The self-management regime the patient had been given of daily skin care, exercise, simple lymph drainage and wearing compression arm sleeves a full glove with was failing to control the increasing arm and hand volume. Investigations showed no evidence of disease recurrence or vascular change.

### Lymphoedema history and patient's concerns:

18 months previously, 6 months after surgery, as Chemotherapy was finishing, had first noticed that her arm was swelling because she couldn't get her rings on the left hand. Swelling had got progressively worse since then.

Left arm and hand was heavy, uncomfortable/ painful and felt stiff and difficult to use.

The patient could not tolerate her compression sleeve since it caused constriction at wrist which was painful and increased hand swelling.

Very anxious that self-management was not controlling swelling and that increasing volume would further reduce function.

Distressed by appearance of arm and particularly the hand.

Concerned that difficulty in using her arm would reduce her ability to live independently. As she had been recently widowed this was adding to her distress.

Not being able to wear her wedding ring because of finger swelling was also a very poignant loss for her in view of her recent bereavement.

She also normally visited family in America once a year and feared that the lymphoedema would prevent her flying.

### On examination: Right hand dominant.

#### Left arm and adjacent trunk:

- Marked swelling of the fingers and palm
- Dome shaped swelling on the back of the hand firm and non-pitting
- Deeply indented skin fold at wrist
- Soft non-pitting swelling of whole arm, forearm > upper arm
- Swelling on left upper trunk below the axilla and a large swollen flap at the posterior end of the mastectomy scar.
- Dermatitis palm of left hand. No history of cellulitis but had had "septic spots" on arm.
- Difficulty in raising a fold of skin on the fingers, back of hand or forearm. Skin folds raised on upper arm and adjacent quadrant of trunk significantly increased.(Stemmer's sign)
- Volume measurements showed a 33% overall increase in the size of the left arm, but a 38% difference in forearm size and 26% difference in upper arm size compared to the right arm
- Score on Edinburgh Post Natal Depression Scale did not indicate clinical depression

### Relevant medical history:

- Chronic non-pitting swelling of left lower leg with dry thickened skin which had been a problem since she was in her early 20s. Worse at times but never reducing to normal. Always had a tendency to hand swelling but normally reversible. Never diagnosed but age of onset, signs and symptoms and family history would indicate that she has Primary Lymphoedema and possibly a more generalised lymphatic incompetence affecting the left upper quadrant as well as the left lower.
- Type 2 diabetes controlled by Metformin – this has implications for treatment because of peripheral vascular changes.
- Hypertension controlled by medication – high diastolic blood pressure can reduce central drainage from the lymphatic system back into the venous system.
- High Body Mass Index – Has been shown to predispose to developing lymphoedema. (Soran A et al 2006)

### Patient's goals in order of priority:

1. To be able to wear a wedding ring again.
2. To reduce stiffness and pain in her left hand.
3. To reduce size of arm.
4. To be able to fly to America without exacerbating the lymphoedema.

### Management plan:

The possible treatment options (outlined below) and factors that might affect the outcomes of the treatment were discussed with the patient. She was very keen to comply with treatment offered and to do anything necessary to optimise the effect of the treatment.

- The patient fulfilled criteria for a course of Intensive Therapy (Moffatt, Morgan & Doherty 2005) consisting of Manual Lymphatic Drainage (MLD) and multilayer short stretch bandaging to reduce limb volume, softening fibrotic tissue promoting local lymph drainage (Foldi, Junger & Partsch 2005). Following this a custom-made flat-knit arm sleeve would be fitted to prevent rebound swelling (Partsch H, Junger M. 2006) and to enhance the muscle pump effect in increasing the rate of lymph transport.
- The 6 week delay before Intensive Treatment could start would be used to teach her Kinesio taping techniques (Kase K, Wallis J, Kase T. 2003) to reduce pain and improve the drainage from her hand. Kinesiotape is a tape which mimics skin in thickness and stretch and because of the way the adhesive is applied when applied to stretched skin raises the cutis. This is thought to allow the lymphatic capillaries to fill better and reduces pressure on pain receptors.
- The patient would continue with daily skin care routine but was finding Simple Self Massage difficult to carry out. The Adelaide Clinic Trunk Massage and Exercise Routine (TMER) was suggested as an easier alternative. A Tai Chi breathing exercise that had been shown to reduce lymphoedema symptoms of discomfort (Neill J, Belan I, Piller N.) was also introduced in to her daily routine.
- The importance of exercise and using the left arm was emphasised and strategies discussed. (Soran A et al 2006)
- Should the compression sleeve fail to adequately control the lymphoedema after Intensive treatment then I would teach her to apply a support bandage at night.
- Referrals made to GP for treatment of the dermatitis on her left hand which was an infection risk and to her breast surgeon for excision of the flap at the end of her scar which caused pressure and discomfort under her arm. The patient was advised to persist with her weight reducing regime.



### Follow up and outcomes pre intensive treatment:

After 1 week of using Kinesiotape on her hand her pain score was reduced from 5 to 0 and the swelling was improved and less tense, improving the function in her hand. But the symptoms returned when not taped.

