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Upper limb lymphoedema (ULL) is a well-documented consequence of breast cancer surgery and treatments, presenting as localised swelling of the arm, hand or breast (Jung et al, 2014; DiSipio et al, 2013).

Those undergoing extensive surgery or lymph node dissection for breast cancer are thought to be at risk of developing lymphoedema (Togawa et al, 2014), and there are a number of factors which can increase the risk of the onset of lymphoedema, including: age at diagnosis, type or extent of surgery, number of lymph nodes removed, chemotherapy and higher body mass index prior to diagnosis (Togawa et al, 2014; Jung et al, 2014).

Lymphoedema is a chronic, progressive condition known to worsen over time; many studies document the importance of early intervention in minimising long-term symptoms or prevention. Accumulation of lymph in the interstitium increases the risk of cellulitis and lymphangitis (Shih et al, 2009), emphasising the importance of managing the condition effectively as early as possible following onset.

Community nurses caring for those with ULL can offer some basic advice and guidance on management of the symptoms of the condition, including: good skin care for prevention of infection, maintaining good limb range of movement and the use of compression garments.

## Management of upper limb lymphoedema

A full holistic assessment should be carried out, including past medical and surgical history (cancer status, current medication, any known allergies, social circumstances, and any psychosocial issues), lymphoedema history and physical examination. Patients should be given the opportunity to express the impact of the swelling on their daily activities and also their quality of life using a lymphoedema-specific questionnaire. Patient-led goal setting will assist with achieving good outcomes and compliance with advice, followed by regular evaluation of treatment plans.

More specific information should be sought in relation to the type of surgery to the breast and axilla, the number of lymph nodes removed, any post-operative complications including seroma formation and wound or skin infection (Uzkeser, 2012).

Discussing with the patient whether there is any altered sensation in the limb, heaviness or pain is advisable, as these symptoms may be present as early signs in the absence of palpable or measureable differences.

Physical examination should consist of palpation of the subcutaneous tissues of the affected arm comparing with the unaffected side (and should include regional lymph node territories to exclude any lymphadenopathy), observing for the skin condition/texture, tissue pitting test to establish whether there is pitting or non-pitting oedema present, shape of the limb and hand, and should also include limb volume measurements for evaluation

## ABSTRACT

This article will detail the findings of 4 case studies following a product evaluation of a JOBST Bella Lite combined armsleeve for mild to moderate lymphoedema, while discussing the assessment and management of upper limb lymphoedema. Holistic assessment and consideration of psychosocial impact on the patient will be discussed briefly along with guidance on how to determine those 'at risk' of developing the condition.

## KEY WORDS

- ◆ lymphoedema ◆ quality of life ◆ upper limb lymphoedema
- ◆ management

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**Figure 1. Mild lymphoedema to the dorsum of the hand**



**Figure 2. Patient fitted with a class 2 JOBST Bella Lite combined armsleeve, in size small regular with a grip top**

purposes. Monitor the skin for signs of infection, such as heat, discolouration and pain, and take appropriate action immediately by initiating antibiotics as per British Lymphology Society guidelines ([www.thebls.com](http://www.thebls.com)).

Range of movement of the affected arm can be assessed in comparison the unaffected side, observing for problems with the shoulder, elbow or wrist and recommending either simple exercises or referring to a physiotherapist for advice and support.

## Treatment options

Conservative treatment options are routinely recommended in early stages of lymphoedema, along with advice regarding prevention of the condition. It is important to base advice around the patient's goal, while considering the most appropriate options for the desired outcomes. Information and advice should be delivered in a manner that is not threatening, but does indicate the potential for the condition to deteriorate should they choose not to follow it.

Skin care is an important element of lymphoedema care, and patients should be advised about how to maintain good skin integrity in order to reduce the risks of complications, such as cellulitis.

Maintaining a healthy diet and exercise is crucial to keeping weight in a healthy range, but it also reduces the risks of developing lymphoedema, as a greater body mass index (BMI) is a known risk factor (Togawa et al, 2014; Dominick et al, 2013).

Compression garments are advisable for those considered to be suffering mild to moderate lymphoedema in addition to advice for reduced wear for those with sub-clinical symptoms, such as altered sensation, heaviness or aching. There are a variety of compression garments available with varying favourable qualities; the initial choice may not always be the most suitable for the patient and reassurance should be given that alternatives are available should the first garment not be the most acceptable to the patient.

