

# Abstract highlights BLS 2022 and a taster of 2023

October 2022 | Staffordshire, UK

## **A case report of lower leg amputation: The unfortunate sequelae of lymphoedema compression garment complication**

**Katie R Hilder**

*Plastic Surgery Registrar, Ninewells Hospital, Dundee Scotland*

The COVID-19 pandemic caused significant issues relating to social distancing and mandatory isolation of patients. The literature is increasingly demonstrating the harmful psychiatric effects that COVID-19 induced social isolation has had on the wider population, and in particular those suffering from mental illness.

**Case description:** We present a case of social-isolation propagated severe neglect in a patient with underlying mental health issues, resulting in a tourniquet effect from rolled down compression garments, which led to bilateral foot ischaemia, left above knee amputation and subsequent death in a previously independent adult.

**Discussion:** This case highlights the negative effect of COVID-19 on vulnerable patients, particularly those who live alone, and suggests that patients' mental and social state should be considered (and monitored) when prescribing compression garments. To our knowledge there are no previous reports of this nature, nor guidance on the use of compression therapy in patients with unstable mental health. Consent was obtained for presentation.

## **A case study on using hand therapy experience to optimise treatment modalities in breast cancer-related lymphoedema**

**Rhiannon Lewis**

*Australasian physiotherapist*

An occupational therapist (OT) working in a lymphoedema service at a cancer hospital observed a number of patients with breast lymphoedema were unable to look at or touch their breasts/chest wall after surgery. This restricted the treatment that

could be used for lymphoedema management. Utilising previous experience in hand therapy, the OT identified a programme, including desensitisation and graded motor imagery, which could help this.

A literature search demonstrated a lack of research in this area for breast surgery however the OT was able to apply the evidence-base from upper limb trauma and rehabilitation.

Using a case study, the experience of one patient with breast lymphoedema was reviewed (consent obtained).

The 49-year-old woman underwent treatment for left breast cancer involving mastectomy and breast reconstruction, lymph node dissection and chemotherapy. Severe lymphoedema developed in the left breast after treatment. The patient was unable to engage with lymphoedema management as she was fully avoidant of her breast.

Through goal-setting, a desensitisation programme was completed over 2 months. This included different types of touch and utilised graded exposure methods. The patient subsequently was able to complete a course of manual lymphatic drainage and confidently continues a self-management programme.

This poster highlights how research and skills used in hand therapy could be transferred to the management of breast cancer related lymphoedema. By increasing therapists' knowledge and skills in this area, it could improve patient outcomes. More evidence is required to explore this further.

## **Management of recurrent cellulitis – much more than antibiotics! A case report**

**Jill R Hamilton**

*Physiotherapist, OHPCC, Northern Ireland.*

A 36-year-old patient with well-controlled lower limb lymphoedema and a history of Hodgkin's lymphoma was repeatedly hospitalised for recurrent cellulitis in 2014, 2019 and 2020. Despite the eradication of the acute infection, and having preventative measures taken to reduce the risk of further cellulitis in 2014, the patient had seven hospital admissions due to cellulitis in 2019/20. The last admission in early 2021 led to an 8-month stay in hospital with significant multidisciplinary team (MDT) involvement. With

inadequate dietary intake pre-admission in both 2014 and 2019, and a BMI of 16, it was suspected that malnourishment had lowered the patient's immunity, giving rise to relapsing and recurrent cellulitis in the local tissue area.

Management goals involved reducing risk factors by:

- Improving nutrition through input from both dietetics and clinical psychology.
- Increasing exercise tolerance through physiotherapy.
- Promoting functional independence through both occupational therapy and physiotherapy.
- Ensuring appropriate medical management and timely intervention.
- Optimising lymphoedema management, with support from the lymphoedema therapists.

**Conclusion:** This case provided an opportunity to educate healthcare professionals on the impact of cellulitis in the lymphoedema community. It highlighted the need for an MDT approach in patient management. It emphasised the numerous risk factors associated with cellulitis and the need for appropriate, timely medical management to reduce the impact of this condition and the cost associated with hospital stays.

## **Angiosarcoma in lymphoedema: a rare complication of chronic oedema**

**Laura Adams**

*ST4 Dermatology, University Hospitals of Derby and Burton NHS Foundation Trust*

**Case study:** A 69-year-old woman was referred to the lymphoedema clinic with an 18-year history of untreated bilateral lower leg oedema. The left leg had significantly changed in colour and contour around five months earlier. This was initially attributed to a domestic injury but failed to resolve. Written consent was obtained to present her case.

