

# The hybrid approach to treating severe lower-extremity lymphedema

Yuko Takanishi<sup>1)</sup>, Yoshihiro Ogawa<sup>1)</sup>, Yuichi Hamada<sup>2)</sup>, Robert Harris<sup>3)</sup>

1)Limbs Tokushima Clinic,Japan;

2)Japanese Red Cross Fukuoka Hospital, Japan;

3)Dr.Vodder School-International, Canada

# Introduction

- Perhaps some of the most challenging cases are those where a patient responds well to treatment but then sees the problem return again and again.
- This case study illustrates how using different approaches provided a longer-term solution for a patient. A combination of traditional Combined Decongestive Therapy, Self-care and Surgery were used to provide a successful outcome.

# Patient Information

- Age : 62 years old , Female
- Diagnosis : **Secondary Left Lower Limb Lymphedema**

- **medical history :**

At the age of 46 **Ovarian Cancer Surgery**

Included a total hysterectomy, bilateral salpingo-oophorectomy and pelvic lymphadenectomy.

Post-Operative adjuvant therapy : Chemotherapy

- At the age of 47, an Edema appeared and continued growing gradually on the left lower limb.
- At the age of 52, CDT was started.

2 or 3 times/week continuing for 1year.

( At an another hospital near her home)

Elastic Garments were being used, but the Edema got worse.

She was doing a MLLB by herself, but deformation of the leg was getting severe, and it became difficult for her to care for herself.

# The first time Reduction Phase Treatment (by CDT)

2012,11,20~12,19

2012/  
11/20



2012/  
12/19



	Right(cm)	Left(cm)
Thigh(G)	59.4	76.0
Thigh(F)	51.0	78.2
Patellar (upper border)	40.6	76.5
Knee joint(E)	35.0	73.5
Lower leg(C)	30.8	57.0
Ankle joint(B)	20.0	30.8
Foot	22.2	22.6

	Right(cm)	Left(cm)
Thigh(G)	56.5	65.2
Thigh(F)	48.5	58.0
Patellar (upper border)	40.5	48.1
Knee joint(E)	35.0	46.8
Lower leg(C)	29.7	39.8
Ankle joint(B)	19.8	25.0
Foot	21.7	21.8

**I began to treat her at our hospital from 6 years ago.**

# Reduction Phase Treatment

- I did Reduction Phase Treatment for her about 1 month every 6 months by CDT.
- Frequency : I did CDT 6 days a week for 1hour a day.

## **Contents of the Treatment :**

- Skin Care : The patient applied a moisturizing agent to the leg to stop dryness by herself.
- MLD : The left thigh had the most severe symptoms, so I treated this part intensively. I drained to the left axillary lymph node.
  - 1<sup>st</sup> week : Mainly Upper body
  - 2<sup>nd</sup> ~ 3<sup>rd</sup> week : Mainly Thigh (Left)
  - 4<sup>th</sup> week : Whole Lower limb (Left)

- Compression Therapy : Multi-Layer Lymphedema Bandaging using short stretch bandages.

Skin inside the thigh was hanging, so I placed to a cushion made with a small sponge.

- Exercise Therapy : She exercised using a treadmill machine and a joint motion machine for 1 hour a day.

The symptom inside the thigh was temporarily improved greatly by CDT, but it was difficult to maintain the improvement at home after leaving the hospital.

# We Changed the material used for MLLB

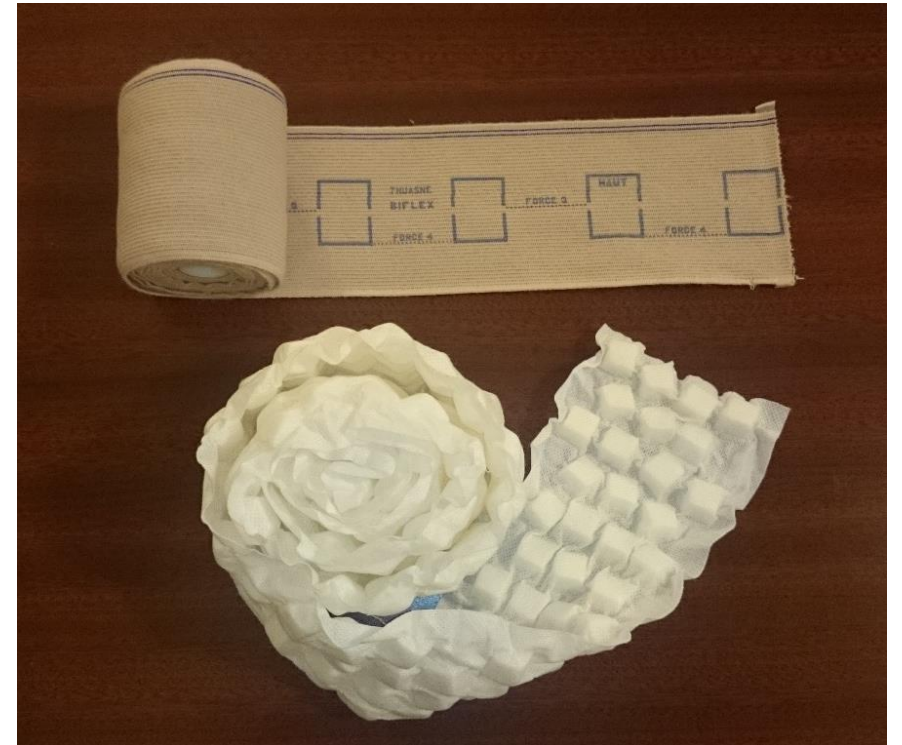
3 years ago I changed a part of the material used for MLLB.