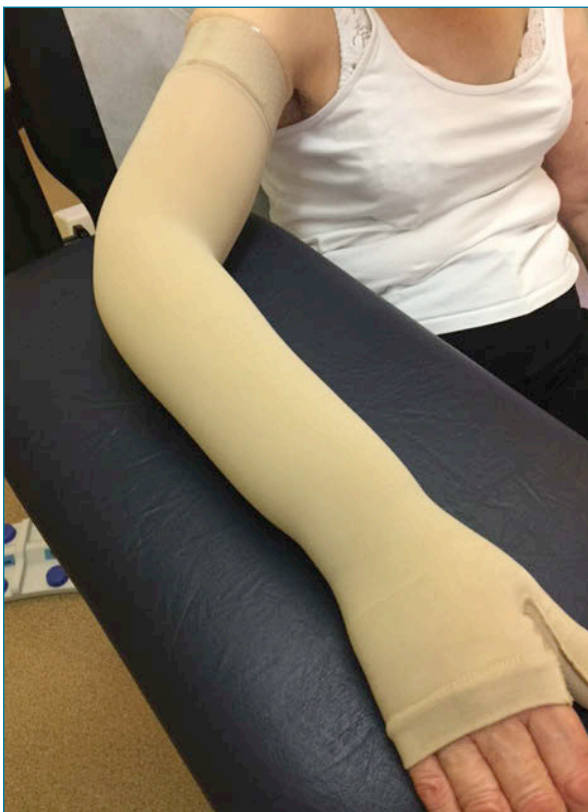
## Types of compression garments

There are many different upper limb garments available to patients; this can sometimes lead to confusion for general health care practitioners, as minimal experience of them may lead to difficulties with selecting the right garment. There are two types of fabric knit: flat-knit and circular-knit garments, which come in class 1, 2 or 3 for upper limb, separate sleeves, gauntlets or full fingered gloves, combined sleeves that incorporate the gauntlet with or with the thumb stall, with or without grip top and in ready-to-wear or custom-fit. This is before making a choice from several manufacturers, who all offer a slight variation on each. Considering the most suitable garment from the wide variety of options makes it clear why selecting the right one for the patient can be challenging even for the mildest cases of lymphoedema.

A separate hand piece and sleeve can often be more preferable to the patient due to the convenience of being able to simply remove the hand piece for hygiene purposes. However, this is not suitable for all types of arm lymphoedema and sometimes there can be a problem area at the wrist where the garments overlap if the patient does not apply them correctly. If this is consistently the case, then a combined sleeve can be selected to try and avoid this issue. If the arm and hand are a fairly good shape and the tissues are not too 'doughy', then a circular-knit garment can be selected. The JOBST<sup>®</sup> Bella<sup>™</sup> Lite combined armsleeve has been shown to have good results for patients in the following case studies.



**Figure 3. Right hand oedema with distal forearm swelling in November 2016**



**Figure 4. Patient fitted with a class 2 JOBST Bella Lite combined armsleeve size medium regular with grip top**

## KEY POINTS

- ◆ Recognising the signs and symptoms of lymphoedema following breast cancer surgery and treatments will enable swift access to appropriate treatments for patients.
- ◆ Having an awareness of the risk factors predisposing the patient to lymphoedema will assist in giving prevention advice.
- ◆ Assessing the impact on the patient's activities of living and quality of life, and setting patient goals, will assist in implementing timely and appropriate treatment, and in achieving concordance.
- ◆ Standard, ready-to-wear garments with a variety of options can offer an easy solution for health care professionals to select an appropriate garment for the patient.

## Case study 1

A 48-year-old female patient with a history of right-sided breast cancer, diagnosed in 2013, had a subsequent mastectomy and axillary node clearance with adjunctive chemoradiotherapy, and preceded to later develop mild lymphoedema on the affected side (*Figure 1*). The patient was experiencing a constant ache in the arm and axilla region, and was found to have mild lymphoedema to the dorsum of the hand on examination. At her initial visit, her limb volume measurements were obtained and she was found to have an overall excess limb volume of 5% (119ml), with a proximal excess of 3% and distal of 10%. She was fitted with a class 2 JOBST Bella Lite combined armsleeve, in size small regular with a grip top (*Figure 2*). She was advised to wear this during the daytime, removing at night.

At her 8-week follow-up, she reported the aching had completely resolved and her measurements showed a total excess volume of 0% overall with the distal excess reduced to 7%. The subsequent follow-up 5 weeks later reported that the aching remained resolved and her measurements showed a total excess volume of 2% overall, with the distal excess reduced to 1%, making the affected arm much more comparable with the unaffected side.

## Case study 2

A 70-year-old female patient with a history of right-sided breast cancer, diagnosed in February 2016, underwent a mastectomy and sentinel lymph node biopsy, which was negative. Chemotherapy was stopped early due to toxicity. The patient developed bilateral hand oedema during chemotherapy, which was thought to be secondary to the Taxol. The right hand oedema did not resolve after treatment was stopped, and in November 2016 distal forearm swelling occurred (*Figure 3*).

After assessment and examination at the St Margaret's Hospice lymphoedema clinic in December 2016, she was fitted with a class 2 JOBST Bella Lite combined armsleeve size medium regular with grip top (*Figure 4*). Her limb volume measurements at this stage were 7% overall excess, and the distal forearm excess volume was 26% (218ml).



