Use of compression shorts in the management of lymphoedema and lipoedema

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People with lymphoedema and lipoedema face many challenges in maintaining a good quality of life. A key aspect of this is managing and maintaining swelling of the affected areas. Although many treatment options are available, compression remains the mainstay of therapy. Compression therapy is classified as an essential component of lymphoedema and lipoedema management and has been used successfully for many years. It can be applied in the form of compression garments, wrapping devices, bandaging or pneumatic compression. The aim of compression is to encourage lymphatic drainage by reducing capillary filtration and providing graduated compression (Cooper, 2013).

Selecting garments

Many styles and types of garments are available, and these have been discussed previously (Lee and Wigg, 2012), but not every garment is suitable for every patient. It takes time, an experienced therapist and specific knowledge to select the correct compression garment for individual patients. Often patients may have to trial many different

ABSTRACT

Compression therapy is the mainstay of treatment in the management of lymphoedema and lipoedema. However, due to variance in the location, severity and type of the condition, patients often have to compromise on garments to ensure that the affected area of oedema is controlled. This article discusses the use of Veni compression shorts (Haddenham Healthcare) and Capri garments as an alternative treatment option to full-leg compression garments. The article explains treatment areas and conditions where the application of these garments will enhance care—for example, for trunkal swelling—and where compression may not generally be required—for example, in the feet.

KEY WORDS

Compression therapy ◆ Veni ◆ Lymphoedema ◆ Lipoedema

garments before a suitable product is found. Negotiation and patient choice often results in increased concordance with compression hosiery, although this may compromise outcomes, and engaging patients in their own self-management can still present a challenge to the therapist (Anderson, 2012). Different products are being developed in order to encourage concordance and self-management. For example, while many compression garments deal with lower-limb oedema, products are now available that are aimed at patients with oedema to the trunk, hips, buttocks and thighs.

Trunkal swelling

People with lymphoedema can present with oedema located in the suprapubic region, and this can go undetected for a long time. A thorough assessment is required in order to identify it, assessing for the texture of the tissues, change in skin thickness or skin changes such as pitting or peau d'orange. In addition, assessment tools as such the MoistureMeter DC can detect subtle fluid shifts through the use of tissue dielectric constant (TDC) analysis (Mayrovitz et al, 2009) (see Figure 1). This is a useful tool for early detection of suprapubic oedema, which can often develop unknown to patients. Normal TDC is between 20% and 42%, but having a pre-operative measurement is a good standard to set. A ratio of 1:2 is a suitable point at which to implement treatment (Wigg et al, 2014). This is determined by dividing the affected side into the unaffected side, showing an increase of 20% change, thereby identifying an oedema. General treatment for genital oedema is the use of manual lymphatic drainage, compression garments or bandaging, with the additional use of padding. However, sometimes compression garments will not apply appropriate compression to the area required, and applying a shaped pad to the area is therefore essential. Compression garments such as Veni shorts (Haddenham) provide graduated class 2 compression throughout the

Figure 1. Delfin MoistureMeter DC—tools such as these can help to detect swelling by detecting subtle fluid shifts through the use of tissue dielectric constant



Figure 2. Example of padding used to enhance compression to treat suprapubic oedema

whole of the garment, applying gentle pressure to the affected area which can also be enhanced through the use of pads (*Figure 2*).

Specialist clinics

Patients that present with oedema extending into the trunk are often referred to specialist lymphoedema clinics, as suitable garments are not available on prescription. These specialist clinics may provide garments including the use of footless tights, Capri shorts or specialist midline compression garments (e.g. Haddenham ETO range). Though effective, these garments have previously been ordered through specialist lymphoedema clinics, leading to increased caseloads of patients who are unable to be discharged due to the garment not being available on prescription. The development of products such as Veni compression shorts has assisted with some of these issues.