- Some of the short stretch bandages were changed to the middle stretch bandages. (BIFLEX®)

10 short-stretch →

3 middle-stretch + 6 short-stretch

- I used a special sponge(MOVIDERME®),  
This sponge has a continuous micro massage effect to the skin and improve the fibrosis tissue under the skin.





- The volume of the entire left, lower limb decreased by their use, and the hardness of the tissue under the skin improved.
- Also, these therapeutic effects appeared earlier than during the previous treatments.
- It was very easy to use these materials and they were also useful for self-care done by herself.
- However, an edema inside the thigh tended to form making it difficult to maintain the condition and difficult to use Elastic Garments.
- That was because the skin had sagged very much.

# Before plastic surgery 2016,5,6~6,13 (Changed the material used for MLLB)

2016/  
5/6



2016/  
6/13



	Right(cm)	Left(cm)
Thigh(G)	61.0	74.0
Thigh(F)	48.2	69.0
Patellar (upper border)	41.7	64.0
Knee joint(E)	37.5	60.0
Lower leg(C)	32.4	39.3
Ankle joint(B)	20.4	24.7
Foot	22.4	22.2

	Right(cm)	Left(cm)
Thigh(G)	60.0	67.8
Thigh(F)	47.0	57.0
Patellar (upper border)	40.0	49.0
Knee joint(E)	36.0	45.0
Lower leg(C)	32.0	36.2
Ankle joint(B)	20.0	24.8
Foot	22.0	22.0

This stretching of the skin caused this area to swell very much compared with other parts of the leg.

# Plastic Surgery

- 2 years ago sagging skin of the thigh was removed in Plastic Surgery.
- And lymphaticovenular anastomosis(LVA) was done at 5 points of the lower leg. (reduce flow to the inside of the thigh)
- In the preoperative examination, there were many dermal backflows in this part. (By Fluorescence Lymphography using indocyanine green )
- The imaging also showed that the lymphatic vessels had been obliterated in the shallow layers of the skin.
- A large Expansion the lymphatic vessels was observed in the deeper layers of the skin at doing the surgery.
- However only small amount of fibrosis was observed under the skin when considering the size of the leg.

# After Plastic Surgery 2017,2,14



	Right(cm)	Left(cm)
Thigh(G)	59.4	67.0
Thigh(F)	48.6	59.0
Patellar (upper border)	41.7	45.0
Knee joint(E)	36.0	43.0
Lower leg(C)	30.0	36.5
Ankle joint(B)	20.4	24.5
Foot	22.2	22.0

Now, she can wear Elastic Garments and can keep better condition than before.

# Discussion and Conclusion

- The treatment regimen including the Mobiderm<sup>®</sup> and BIFLEX<sup>®</sup> bandage, led to an additional reduction in limb volume.
- Modifications can be made to CDT, such as changing the type of bandaging material used, to maximise the effect of treatment, as were made in this case.
- Once the patient's limb size has reduced sufficiently, he or she can undergo plastic surgery in order to remove excess skin flaps, as occurred in this case study.

- The goal of the surgery was to reduce the skin flaps to enable easier donning of the garment and self-care, rather than volume reduction. This goal has almost achieved.
- LVA surgery appears to have enhanced the effects achieved during CDT at this point in time.
- It will be interesting to follow this patient's management of her lymphoedema to see how successful the LVA procedure is in maintaining the reductions achieved in the long term.



Thank you for your attention.



Traditional SUMMER FESTIVAL **“AWA ODORI”**  
In TOKUSHIMA, JAPAN