

Empowering patients to self-care with a Velcro wrap compression device

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Chronic oedema is a soft tissue swelling present for at least three months, most commonly caused by venous and lymphatic impairment. It has a huge impact on quality of life and over time may cause social deprivation. The mainstay of treatment is compression therapy and treatment of the underlying cause. Comfort and acceptability of the compression system is essential. Clinicians need to work with patients to ensure that they are included in treatment decisions and empowered to take charge of their condition.

KEYWORDS:

- Lymphovenous oedema
- Leg ulceration
- Empowerment
- Concordance
- Self-management

Chronic lower limb oedema is a persistent, abnormal swelling of the leg caused by an increase of fluid in the tissue. In the microcirculation of a normal limb, fluid containing oxygen, proteins and nutrients is released by the capillaries into the interstitial space and is reabsorbed into either the bloodstream or the lymphatic system to maintain fluid balance. When an imbalance occurs due to underlying venous and/or lymphatic disease, the drainage of fluid is impaired, resulting in oedema (European Wound Management Association [EWMA], 2003).

PREVALENCE

Chronic oedema is a common undiagnosed, and often misdiagnosed, long-term condition. Prevalence statistics and current demographic trends indicate that it is a major and growing healthcare problem. A recent single-centre population study demonstrated a crude prevalence of 3.93 per 1000,

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but higher among those aged 85 and above (5.37 per 1000) and higher among women than men (Moffatt et al, 2016). Unsurprisingly, 40% of those with chronic oedema also had concurrent leg ulceration (Moffatt et al, 2016).

It is well documented that venous ulceration is the most common type of leg ulcer, affecting approximately 1% of the population and 3% of people over 80 years of age (Scottish Intercollegiate Guidelines Network [SIGN], 2010). Indeed, Guest et al (2015), found that 1.5% of the total adult population are living with a leg ulcer. Similar to chronic oedema, the prevalence increases with age and the global prevalence is predicted to escalate as people are living longer, often with multiple comorbidities (Todd, 2014).

LYMPHOVENOUS OEDEMA

Lymphovenous oedema is the result of a combination of venous and lymphatic insufficiency. Venous hypertension results from valvular incompetence in the superficial, deep or perforator veins. Increased

venous pressure transcends the venules to impede flow within the capillaries. This causes increased capillary filtration that overloads the lymphatic system resulting in oedema. In clinical practice, leg oedema will be accompanied by one or more of the classical signs of venous disease, namely (Nicolaidis, 2000):

- ▶ Haemosiderin staining
- ▶ Varicose eczema
- ▶ Atrophie blanche
- ▶ Lipodermatosclerosis
- ▶ Ulceration.

BURDEN OF LYMPHOVENOUS OEDEMA

Lymphovenous oedema represents a significant burden to patients and the NHS. Recent research has found that around 730,000 patients in the UK have leg ulceration, of which 278,000 were diagnosed as venous in origin (Guest et al, 2015). The impact on quality of life is well documented and is similar to that of other common chronic conditions, such as renal failure, heart failure and diabetes (Hopman et al, 2016). The associated symptoms include pain, odour and exudate, and are frequently accompanied by loss of mobility, lack of sleep and social isolation (Franks and Morgan, 2003; Green et al, 2014). Furthermore, the cost to the NHS of treating wounds is £5.3 billion, of which leg ulcers are the most commonly treated (Guest et al, 2015).

MANAGEMENT OF LYMPHOVENOUS OEDEMA

Best practice management of lymphovenous oedema is a holistic, multidisciplinary approach that includes (Lawrence, 2009; National



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Institute for Health and Care Excellence, 2013):

- ▶ Swelling reduction and ulcer healing using compression
- ▶ Skin care to optimise the condition of the skin and treat any venous eczema
- ▶ Exercise/movement to enhance lymphatic and venous flow
- ▶ Treatment of the underlying venous disease to reduce risk of recurrence and/or long-term compression maintenance.

There is evidence to suggest that the management of the condition is often sub-optimal. Chamanga (2014) highlighted the poorer outcomes associated with wrongly applied bandages. In the author's clinical experience, the frequency and correct application of compression bandaging is often compromised by staff shortages, inadequately trained staff and lack of continuity of care. Inappropriate management may lead to increased exudate volume, wound deterioration and have a negative impact on patient quality of life.

To address these issues, it is important to recognise that different compression options may be suitable for different patients, depending on the clinical challenges presented (Wounds UK, 2016). Self-adjustable Velcro compression devices may represent an effective alternative to either compression bandages or hosiery. In addition, they aid self-management with significant related cost-savings (Blecken et al, 2005). This article looks at the use of JOBST® FarrowWrap® garments (BSN medical, an Essity company), as an alternative to compression bandaging in the presence of lymphovenous disease combined with tissue loss.

EMPOWERMENT

Involving the patient as a key decision-maker in the management of their lymphovenous oedema may improve outcomes (Department of Health [DH], 2001). Ribu and Wahl (2004) demonstrated that patients can become experts in their own leg ulcer management, and enabling

them to take control of their chronic condition can improve their self-esteem (Sneddon and Lewis, 2007). This is consistent with the *Five Year Forward View* (NHS England, 2014), which makes patient empowerment and involvement a priority. Indeed, the expert patient is likely to reduce demands on both acute and primary care services, as they manage their long-term condition more effectively. The issue of empowerment was pivotal in the case reports included here.

