Ask the expert

In each issue of JCN we ask a clinical expert to take a look at a therapy area and examine some everyday problems that community nurses may experience. In this issue, we look at venous leg ulceration and associated oedema and ask the question...

How do I reduce foot oedema while healing a leg ulcer?

THE PROBLEM

Leg ulcers and chronic oedema can be complicated to treat, particularly when oedema is present in the foot and you are trying to apply compression bandaging. We asked Winnie Furlong, the clinical lead for the leg ulcer service, The Princess Alexandra Hospital and West Essex Leg Ulcer Service, to explain the best way to treat venous leg ulceration with associated foot oedema, in response to the implementation of local guidelines.

WHAT SHOULD I DO?

Venous leg ulceration occurs due to increased venous hypertension (high blood pressure within the veins) secondary to chronic venous insufficiency (where the veins in the lower limb cannot pump enough blood back towards the heart). Patients with chronic venous insufficiency are at high risk of developing lymphatic involvement, which will result in chronic oedema and may involve the forefoot (Williams, 2009). Therefore, it is no surprise that venous leg ulceration and chronic oedema often go hand-in-hand.

The incidence of chronic oedema is linked to patients’ age; therefore, as the population as a whole grows older, it is likely to become more common (Moffatt et al, 2003; Atkin and Sykes, 2012). It is essential that patients with venous leg ulceration are also assessed for chronic oedema and that the care plan incorporates wound healing and oedema reduction objectives.

While compression therapy is an essential component of leg ulcer/oedema management, the care plan should not just begin and end with it. Treatment should always include skin care — to prevent fibrotic skin changes and reduce the risk of cellulitis — and exercise, as muscular activity has a positive impact on venous and lymphatic return.

Due to the gravitational effect of chronic oedema, foot swelling can be a particular challenge, often leading to shape distortion, skin folds, toe swelling (indicated by a positive Stemmer sign — a diagnostic test that involves pinching the skin on the upper surface of the toe), and increased risk of further tissue breakdown (Figure 1) (Elwell, 2014). Oedema in the foot is often debilitating and can have a serious impact on the patient’s quality of life, making it hard to wear shoes and mobilise. Foot oedema and the distress it causes can be minimised — and in some cases entirely prevented — through early recognition and appropriate treatment (Elwell and Wigg, 2015).

COMPRESSION

The use of elastic compression bandaging systems is common in the management of venous leg ulcers. Such systems are usually applied at 50%-stretch with little-or-no compression applied to the foot. Appropriate application of this form of compression bandaging also requires a lot of skill (Ashby et al, 2014).

While this form of compression may be suitable for those with venous leg ulceration without limb distortion or forefoot oedema, they are not the most appropriate choice for those with chronic oedema (Williams, 2014). Furthermore, inappropriate bandage selection can exacerbate oedema in the foot and toes leading to ulceration and skin changes on the toes (Linnitt, 2007; Atkin and Sykes, 2015).

Inelastic compression

Inelastic compression bandages are applied at 100%-stretch creating a rigid cuff around the limb. They deliver a high level of stiffness that aids management of venous leg ulceration and oedema reduction due to the working and resting pressures exerted by the bandage, which mimic the pressures exerted by a healthy venous system (International Lymphoedema Framework [ILF], 2012; Harding et al, 2015).
Inelastic systems deliver lower pressures when patients are resting and higher pressures when they are active, resulting in improved venous and lymphatic return. Stiffer systems that deliver compression in this way can also be more comfortable for patients when compared with systems that deliver sustained levels of compression (Harding et al, 2015).

Inelastic cohesive compression is applied with tension from the foot instead of from the ankle — this helps to prevent the build-up of oedema on the dorsum that can be common in those with venous leg ulceration. For those with oedema in the toes, toe bandaging or toe caps may also be required to disperse the oedema (Elwell and Wigg, 2015).

**Hosiery kits**

For patients with mild-to-moderate oedema, once any distortion to the limb or foot has been reduced, the use of a European classification hosiery kit may be suitable, particularly if the ulcer is not highly exuding.

A recent randomised controlled trial (RCT) (Ashby et al, 2014) indicated that when compared with four-layer elastic compression bandaging, hosiery kits achieved similar healing rates and times but with the benefits of reduced cost and recurrence rates. Like inelastic cohesive compression bandages, hosiery kits provide compression to the foot as well as the leg. Their low profile also facilitates the use of normal footwear where possible.

**GUIDELINES**

With the above-mentioned principles of compression in mind, we have recently introduced a set of local guidelines for managing lower limb conditions. These guidelines provide clinicians with an evidence base that can underpin their practice. The guidelines include assessment, referral criteria and product selection for both dressings and compression. For patients with oedema to the foot and toes — as well as those with lymphoedema — the guideline indicates the use of an inelastic compression bandage to aid oedema reduction and prevent further disease progression (Actico®; Activa Healthcare).

The guideline also looks at hosiery selection following a period of bandaging, recommending that European classification hosiery be used in this patient group — even if the oedema has reduced during bandaging — to prevent venous leg ulceration and the recurrence of oedema (Wounds UK, 2015).

The stiffer fabric knit and the levels of compression delivered by European classification hosiery are more appropriate than British standard for those with a history of chronic oedema — this is similar to the way in which inelastic compression bandaging is preferable to elastic bandages. Patients with moderate-to-severe oedema causing limb distortion will require flat-knit hosiery for maintenance therapy (JCN Learning Zone, 2015). Support from the manufacturers has been essential in implementing these guidelines across my organisation, ensuring that staff are appropriately trained to deliver the recommended care.