**Case description:** On examination, oedema in the left leg extended into the thigh. The skin to the lower leg was taut and fibrosed with bruise to brown coloured patches and macules in the affected area, and darker papules on the medial side of the leg. The clinical appearance was concerning enough for a referral to the local sarcoma MDT for evaluation.

Punch biopsies were undertaken, demonstrating multifocal angiosarcoma.

**Reason for report:** Diagnosis of this condition is required to ensure a rapid referral to the sarcoma team. The average survival is 5-8 months without treatment and 2.5 years with treatment. Despite its rarity, it is important that clinicians are aware of this complication of lymphoedema, as early diagnosis is crucial to improve prognosis.

**Discussion:** Stewart-Treves Syndrome is described as angiosarcoma in the setting of long-standing lymphoedema and was first reported in patients post radical mastectomy, with an estimated prevalence of 0.07 to 0.45%. More recently it has been acknowledged that this condition can present in long-standing lymphoedema of the lower extremities. Incidence in lymphoedema is unknown and pathogenesis poorly understood. It has been suggested that the local immunodeficiency present in lymphoedema predisposes to oncogenesis.

## Can a future trial of phase-1 decongestive lymphoedema treatment for women newly presenting with breast cancer-related lymphoedema be undertaken in the UK? Findings from a feasibility study

Eunice Jeffs

*Advanced Nurse Practitioner, EB Research, St Thomas' Hospital, London, UK*

**Introduction:** Women presenting with arm breast cancer-related lymphoedema (BCRL) in the UK are offered self-treatment with hosiery whereas expert guidance recommends offering phase-1 decongestive lymphoedema treatment (DLT) (NICE, 2009; ISL, 2020).

**Aim:** To explore feasibility and acceptability of DLT for women with <12 months arm BCRL duration.

**Method:** Following a systematic review, three studies were approved (IRAS 161289):

1. Five focus group discussions exploring views of 13 women and 13 practitioners on future study of treatment effectiveness for women with early BCRL.
2. Delphi consensus event (18 stakeholders) to address areas of uncertainty from systematic review and focus group findings to inform development of feasibility study.
3. Observational feasibility study with 45 women having BCRL of any duration and 11 practitioners.

**Results:** These studies support need for trial of the most effective treatment for women newly presenting with arm BCRL but practitioners were

ambivalent about appropriateness of phase-1 DLT as study intervention. Practitioners were uncertain what outcomes to expect from treatment and reported lack of service capacity to deliver the intervention. Practitioners and women reported challenges with correct and timely provision of hosiery. Most women (study 3) had minimal swelling; 24% of those screened had history of previous BCRL treatment.

**Conclusions:** Key findings of relevance to practitioners and researchers include:

1. Lack of agreed markers for successful treatment and impact of practitioner uncertainty re expected treatment outcomes.
2. Need to address reasons for re-referral for BCRL treatment.
3. Problems of hosiery provision.
4. Reasons why proposed study of DLT for women with early BCRL is not feasible.

## A report into the assistance of ICG imaging in ascertaining a diagnosis of lymphatic distichiasis (FOXC2)

Jane Wigg

*Lymphoedema specialist nurse and company director*

**Introduction:** This case description will discuss the case of an assessment of a patient who attended clinic for evaluation with ICG imaging prior to surgical intervention. It will demonstrate the importance of accurate and thorough assessment and the benefit of ICG imaging in treatment decisions.

Consent was obtained for use of case study and images. Patient X attended the ICG imaging clinic for assessment of their lymphatic system prior to surgical intervention of lymph node transfer. Patient X gave a history of having swelling in his late teenage years and although a thorough assessment had taken place by another lymphoedema service, they felt they required a deeper understanding of the causes of the lymphatic and venous failure. On assessment, it was apparent that the condition was present from childhood.

During ICG imaging, assessment of valvular competence taken as negative. This led to the diagnosis of FOXC2 mutation. Further questioning led to the presence of distichiasis and patient X 'always pulling their eyelashes out' since childhood, not knowing this was relevant. As a definite diagnosis could be made of FOXC2, the valuable advice was that lymph node transfer surgery, would not be a suitable option and would not improve the valvular disfunction.

This case study demonstrates the importance of ICG imaging, prior to surgical intervention, to allow for better outcomes and more effective care, realising both the financial and psychological impact of lymphoedema.

This rare case will be presented in more detail with the assistance of ICG imaging videos, images and surgical details.