Suprapubic oedema

Many patients who undergo gynaecological surgery develop post-operative oedema to the suprapubic region

without any signs or symptoms. Although the actual number of patients is unknown, Belgrado (2014) has identified this complication through the use of lymphofluoroscopy and suggests the early use of compression shorts post-operatively. Clinical experience demonstrates that some patients experience an increased 'padding' to the area and presume that it is normal post-surgery. Furthermore, primary lymphoedema patients sometimes develop oedema to the suprapubic and genital area while remaining asymptomatic and without recognising the long-term side effects. Clinical evidence indicates that early intervention by wearing compression shorts could reduce the long-term effect of complications such as increased episodes of infection, thrush, papillomatosis and lymphorrhea. See Box 1 for a list of indications for use of compression shorts.

Psychological issues

The psychological effects of living with lymphoedema and lipoedema are well documented (Todd, 2010; Hardy, 2012), further psychological impact on the patient is apparent where there is genital oedema. The implications for patients in terms of body image is seen on a daily basis throughout clinics globally. During assessment, skin changes are noted and how this impacts on activities of daily living. Patients often report problems with wearing underwear as it can often cause restriction and discomfort in the inguinal region, where there are often scars or further tissue damage. The same applies to females that have undergone surgery and radiotherapy for vulval cancers. In such situations women often find it difficult to obtain a comfortable fitting garment that can apply sufficient compression to the labia to prevent complications of oedema. However, the application of compression around the labia is now more achievable with products such as Veni compression shorts.

Men with scrotal oedema often experience problems with passing urine, either due to an inability to direct flow as the penis is also oedematous, or if the scrotal oedema is so large that the penis has become retracted. Scrotal oedema is often managed with light bandaging or compression garments. As products such as Veni shorts apply compression throughout the whole garment (including the panty section), they are suitable for assisting in the maintenance of scrotal and penile oedema, enhancing patient function and quality of life and aiding self-management without the need for the patient to attend clinic or nurses visiting to apply bandages.

People who have undergone surgery for melanoma of the thigh or trunk and removal of inguinal nodes can often be left with associated oedema to the suprapubic, inguinal, buttock or thigh regions. These patients are often required to wear garments with closed toes to accommodate the oedema to the site-specific area. By wearing garments such as Capri or Veni shorts, the need for full leg garments may be reduced. This is also true for people who have lipoedema or who have undergone abdominal surgery

or breast reconstruction involving a transverse rectus abdominis myocutaneous (TRAM) flap or buttock flap. Often support is required post-operatively to assist healing and comfort of the donor site.

Lipoedema

Lipoedema is finally being recognised as its own condition and speciality in the lymphoedema world, with therapists gaining expertise in treating this condition more appropriately. Lipoedema occurs with the laying down of abnormal fat cells from the waist to the ankles and exists almost exclusively in women. Symptoms often (but not always) include tenderness, skin that bruises easily and impaired elasticity of the skin (Todd, 2010). Tendons and ligaments may also be impaired, which may lead to joint hypermobility or coexisting problems (Hodson and Eaton, 2013). For people with lipoedema, the support from garments can assist with reduction of pain, help with venous return and assist with improving the shape of the legs while worn. The feet are very often free of swelling with lipoedema, so the patient does not always need compression to the feet. It is very likely that lipoedema will develop into lipolymphoedema over time, so patients will need to be monitored closely to ensure a change of compression and management takes place as required. The wearing of garments such as Veni compression shorts will assist with the prevention of oedema accumulation, aid venous return and may reduce aching of the limbs. Cosmetically, a garment that looks more akin to 'fashion leggings' than medical compression garments is more likely to be accepted by many patients (Figure 3).