JOBST® FARROWWRAP®

JOBST FarrowWrap is a compression system that consists of a liner and an outer wrap piece and is indicated for both lymphatic and venous disorders. It has the advantage of short-stretch or inelastic technology. Inelastic compression is favoured for chronic lymphovenous oedema, as the fabric does not yield to expansion related to the oedema (Wounds UK, 2016). The stiff fabric provides superior augmentation of the calf's natural muscle pump action and delivers a lower resting pressure and high working pressure, which aids venous and lymphatic return.

CONCLUSION

In the author's clinical experience, the simplicity of Velcro fastening allows maximum patient independence, enabling the patient and/or carer to control their own care, while the range of JOBST FarrowWrap's styles, sizes and the availability of two compression classes provide the variation required in clinical practice. The cases included here show how involving patients in their own care and decision-making, providing them with a choice of therapy, education and ongoing support, can foster self-management and empower patients which, in turn, leads to improved outcomes and wellbeing. **JCN**

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CASE REPORT ONE

Ms B is a 63-year-old lady, who was referred to the vascular nurse clinic from dermatology. She had a long history of lesions to her left leg. With a background of extensive sun damage and multiple non-melanotic skin cancer she had been referred for a dermatology opinion. Dermatology felt the skin lesions were of a different aetiology and warranted vascular opinion. Upon referral, Ms B had leg oedema and copious exudate from the lesions (*Figure 1*). She was managing her leg herself with multiple pads and loose crepe bandages, but her preference was to keep the lesions dry and crusty if possible. She described emollients as 'melting her skin' and so moisturising was not part of her skin care routine. The main issue on referral was oedema in her legs, which was causing exudate production. Her expectation was not to heal her skin completely, but to keep it manageable.

Following vascular assessment, evidence of superficial venous reflux was noted. Her ankle brachial pressure index (ABPI) was normal. For people with leg ulcers, the arterial supply to the leg should be assessed to support the safety of compression bandaging (SIGN, 2010). Ms B was reluctant to try compression bandaging, but after a lengthy discussion weighing up the pros and cons, she agreed to 'give it a go', as it was felt that compression was the answer to reduce the oedema. Ms B had a very active lifestyle, with no time to sit with her legs elevated. A short-stretch cohesive two-layer system was applied with a non-adherent wound contact layer. Inelastic bandaging is most appropriate for chronic oedema due to the massaging effect on the lymphovenous system. If a cohesive inelastic bandage is used, this can help overcome bandage slippage as the oedema reduces. Compression can also contribute to ulcer healing and help to prevent further deterioration of the skin (EWMA, 2003).

It was anticipated that she would be reviewed in one week, but three days later she asked to be seen urgently due to increased discomfort and malodour. Upon removal of the bandages, there was extensive skin loss and evidence of pseudomonas. Ms B felt that this was due in part to her leg 'being encased in the compression bandages' and no longer showering daily. Her leg was washed with potassium permanganate, and Cutimed® Sorbact® swab (BSN medical, an Essity company) was applied as the primary dressing to reduce the bacterial bioburden. Two-layer full compression bandages were reapplied after a lengthy debate. Ms B was reluctant to have her legs covered for a week at a time, as she preferred to have her skin exposed to the air, which she felt would dry up the wounds; however, oedema was now an issue with serous leakage, but there was no sign of clinical infection. In people with chronic leg ulcers, systemic antibiotics should only be used if there is evidence of infection (SIGN, 2010).

At review four days later, the exudate volume had decreased, there was less pseudomonas and the oedema was reducing. However, Ms B was shortly going

to Italy and was unhappy with the regimen of compression bandages. She felt disempowered by not being able to look after her leg herself, and the trips to clinic were interfering with her usual daily activities. The vascular nurse was aware of the potential loss of Ms B's trust and engagement. Thus, JOBST FarrowWrap was discussed as an alternative and Ms B could see the potential of taking control of her care once more. She was measured and fitted with JOBST FarrowWrap Strong, which provided her with 40mmHg of compression therapy, but with a soft conformable garment (*Figure 2*). Cutimed® Siltec® (BSN medical, an Essity company) was used as the primary dressing due to its softness, conformability, absorbency and ease of application. Ms B thus became self-managing again.

Four months after her initial visit, Ms B presented at a follow-up appointment. Her skin had improved with fewer lesions evident, there was no exudate and she was wearing the JOBST FarrowWrap as she felt necessary (*Figure 3*). She was delighted with the outcome and extolled the virtues of a Velcro leg device as an alternative to bandaging. She felt it was not necessary to attend any

further appointments and was discharged. She declined any intervention for her venous disease.