She was carrying out the TMER with no problems and the Tai Chi breathing exercise gave symptomatic relief.

Posterior Upper arm burning pain was still a problem so Kinesiotaping from the posterior axilla to the lower thoracic spine was demonstrated to a family member who continued to do this for her with good effect.

The dermatitis cleared with Betnovate and Dipbase from her GP, using Aqueous cream for general moisturising.



### Two-week intensive treatment with outcomes:

6 Weeks after initial assessment commenced the 2 week course of daily MLD and Multi-layer short stretch bandaging. Improved self management had resulted in her arm feeling less heavy and uncomfortable and had increased her use of the arm.

35 minute MLD massage was followed by bandaging consisting of; a first layer of tubular terry stockinette, a padding layer of ribbed foam and undercast wool padding. The fingers were bandaged and a double layer of Actico® short stretch bandage applied MCP joints to axilla. Extra care was taken with the padding in view of her Diabetes and initially the compression was modified, but bandaging was very well tolerated throughout. The hand swelling was slow to reduce but reintroduction of the Kinesiotape improved the response and posterior trunk taping was used throughout.

The importance of arm exercise and normal movement while bandaged was emphasised and the lighter, cohesive properties of the Actico® bandages made this easier.

The hand and fingers had reduced very well and the overall shape and texture of the arm was much better with no skin fold at the wrist.

An Elvarex flat knit all in one sleeve was supplied and very well tolerated. The patient was very anxious not to have to wear a full finger glove and I did not want to restrict her use of the hand. A light Microfine glove was supplied to be worn under the full sleeve in the event of finger swelling.

Vol. Difference L arm > R	Before Treatment	Following Intensive Therapy
<b>Overall vol. difference</b>	<b>33%</b>	<b>15%</b>
<b>Fore arm vol. difference</b>	<b>38%</b>	<b>18.5%</b>
<b>Upper arm vol. difference</b>	<b>26%</b>	<b>12.5%</b>

### Post Intensive Treatment follow up:

2 weeks after the end of Intensive Therapy there was some rebound swelling of the hand and wrist. Modified multi-layer short stretch bandaging to be applied at night was taught still using Actico® cohesive bandages which stay in place when changing grip making self bandaging easier and the tension is even as it comes off the roll when kept close to the arm. It took 1 week for her to feel competent in carrying out the self bandaging and continuing with this as required was successful in maintaining the reduced volume.

Compression hosiery, skin care, exercise and massage successfully controlled the Primary Lymphoedema of the left leg.

### Conclusion

Quality of life was greatly improved by treatment of both the left arm Secondary Lymphoedema and left leg Primary Lymphoedema. Body image and function improved and two months later she was able to spend six weeks in America with her family. She has also had the flap removed from the scar further increasing her comfort. After ten months of a continued self management regime of skin care, TMER, exercise, hosiery and self bandaging when required, her lymphoedema is maintaining well and she feels confident enough to start wearing a wedding ring again.

This complex case of Secondary arm lymphoedema responded well to the use of a range of treatment modalities because the patient was well motivated and happy to learn new skills to control the lymphoedema.

### References:

- Foldi E, Junger M, Partsch H. The Science of Lymphoedema Bandaging EWMA Focus Document: Lymphoedema Bandaging in Practice. London: MEP Ltd. 2005: 5-9
- Foldi M, Foldi E, Kubik S (eds). Textbook of Lymphology. München, Urban and Fischer, 2003
- International Journal of Palliative Nursing 1995 vol. 1, no. 1, 17-20.
- Kase K, Wallis J, Kase T. Clinical Therapeutic Applications of the Kinesio Taping Method: Universal Printing & Publishing Inc. Albuquerque New Mexico, 2003.
- Keeley V. 2000 Classification of lymphoedemas in Twycross R, Jenns K, Todd J (eds) Lymphoedema Radcliffe Press UK
- Moffatt CJ, Morgan P, Doherty D. Lymphoedema Framework: A Consensus on Lymphoedema Bandaging in: EWMA Focus Document: Lymphoedema Bandaging in Practice. London: MEP Ltd. 2005: 5-9
- Mortimer PA, Bates D, Brassington HD, Stanton A, Strachan DP, Levick JR. The prevalence of arm oedema following treatment for breast cancer. Quarterly Journal of Medicine 89, 377-380
- Neill J, Belan I, Piller N. Effectiveness of Tai Chi Exercises for lymphoedema after treatment for breast cancer- a pilot study
- Partsch H, Junger M. Evidence for the Use of Compression Hosiery in Lymphoedema in: Lymphoedema Framework. Template for Practice: Compression Hosiery in Lymphoedema. London: MEP Ltd 2006: 5-9
- Soran A, D'Angelo G, Begovic M, Ardic F, Harlak A, Samuel Wierand H, Hogel VG, Johnson RR. Breast cancer related lymphoedema- what are the significant predictors and how they affect the severity of lymphoedema. Breast Journal 2006 Nov-Dec. 12(6): 536-43
- Woods M. Sociological Factors and Psychosocial Implications of Lymphoedema: