

HADDENHAM HEALTHCARE: CHILDREN WITH LYMPHOEDEMA

Gail Close

The treatment of lymphoedema in the UK is predominantly based on the needs of adults with cancer-related lymphoedema (Robertson Squire, 2000). This paper aims to look at the different treatment options available from Haddenham Healthcare and their suitability for children with lymphoedema. Factors such as age, parents' attitude and severity of oedema all need to be considered when deciding on a treatment programme, although the management of lymphoedema in children is similar to that of adults (Mansour and Sharland, 2000).

Key words

Lymphoedema
Children
Compression classes
Treatment options

Although not classified as a disability, lymphoedema can be a debilitating condition which, if left untreated, can cause a variety of problems ranging from mobility and functional difficulties to psychological issues, and living with lymphoedema can have profound effects on both the patient and their family (Robertson Squire, 2000).

Although childhood lymphoedema is relatively uncommon, early intervention and management is essential (Connell et al, 2009). The exact number of children with lymphoedema in the UK is unknown, but it is important that any specialist who might be referred a child with lymphoedema has the skills both to diagnose and treat that child and support their family. Connell et al (2009) have recently been published on the

diagnosis of children with lymphoedema. It is not the purpose of this paper to explore this further, but rather to highlight the treatment options available.

As lymphoedema specialists we need to be aware of and understand the different treatment options, their suitability and the general practicalities of treating and managing children with lymphoedema, such as child development both physically and psychologically. Across England, centres treating children have to adhere to certain guidelines (Department of Health [DH], 2004; Department for Children, Schools and Families [DCSF], 2009). As well as these general national guidelines, the International Lymphoedema Framework (ILF) has also focused on the treatment of children with lymphoedema in recent months (ILF, 2010). In line with these guidelines, steps are being made by the International Lymphoedema Framework (ILF) and the British Lymphology Society (BLS) to access the number of children with lymphoedema and gain a further understanding of the needs of both the child and their family.

Treatment options

Due to increased awareness and publicity, access to services and lymphoedema specialists has improved in recent years. Alongside this, huge advances have been made in treatment/maintenance options, from

developments in fabric technology to new innovations in treatment.

Advances in fabric technology have led to a wider range of fabric choice for both the patient and the specialist, from the traditional, rigid flat-knit material to finer materials, both in flat- and circular-knit, which still apply the higher levels of compression required to treat lymphoedema (*Table 1*), which is recognised as the gold standard of treatment (Lymphoedema Framework, 2006a). Along with the advances in graduated compression garments, new treatment options such as kinesiology taping, intermittent pneumatic compression (IPC) pumps incorporating manual lymphatic drainage (MLD) therapy, low level laser therapy, short-stretch wrap systems and padded garments have all evolved to help manage the needs of the patient with lymphoedema.

There have also been developments in the standard of care that patients can expect to receive with the development of guidelines to promote clinical excellence and standardise care (Lymphoedema Framework, 2006b). Currently, all these developments target the treatment of adults with lymphoedema. However in the author's opinion, as lymphoedema therapists become more specialist and access to treatment improves, a greater number of clinics are beginning

to see children and young people with lymphoedema.

When considering treatment options, the traditional focus for lymphoedema has been based on the four cornerstones of care, namely:

- ▶ Skin care
- ▶ Lymphatic drainage
- ▶ Graduated compression
- ▶ Gentle exercise (BLS guidelines).

While these cornerstones remain relevant, there is also a need to expand the perimeters and include education, information, innovation and psychological support. With children, this includes the support of both the child and their parents.

Haddenham Healthcare are conscious of the changing needs of this group of patients, and the challenges specialists face in treating them. This has led to the development of a treatment ladder aimed at helping specialists select age-appropriate treatment options without limiting choice or dictating a treatment pathway (Figure 1). Haddenham Healthcare are focused on children's lymphoedema and hope to enable specialists to feel comfortable treating children. To achieve this, it is important to look at the different therapies and what each option offers to both the child and the specialist. Our aim is not to dictate treatment, but to offer the specialist the information needed to make an informed and confident treatment plan.

One of the key considerations when treating children with lymphoedema is maintaining normality. All treatment should include observation of both physical and psychological development, while not detracting from the child's ability to play and enjoy childhood (Damstra and Mortimer, 2008). The biggest hurdle for both the child and their family is often the idea of wearing graduated compression garments. In some cases, this idea proves to be more difficult for the parent to accept than it is for the child, as supported by Mansour and Sharland (2000) who suggest that the attitude of parents is vital when treating children. This could

Table 1

RAL compression classes

RAL standard			
Class 1	Class 2	Class 3	Class 4
18–21mmHg	23–32mmHg	34–46mmHg	>49mmHg

be because they physically struggle to apply the graduated compression garments to a younger child (who may not wish to comply with either the parent or the treatment), or the thought that by wearing such garments they are highlighting the fact that their child has a medical condition.

Graduated compression garments

Obviously, the younger child does not fit into standard size garments so custom-made ones are required. As the child is growing rapidly, these garments need to be replaced frequently. It is important to note that custom-made garments include both flat- and circular-knit options. The choice between these two types of garments should be clinically made, based on the size and shape of the limb.

Larger limbs with shape distortion often require flat-knit garments to ensure correct fit for both comfort and maintenance of the compression

gradient, whereas the discussion about compression class should consider the child's age (Figure 1). Every custom-made garment is produced to unique and individual measurements.

Measurement forms and points are the same for both adults and children.