DISCUSSION

There is some evidence to suggest that healthcare professionals sometimes focus more on the wound's progress than on what the patient wants, with a mismatch in expectations leading to disillusionment with care and poor concordance (Persoon et al, 2004; Briggs and Flemming, 2007). Indeed, Cullum et al (2016) identified that although patients were concerned about the socially inhibiting consequences of their complex wound, wound care services often did not focus on the psychological or social impact. Here, Ms B merely wanted the exudate reduced and to be left to continue to manage her skin lesions herself and carry on with her busy life. Thus, it is important to view the situation in a holistic manner, with a good understanding of the quality of life issues relevant for the patient.

This case shows how JOBST FarrowWrap can be used successfully to control oedema and promote patient/carer independence.



Figure 1.
Initial visit.



Figure 2.
Application of FarrowWrap Strong.



Figure 3.
Final visit four months later.

CASE REPORT TWO

Mrs H is a 92-year-old lady with a long history of bilateral leg oedema and intermittent ulceration following bilateral deep vein thrombosis (DVT). She lives alone with input from a carer who applies bandages when her legs leak. Over the years, Mrs H has been reluctant to wear compression hosiery and finds bandages uncomfortable, and her leg oedema has become chronic and recalcitrant. She is normally very sociable and loves to go out for lunch accompanied by her carer and an elderly friend, however, her 'heavy legs' are becoming a problem. She is finding it increasingly difficult to get her legs into bed and has taken to sleeping in a chair at night. Her legs have become 'leaky' with substantial skin loss. She is also having difficulty getting 'out and about', and is becoming self-conscious about the odour of her ulcer and the wet dressings. She is missing the social interaction of her regular lunches out and is feeling a 'bit down'. Mrs H does not want to become a burden on the NHS and values her independence and freedom from clinic appointments and so self-manages, with her carer changing her dressings as required. She was referred to the vascular nurse clinic by the practice nurse who was at a loss as to how to proceed.

At the first clinic visit she had bilateral leg oedema with shape distortion, and a large circumferential ulcer to her right gaiter. This was producing a high volume of exudate and required daily dressing changes



Figure 4.
First visit.

(Figure 4). Her ankle brachial pressure index (ABPI) was normal and she was known to have deep venous reflux. She made her negative feelings about compression bandages quite clear. Due to her poor tolerance of compression in the past, she would only agree to try reduced compression in the form of a two-layer short-stretch system. Cutimed® Sorbion® Sachet XL (BSN medical, an Essity company) was used as the primary dressing to absorb the exudate. She agreed to try and go to bed at night and elevate her legs when sitting during the day.

At her clinic visit the following week, the oedema in her leg had started to reduce and the exudate volume had decreased. The ulcer was also smaller. However, she was adamant that she did not want to continue with professional input on a weekly basis, and wondered if her carer could be taught how to apply the compression bandages. The concept of a JOBST FarrowWrap garment was offered as an alternative and she was keen 'to give it a go'. She was measured for a JOBST FarrowWrap Lite due to her low tolerance for compression (Figure 5). This provides compression within the range of 20–30mmHg. Her carer was shown how to apply the garments and the plan was that Mrs H would be able to have her daily shower once more. She was reviewed two months after her initial visit. The ulcer had almost healed, there was very little exudate and her skin condition had improved (Figure 6). Mrs H continues to sleep in bed and is enjoying her social activities once more.



Figure 5.
Application of FarrowWrap Lite.

DISCUSSION

Research has shown that the leakage and odour from leg ulcers can cause embarrassment, resulting in social isolation, low mood, depression and poor self-esteem (Moffatt et al, 2009). Interventions to improve leakage and odour have often proved inadequate (Green et al, 2014). Providing Mrs H with a JOBST FarrowWrap garment enabled her to shower and apply emollients daily, which improved her feeling of wellbeing as well as her skin condition due to the compression system's efficacy. Skin care is vitally important and a good daily skin care regimen should be encouraged to help maintain skin integrity and minimise the risk of infection (Lymphoedema Framework, 2006).

JOBST FarrowWrap Lite was a compromise between compression and non-concordance, as Mrs H would have benefited from stronger compression to improve her leg shape and reduce the risk of recurrence. Patients should be offered the strongest compression they can tolerate to prevent ulcer recurrence (SIGN 2010). As Mrs H has found the current garments comfortable, changing to JOBST FarrowWrap Strong will be discussed when the time comes to renew the garments. It is important that patients are reviewed regularly, with limbs being re-measured every four to six months and new compression garments prescribed as appropriate (Lymphoedema Framework, 2006).



Figure 6.
Two months after first visit.

KEY POINTS

- Chronic oedema is a persistent, abnormal swelling caused by an increase of fluid in the tissue, that has been persistent for three months or longer.
- It can have a significant impact on all aspects of a patient's life — both physically, psychologically and socially.
- Self-management is crucial to the management of chronic oedema.
- JOBST FarrowWrap is a compression system that consists of a liner and an outer wrap piece and is indicated for both lymphatic and venous disorders.
- The stiff fabric provides superior augmentation of the calf's natural muscle pump action and delivers a low resting pressure and high working pressure, which aids venous and lymphatic return.
- The cases included here show how involving patients in their own care and decision-making, providing them with a choice of therapy, education and ongoing support, can foster self-management and empower patients.

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