Obesity

Very often lipoedema and obesity coexist, although when weight loss occurs the fat deposition in the lower body is not reduced in lipoedema (Todd, 2010). It is important to distinguish between the two so that appropriate interventions are initiated. The British Lymphology Society (2011) has published guidelines on the management of those patients who present with obesity-related lymphoedema. It details treatment pathways where complex treatment is modified and includes an active weight management programme. Pathways include the use of compression garments, as they are seen as being effective at reducing oedema in this group. Where patients may have problems with application of garments, or require extra support to the abdomen due to the size, compression shorts may provide an alternative option whereby patients can apply a second garment to the lower legs as highlighted in the following section.

Double layering

It is relatively common practice in lymphoedema management to use several layers of compression in some complex cases (Wigg and Lee, 2013). This is often necessary when patients have problems applying a

Box 1. Indications for compression shorts

- Post gynaecological surgery
- Melanoma patients
- · Genital oedema (male and female)
- Thigh swelling
- Lipoedema
- Palliative care
- Obesity



Figure 3. Veni compression garment—Capri leggings

stronger garment or where the graduated compression in standard garments reduces to the thigh and the clinical situation presents itself such that the patient requires more compression to a specific area. An example of this is when the patient has primary lymphoedema located in the thigh with tissue changes and where the normal pressure gradient from garments may not provide the pressure required to the thigh to maintain the oedema or prevent refill. However, double layering using compression shorts could increase this, providing a more effective outcome.



Use of garments such as compression shorts can aid self-management, minimising the need for patients to attend specialists and saving on (or relocating) resources

Likewise, where some patients can only apply below-knee garments, the use of a second layer from the knee in a pair of shorts may increase compliance and provide a better therapeutic result. This will in turn encourage patients to manage their condition more effectively. Recent research suggests that there is a shift occurring towards equipping patients with the knowledge and skills to enable supervised self-management (McGowan et al, 2013).

Compression shorts

Veni is a circular knit garment made by the continuous knitting of the fabric using a cylinder, which ensures that the garments have no seams, are thinner than flat knit and are more cosmetically pleasing. The Veni short is a class 2, graduated circular knit short with fully knitted body. It is soft and comfortable, making it easy to apply, and is available in five sizes and two lengths (Capri leggings and shorts). It is available in two colours (beige and black) with the largest waist size extending up to 115 cm and 135 cm hips. It is versatile to fit a larger population in 'off the shelf' sizes. It is finished with an adjustable waist band and soft-woven finish to the leg (*Figures 4* and *5*).



Figure 4. Veni compression garment—shorts

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Effect and comfort

An international audit was carried out on the garments in three centres in order to examine the effect and comfort of the Veni compression shorts. Of the 25 patients audited, 100% of the feedback identified that the garments were comfortable, were the correct fit to the legs, reflected the size chart, stayed in position and the therapist was happy to leave the patients in them (Haddenham Healthcare, 2014). Following the audit, slight modifications were made to the garment: the waist length was shortened and the garments were retrialled. Comments were made that the garments 'maintained or reduced the oedema' and that the patients wanted to 'stay in the garments' or 'wanted another pair'. They were also commented on as being 'fantastic' and 'extremely comfortable, 'applying compression in all the right places'.

Conclusion

Compression shorts provide an 'off the shelf' solution to the problem of midline, trunkal, thigh and buttock oedema—a problem which has existed for many years. Patients often struggle with comfortable compression or have to wear inappropriate full-leg pantyhose. Compression shorts provide therapeutic and comfortable compression, thereby assisting with compliance. The material is firm enough to maintain and reduce oedema but flexible enough to ensure comfort and wearability.

BICN

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Figure 5. Soft-woven finish to the leg used in compression shorts

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KEY POINTS

- Veni compression shorts and Capri pants are suitable for lymphoedema and lipoedema associated with the thighs and abdomen
- Veni shorts and Capri pants can be used as a single garment or in combination with other garments to provide a higher level of compression
- Garments can be used with other leg options where patients are unable to apply a full panty garment
- Veni shorts and Capri pants have compression to the panty section ensuring that an increased level of compression is achieved to the trunk