## Sharing practice to collect a minimum dataset for the UK and Ireland/Eire

Yolande Borthwick

*University Lecturer University of Glasgow and Lymphoedema Service Lead Forth Valley Scotland*

**Background:** The National Lymphoedema Partnership MDS form (BLS, 2018) has been used by services to gain an understanding of local demographics and improve service provision.

**Aim:** To compare how the five groups collected a MDS and discuss how findings were used to improve knowledge of lymphoedema demographics to enhance local practice and obtain additional funding for their services.

**Description:** Five groups from England, Scotland, Wales, Northern Ireland and Eire have developed local MDS forms and databases with potential to export and share data through excel. They have developed guidance to standardise data entry and facilitate analysis of datasets. Some groups collected MDS on only new patients, some on all patients seen, others collected MDS for defined periods of time. To date, nearly 20,000 MDS collected in databases are available for analysis, with additional MDS in paper format.

The groups have shared MDS tools and have plans to:

1. Explore similarities and differences between MDS tools.
2. Identify ways to share data and combine findings.
3. Explore option for creating a repository to collect MDS from multiple groups.

**Evaluation:** Collecting a MDS has enhanced local practice and shared understanding of lymphoedema across the UK and Eire. Some services have gained funding for additional staff and service expansion. Sharing of information and analysis of combined MDS will further improve our understanding of lymphoedema service demographics and aid service development in the UK and Eire.

The discussion will focus on lessons learned from the process of collecting and sharing a MDS.

## MRI is essential prior to LVA or liposuction in patients with primary lymphoedema

D Furniss

*Professor of Plastic and Reconstructive Surgery, University of Oxford, Botnar Research Centre, NDORMS, Oxford, UK*

**Introduction:** Borri et al developed MRI sequences to allow quantification of fluid and fat in lymphoedema,

but this has not been widely integrated into clinical care pathways. Subclassification of fluid distribution patterns has not been previously described.

**Methods:** We introduced MRI into our surgical assessment pathway in June 2021, and here retrospectively review the results of 20 MRI scans in patients with primary lymphoedema in 12 months.

**Results:** Of 20 patients, 19 had primary lymphoedema of the legs, and one of the arm. In 5/19 patients, we recommended delaying liposuction surgery to optimise compression; in 8/19 patients, the surgical plan for LVA or liposuction was confirmed; and in 2/19 patients the expected results of LVA were modified. We observed a “honeycomb” pattern in two patients. One patient subsequently underwent liposuction, and the operation was impossible due to extensive subcutaneous scar tissue.

**Conclusion:** MRI sequences that determine the percentage and distribution of fluid versus fat are a useful adjunct to surgical assessment of primary lymphoedema. Presence of the honeycomb pattern should lead to caution in offering surgery for primary lymphoedema, and therefore is essential before offering this surgery to patients with primary lymphoedema.

### Comparison of post-operative analgesia requirements between lipoedema and lymphoedema patients undergoing lower limb liposuction

**Katie R Hilder**

*Plastic Surgery Registrar*

*Ninewells Hospital, Dundee Scotland*

**Introduction:** Lymphoedema and lipoedema both result in abnormal swelling of the limbs. Pain is a distinguishing symptom of lipoedema. Liposuction can be used in each condition to enhance quality of life.

**Aim:** To compare analgesia requirements in lipoedema versus lymphoedema patients undergoing lower limb liposuction using the Brorson technique.

**Method:** A cohort of consecutive lymphoedema patients undergoing lower limb liposuction between 2015 and 2016 were compared to a similar cohort of lipoedema patients undergoing the same procedure within the same timeframe. All patients routinely received intra-operative intravenous antibiotics, dexamethasone, and tumescent Chirocaine-based analgesia with adrenaline. Analgesia requirements throughout the patients' inpatient stay were documented and compared.

**Results:** A total of 54 lower limbs in 30 patients were included in this study (17 lipoedema patients; 13 lymphoedema patients). The mean age was 48

years (range 26–61 years). The average volume of fat removed from lipoedema patients was 5.62l (range 2.6–9.0 l); compared to 3.85 l (range 0.7–7.6 l) in the lymphoedema group. Almost half (45%) of the lymphoedema patients required no immediate post-operative analgesia, while 88.2% of lipoedema patients required analgesia predominantly in the form of intravenous opioids. A wider variety of analgesics was necessary in the lipoedema group compared to the lymphoedema group, with 35.2% of lipoedema patients prescribed tramadol and gabapentin on discharge.

**Conclusion:** Lipoedema is a painful condition resulting from inflammation. Further inflammation is caused by surgical intervention. Analgesia requirements in lipoedema patients far exceeded those of lymphoedema patients undergoing the same operation.