**CONCLUSION**

In patients with venous leg ulcers, assessing for the presence of oedema — in particular its location — is essential to delivering optimum care. In view of the fact that patients with chronic venous insufficiency often have an overburdened lymphatic system and present with foot oedema, the use of traditional elastic compression bandaging is not the most appropriate choice and is often based on ritualistic practice (Elwell, 2015).

In fact, inelastic cohesive compression bandages are most suitable for the prevention and management of foot oedema (ILF, 2012; Atkin and Sykes, 2015); similarly, European classification is the most appropriate when seeking to maintain oedema reduction or heal venous leg ulcers using a hosiery kit (Wounds UK, 2015).

The guidance used in my local area is informed by these principles and I hope we can improve outcomes for those with leg ulceration and associated oedema across the trust.

This piece was sponsored by an educational grant from Activa Healthcare.

REFERENCES

EXHIBITION & STUDY DAYS 2015

FREE LOCAL EDUCATION FOR ALL THOSE WORKING IN PRIMARY CARE

NEW AND IMPROVED PROGRAMME

Extended exhibition viewing time, with companies representing stoma care, wound care, continence, nutrition, and equipment, to name but a few.

EVENTS CALENDAR

At JCN study days at Village hotels, all delegates will receive a free day pass to use their leisure facilities on another day. Free entry and parking at all events.

'I haven’t been to an event in a while, but this is so well-organised and up to date, and the speakers were very entertaining and informative.'
Shirley Wallington, community nurse

'Absolutely brilliant day — so informative.'
Mary McGhee, practice nurse

AS WELL AS THE MAIN EDUCATIONAL SESSIONS PRESENTED BY CLINICAL SPECIALISTS, THE EVENTS ALSO INCLUDE:

Learning zones: three practical, hands-on sessions that focus on important areas of your caseload

Regional sessions: hosted by local NHS organisations, these sessions cover topics that matter to your community

The exhibition also provides the opportunity to see and discuss latest products, treatments and techniques, and to catch up with colleagues and enjoy a free lunch.

WHO SHOULD ATTEND?

• District nurses  • Community nurses • Practice nurses
• Nursing home and school nurses • Health visitors
• Primary care trusts  • Healthcare assistants

To register for the JCN event of your choice and see the full day’s programme, go to: www.jcn.co.uk and follow the link from the home page, or email: angela@jcn.co.uk

'Having recently moved into practice nursing from a hospital setting, it was really helpful to have the chance to meet the people who are producing and designing products at the JCN exhibition, rather than simply learning about what is available from hearsay.'
Jennifer Brown, practice nurse

Roadshows

DPS 15.indd   2-3
10/10/14 4:56 PM
© 2015 Wound Care People Ltd

© 2015 Wound Care People Ltd
AS WELL AS THE MAIN EDUCATIONAL SESSIONS PRESENTED BY CLINICAL SPECIALISTS, THE EVENTS ALSO INCLUDE:

**Learning zones:** three practical, hands-on sessions that focus on important areas of your caseload

**Regional sessions:** hosted by local NHS organisations, these sessions cover topics that matter to your community

The exhibition also provides the opportunity to see and discuss latest products, treatments and techniques, and to catch up with colleagues and enjoy a free lunch.

At JCN study days at Village hotels, all delegates will receive a free day pass to use their leisure facilities on another day.

### 2015 EVENTS CALENDAR

<table>
<thead>
<tr>
<th>event</th>
<th>venue</th>
<th>date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blackpool</td>
<td>De Vere Village Hotel</td>
<td>Wednesday 11 February</td>
</tr>
<tr>
<td>Cardiff</td>
<td>De Vere Village Hotel</td>
<td>Wednesday 11 March</td>
</tr>
<tr>
<td>Newcastle</td>
<td>De Vere Village Hotel</td>
<td>Wednesday 25 March</td>
</tr>
<tr>
<td>Coventry</td>
<td>De Vere Village Hotel</td>
<td>Wednesday 29 April</td>
</tr>
<tr>
<td>Peterborough</td>
<td>Holiday Inn</td>
<td>Wednesday 3 June</td>
</tr>
<tr>
<td>Swindon</td>
<td>De Vere Village Hotel</td>
<td>Wednesday 10 June</td>
</tr>
<tr>
<td>Leeds</td>
<td>De Vere Village Hotel</td>
<td>Wednesday 24 June</td>
</tr>
<tr>
<td>Bournemouth</td>
<td>De Vere Village Hotel</td>
<td>Wednesday 8 July</td>
</tr>
<tr>
<td>Elstree</td>
<td>Holiday Inn</td>
<td>Wednesday 9 September</td>
</tr>
<tr>
<td>Ashford</td>
<td>Ashford International Hotel</td>
<td>Wednesday 14 October</td>
</tr>
<tr>
<td>Sheffield</td>
<td>Doubletree by Hilton</td>
<td>Wednesday 18 November</td>
</tr>
<tr>
<td>Norwich</td>
<td>Norwich City Football Club</td>
<td>Wednesday 2 December</td>
</tr>
</tbody>
</table>

WHO SHOULD ATTEND?

- District nurses  
- Community nurses  
- Practice nurses  
- Nursing home and school nurses  
- Health visitors  
- Primary care trusts  
- Healthcare assistants  

To register for the JCN event of your choice and see the full day’s programme, go to:

[www.jcn.co.uk](http://www.jcn.co.uk) and follow the link from the home page, or email: angela@jcn.co.uk

---

‘I haven’t been to an event in a while, but this is so well-organised and up to date, and the speakers were very entertaining and informative.’

Shirley Wallington, community nurse

‘Absolutely brilliant day — so informative.’

Mary McGhee, practice nurse

‘Having recently moved into practice nursing from a hospital setting, it was really helpful to have the chance to meet the people who are producing and designing products at the JCN exhibition, rather than simply learning about what is available from hearsay.’

Jennifer Brown, practice nurse