**Figure 5. Patient assessment of left arm swelling in October 2016**

Follow-up was carried out 5 weeks later in January 2017, where her total excess volume was measuring 3% and her distal excess had reduced to 17% (143ml), having reduced by 87ml. In February 2017, her overall excess volume measured 4%, with the distal volume measuring 12% (99ml), having reduced a further 50ml. In April 2017, her overall excess was 2% and the distal excess was reduced

to 9% (79ml), showing a further gradual reduction in the excess fluid to the distal forearm. Initially, she was wearing the sleeve 2–3 times per week, but is now wearing daily.

### Case study 3

An 85-year-old female patient who was diagnosed originally with left breast cancer in 1964, had a curative mastectomy at the time, and no other treatment was reported. In July 2016, she developed a late onset hand oedema. Recurrent disease was excluded at this time.

She attended the St Margaret's Hospice lymphoedema clinic for assessment of her left arm swelling in October 2016 (Figure 5), when her overall excess volume measured 14% and was distributed as a 27% (312ml) distal excess and 5% proximal.

She was initially fitted with a combined sleeve, but unfortunately developed a rash so was fitted with a class 2 JOBST Bella Lite combined armsleeve, size large regular with grip top (Figure 6), and no rash was observed after changing to this garment. The hand oedema did improve, although she did not experience complete resolution.

Initially, there was a reduction in the distal excess volume to 21% after 6 weeks; however, this increased to 26% after a further 2-month follow-up, but this was thought to be due to having a knee replacement and utilising walking sticks following this, which likely put additional strain on the arm and increased the swelling. She found the sleeve very comfortable and controlled the oedema but she did not feel it necessary to wear the glove.



**Figure 6. Patient fitted with a class 2 JOBST Bella Lite combined armsleeve, size large regular with grip top**



**Figure 7. Patient assessment in August 2015 following mild lymphoedema after a mastectomy**



**Figure 8. Patient fitted with a class 1 JOBST Bella Lite garment, which resulted in a decrease in swelling**

### Case study 4

An 84-year-old female patient diagnosed with right sided breast cancer in November 2014 underwent a mastectomy, axillary node clearance and chemoradiotherapy. Chemotherapy was stopped early due to side effects: 9 out of 11 lymph nodes were positive.

She was assessed in the St Margaret's Hospice lymphoedema clinic in August 2015 following mild lymphoedema developing after surgery (Figure 7). Breast care nurses had attempted to implement an armsleeve, but hand swelling subsequently developed necessitating the referral.

On initial assessment, her overall excess limb volume was 29%, 55% distally and 12% proximally. She was fitted with a flat-knit compression sleeve following a course of lymphoedema bandaging, but due to increasing frailty, she was unable to tolerate the fabric and she was fitted with a class 1 JOBST Bella Lite, which she found easier to apply and this resulted in a decrease in swelling (Figure 8).

In January 2017, at her follow-up appointment, she was found to have had an overall increase measuring 37% in excess volume, 61% distally and 20% proximally. At this stage, the compression class was increased to a class 2 and she was followed-up again 5 weeks later where the measurements had reduced to a 22% overall excess volume, 41% distally and 8% proximally. By May 2017, her overall excess was reduced to 19%, 35% distally and 8% proximally.

### CPD REFLECTIVE QUESTIONS

- ◆ In your own clinical practice, how do you manage patients with upper limb lymphoedema?
- ◆ How does lymphoedema impact on your patient's activities of living and quality of life?
- ◆ What are the benefits of ready-to-wear compression garments?

### Outcome and results

From the case studies it is clear that the JOBST Bella Lite garments were effective in managing lymphoedema at different stages, from the earlier onset mild lymphoedema (ISL stage 1 and 2), to the more severe complex lymphoedema (ISL late stage 2 and stage 3). Patients found the garment comfortable and easy to apply. It was favourable with the therapists due to the ease of use, measuring and selection of the garment. JOBST Bella Lite is listed on the Drug Tariff, making it widely available to patients in both acute and community settings, enabling prescription of the garment to avoid the need for ongoing follow-up in specialist services. As the product is available in this manner, it means that community health care professionals can easily obtain this without referral to the specialist services when dealing with mild to moderate lymphoedema (ISL stage 1–2).

### Conclusions

These case studies highlight the impact of implementing compression garments for those suffering from lymphoedema and the outcomes that patients can expect. The earlier the patient is offered advice and support, the earlier the lymphoedema can be managed, and hopefully before requiring more specialist intensive interventions, which can be cumbersome and have an impact on activities of daily living. If health care professionals can familiarise themselves with the signs and symptoms of lymphoedema, have an idea of the impact on patients' quality of life, and be knowledgeable about treatment that can be implemented quickly and easily, the outcomes for the patient will be quicker and will hopefully eliminate the need for onward referral and additional appointments.

**BJCN**

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