### Impact of climatic variations on lymphoedema – the patient perspective

**Susan Witt**

*PhD Candidate, Flinders University*

**Background:** Chronic oedema is a significant problem worldwide and results in substantial burden to both health services and an individuals' quality of life. Higher temperatures and increased humidity have been reported to cause additional discomfort for people with chronic oedema, leading to reduced compliance with compression garment use, increased swelling and poorly managed symptoms. Rising temperature due to climate change is well documented and it is anticipated this will present significant challenges for the ongoing management of chronic oedema.

**Aims:** To understand how climate and climatic variations impact an individual's experience of chronic oedema.

**Methods:** A recently completed systematic review identified significant gaps in research from both a qualitative and a quantitative perspective. This phase of our study explored the patient experience through a series of focus groups completed in Germany and in Australia. Results have been thematically analysed.

**Results:** Individuals with chronic oedema experience increased challenges in humid and warmer weather. This is more evident with a sudden change such as a holiday. Multiple other management modalities need to be used such as exercise (yoga, pilates, swimming), dietary considerations, flat knit compression garments, water therapy and taping in order to maintain their swelling.

**Conclusions:** The climate has a direct impact on an individual's experience of living with lymphoedema. Warmer temperatures and increased humidity

provide the greatest challenges. Alternative treatment modalities are used to manage appropriately.

### Long-term outcomes following liposuction for arm lymphoedema

**Alex Munnoch**

*Surgeon, Dundee, Scotland*

**Aim:** To analyse the long-term outcomes following liposuction in the upper limb for lymphoedema and hypertrophied fat.

**Background:** Arm lymphoedema may occur following oncological surgery to the axilla amongst other aetiologies. Excessive lymphatic fluid can stimulate adipose stem cells resulting in fat hypertrophy. Conservative therapies can effectively move the fluid, but have no effect on the residual fat, resulting in a persistent excess volume in the limb.

**Methods:** Data was collected prospectively of all patients undergoing liposuction for upper limb lymphoedema since 2005. Limb volumes were recorded pre-operatively and at each postoperative visit. This data has been analysed and compared to outcomes published elsewhere. Liposuction is performed in the manner described by Brorson, and all patients receive postoperative compression garments.

**Results:** A total of 17 patients were followed up for six years. 16 patients were female, the mean age at liposuction was 57 years (range 42–70), mean duration from initial surgery to onset of lymphoedema was 20 months and the mean duration of lymphoedema was 8 years. The mean volume excess was 1,380 ml (586–2,854 ml). At one year, mean volume excess was 60 ml (–479 to –619) with mean volume reduction of 100% (60). At 3 years, mean volume reduction was 115% (–110 ml) and 6 years 110% (–52 ml). These results are comparable with literature of a similar follow-up period.

**Conclusion:** Liposuction and continuous postoperative compression is an effective treatment for arm lymphoedema. It requires commitment from patients to be successful.

### Collaborative working and a multi-therapeutic approach for treating lymphoedema post head and neck cancer: A service development evaluation

**Emma Hallam**

*Macmillan Consultant Radiographer in Post Treatment & Late Effects, Nottingham Radiotherapy Centre, Nottingham University Hospitals NHS Trust, Nottingham, UK*

**Background:** The head and neck cancer (HNC)

population often have unmet needs as a consequence of their treatment, which can lead to significant impairment and disability. Lymphoedema and radiation-induced fibrosis (RIF) are common side-effects that can negatively impact on a person's quality of life. With no definitive cure for RIF, early identification of lymphoedema and RIF, along with complex holistic symptom management, provides the greatest chance of success for rehabilitation following radiotherapy treatment and enhanced quality of life.

**Aim:** Provide a multi-therapeutic holistic treatment approach to reduce symptoms and improve quality of life.

Provide a one-stop shop with expertise covering all consequences of radiotherapy treatment including lymphoedema management to reduce unnecessary onward referrals. This reduces clinic appointments providing a benefit to the patient and cost savings to the trust.

Continue to work collaboratively with the lymphoedema team to continuously evaluate treatments and develop evidence based practice.

**Description:** Drawing on the expertise of the lymphoedema clinical nurse specialist, the Nottingham Late Effects Service has developed a collaborative and multidisciplinary approach to the early management of lymphoedema and RIF, including the use of photobiomodulation therapy alongside a home exercise programme, simple lymphatic drainage, skin care advice and psychological support.

**Evaluation:** This presentation provides an overview of the service and early outcomes observed within our patients; including observed changes in appearance, improved range of movement, reduced pain and decrease in psychological distress.