0–5 years		5–12 years	12+ years		
18–21mmHg (RAL Class 1)					
Star Cotton					
Pertex					
Microfine					
Gottfried					
Eto					
Kinesiology Tape					
FarrowWrap					
JoViPak					
18–21mmHg (RAL Class 1)		18–21mmHg (RAL Class 1)	23–32mmHg (RAL Class 2)		
As previous plus:					
Veni					
Doktus					
18–21mmHg (RAL Class 1)				34–46mmHg (RAL Class 3)	As previous plus:
Star Cotton					
Pertex					
Microfine					
Gottfried					
Eto					
Kinesiology Tape					
FarrowWrap					
JoViPak					
18–21mmHg (RAL Class 1)		Low level laser	Hydroven 12 LymphAssist		
As previous plus:					
Veni					
Doktus					
18–21mmHg (RAL Class 1)				Goldpunkt	As previous plus:
Star Cotton					
Pertex					
Microfine					
Gottfried					
Eto					
Kinesiology Tape					
FarrowWrap					
JoViPak					

Figure 1. Treatment ladder.



Figure 2. Some of the available garments, fabrics and colours.

However, measuring a child can be tricky as they tend to move while being measured. In the author's experience, a pen and a spare tape measure can be useful distraction tools. Another important consideration with this younger age group is the practicality of wearing graduated compression garments. Simple solutions such as easy openings to the panty section of tights, or open crotch options for the ease of nappy changes or toilet training, or grips sewn onto the soles of the feet to offer some purchase while learning to walk, can make all the difference to the parent.

As the child grows and develops, the focus of care will subtly change from the parent acting as provider to the child growing in independence. This growth is not only physical but also psychological, including a developing sense of self-awareness. In the author's experience, this self-awareness can manifest as a rebellion against previously accepted treatments.

Graduated compression garments remain a core element of treatment, however as the child grows and develops it is often the element they rebel against most.

Graduated compression garments remain a core element of treatment, however as the child grows and develops it is often the element they rebel against most. This can be a cosmetic reaction as well as an issue of self-awareness and not wanting to highlight any physical differences between themselves and their peers (Mansour and Sharland, 2000). While the issue of compliance/non-compliance will always remain, the recent advances in fabric technology mean that there is now a wider choice of both fabrics and colours available (Figure 2). It is important to allow the child a degree of input into garment choice (be it the colour

or the choice of fabrics in the required compression class), as this gives some ownership of the garment and may help with compliance.

Other treatment options

As well as improvements in fabric technology, there are also a variety of innovations that are suitable for use on children — some from a young age, others as the child matures. These include kinesiology tapes which are available in a variety of colours and can be applied to any age group (following a patch test). Kinesiology taping is becoming more recognised as a useful tool in managing lymphoedema in both children and adults, although as yet clinical research is limited (Lymphoedema Framework, 2006b; Lawrance, 2009).

Despite the fact that IPC has been around for a number of years, it has been added to the new innovations group by the inclusion of MLD theory into the

design, for example, Hydroven™ 12 with LymphAssist™ (Haddenham Healthcare). This technology allows the pumps to be tailored to treat lymphoedema (Wigg, 2009a; Lawrance, 2009). The 'Best Practice for the Management of Lymphoedema' (2006b) document highlights some clinical guidelines for the use of IPC pumps. When considering IPC to treat children, the height of the child is an issue. For younger (or smaller) children, IPC pumps may not be appropriate, however once the limb is long enough to fit into the multi-chamber sleeve, IPC can be considered.

Short-stretch wrap systems, or adjustable compression devices, offer a simple self-management tool (Lymphoedema Framework, 2006b). These wrap systems follow the principles of high working/low working pressure. As Lawrance (2008) indicates, a short-stretch wrap system offers a good alternative to short-stretch lymphoedema bandaging and, in some instances, to graduated compression garments. Such systems can provide ideal treatment options and solutions for children of all ages, as it is possible to manufacture these wraps in very small sizes and, due to the adjustability of the wrap systems, they can cope with any fluctuations in circumferential measurements. The ease of application of short-stretch wrap systems means that they offer a simple solution to the problem of teaching parents to apply short-stretch lymphoedema bandaging, and can increase independence for older children.

Padded garments such as JoViPak™ are designed to soften fibrosis and can be used independently or in conjunction with graduated compression garments, short-stretch wrap systems or under multilayer lymphoedema bandaging. This softening of fibrosis is achieved by the varying degrees of pressure created by the foam chips and the channelling in the garment which promote lymphatic flow. While not widely used in the UK, these products are used in America to good effect with young children in place of night bandaging (www.jovipak.com).

There is still no evidence base for the use of low level laser therapy and children. While we know the theory

behind the use of low level lasers (Lievens, 1991; Piller, 2006), the impact of their use on the lymphatic system (Tilley, 2009; Wigg, 2009b) and the fact that no long-term adverse effects have been reported over 30 years of use (Twycross, 2000), this work all focuses on the treatment of adults with lymphoedema. However, Twycross (2000) indicates that low level laser therapy can be safely used on children. With this in mind, low level laser is a treatment option for older children.

Conclusion

The cornerstones of care for the treatment of lymphoedema are the same for everyone, regardless of age or gender: Children have the right to treatment and to receive expert specialist care. With advances in technology there are now a variety of fabrics, colours and compression classes available in both standard sizes and custom-made garments, making them suitable for younger patients. In conjunction with traditional treatment options, there are also a wealth of new innovations available, some of which are suitable for both adults and children. JL

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Key points

- ▶▶ Normal child development must be assessed.
- ▶▶ Genetic testing may need to be considered.
- ▶▶ Experience of treating both lymphoedema and children is vital.
- ▶▶ The biggest hurdle for both the child and their family is often the idea of wearing graduated compression garments.
- ▶▶ Children have the right to treatment and to receive expert specialist care.