## BLS2023

2–3 October, Chester Racecourse, UK.

### Managing venous obstructive oedema in a cancer-related lymphoedema service – a case report

Marika Killilea

Royal Marsden NHS Foundation Trust, London, UK

An 81-year-old woman was referred urgently to the lymphoedema service with arm swelling shortly after a pacemaker insertion. We were unfamiliar with treating such rapid severe arm oedema, but used the principles of lymphoedema management and observed progression of the condition.

In April 2021, she had a pacemaker insertion and was readmitted in June with severe left arm swelling.

Doppler ultrasound showed left subclavian vein obstruction necessitating removal of the device. Her medical history included left mastectomy for breast cancer; excision and radiotherapy to melanoma on left shoulder; left wrist fracture; Raynaud's; and stable B-cell lymphoma. On presentation, the affected arm was 137% larger than the right, with pitting oedema throughout, soft on the dorsum of the hand and firmer proximally. Movement was limited by weight of the limb.

We initiated skin care, light compression with an A-G sleeve and SLD. She experienced cellulitis and lymphorrhoea and required various sleeves. By June 2023, the excess volume had reduced to 77% and there was a palpable softening of the proximal arm tissue.

Venous obstruction is a known consequence of pacemaker insertion, but this presentation of severe, persistent arm oedema appears unusual. Previous surgery and radiotherapy may have resulted in a compromised, but functioning, lymphatic system until the extra burden of venous congestion overwhelmed it. After 2 years there are signs of volume reduction and normalisation of the tissues, perhaps as collateral circulation develops. She gave consent for this case study.

### The importance of shared care – integrating lymphoedema and tissue viability services to improve patient outcomes for wound care

Julie Stanton and Pam Cooper

Pioneer wound healing and lymphoedema centres, Eastbourne, UK

Clinical knowledge about the lymphatic system is continuously expanding and we know that patients with unrecognised or improperly treated lymphoedema will progress through stages leading to integumentary changes and challenging wounds. Therefore, we need to start to develop integrated services, rather than operating in silos, in order to improve patients' assessment and access to the right care at the right time.

We need to question the belief that the majority of leg ulcers are predominantly venous, when in fact many patients with chronic, complex wounds have lymphoedema as a component, and begin assessing and treating lower limb disorders in different ways from the venous management approach.

The efficiency of lymphatic drainage is paramount to oedema management and wound healing. Therefore, interventions to help prevent damage to lymphatic capillaries, and techniques to facilitate lymphatic drainage and

lymphangiogenesis should be considered as part of wound management. This presentation on work undertaken within our own clinics and within other NHS trusts highlights the importance of the lymphatic system in the treatment of leg ulceration and the emergence of a new 'hybrid nurse', combining the specialisms of tissue viability and lymphoedema to improve patient outcomes, reduce waiting times, and improve efficiency within the NHS with the provision of a one-stop service.

The presentation showcases case studies undertaken within the clinic settings that show how lymphoedema techniques contribute to increased healing rates, improves motivation for nurses, and highlights the increase in the number of patients with wounds who have stage 2–3 lymphoedema.

### A case history of female cutaneous ano-genital granulomatosis

Andresa Pires, Kristiana Gordon and

Catherine Milroy

St George's Hospital, London, UK

**Introduction:** Ano-genital granulomatosis (AGG) is a rare inflammatory disorder. As many as 40% of patients in case studies had an association with gut Crohn's disease prior to presentation. The condition can occur at any age and either gender. Late diagnosis is frequent and delays medical treatment, leading to complications with lymphoedema, cellulitis, and a negative impact on quality of life.

**Case history:** A 36-year-old woman presented with a 4-year history of worsening genital swelling with cutaneous inflammation, but no signs of cellulitis. The skin was thickened, with fissures and lymphangiectasia. Skin biopsies confirmed the presence of non-caseating granulomas due to AGG. Investigation for gastrointestinal Crohn's disease was negative. She received infliximab and azathioprine for the AGG, but her disease remained active. She was treated with intralesional steroid injections to the lymphoedematous inflamed genital tissues with excellent results. Compression garments and MLD were also recommended to manage the lymphoedema in the long-term.

**Discussion:** AAG is an important differential diagnosis to consider for patients presenting with genital lymphoedema. It is thought to result from intralymphatic infiltration of granulomatous inflammatory cells as part of the spectrum of Crohn's disease. Early investigation and diagnosis can prevent deterioration and improve treatment outcomes. Use of intralesional steroids to manage this condition has recently been reported in the literature and should be considered as an additional management tool for these distressing and complex cases.