Older people often experience venous eczema, which can be safely diagnosed, treated and managed by nurses in the community.

Diagnosing and treating venous eczema

In this article...

- Prevalence and causes of venous eczema
- Signs and symptoms of venous eczema
- How to manage people with venous eczema

Author

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Abstract


Venous eczema, a non-infectious inflammatory skin condition involving the lower legs, is thought to affect 20% of those aged 70 and over. Its prevalence is rising due to an ageing population and an increase in the number of obese people, who are at risk of venous disease. This article describes the pathophysiology of venous disease and outlines the principles of diagnosis and treatment of venous eczema. It stresses the role of nurses in diagnosing the condition, treating its symptoms and helping patients make lifestyle changes to improve their quality of life.

Venous eczema is common in older people and thought to affect 20% of those aged 70 and over (Oakley, 2014). It is a result of venous disease, which affects around 33% of adults (Grudzińska and Czuba, 2014). Venous disease can have a negative impact on quality of life and, if not well managed, can lead to venous eczema, infection and ulceration. Nurses are in a unique position to manage venous disease: they can diagnose and treat venous eczema and work with patients in order to maintain their health and wellbeing (National Institute for Health and Care Excellence, 2015a).

Venous disease: prevalence and risk factors

As a result of differing definitions, the prevalence of venous disease varies from one study to the other (Robertson et al, 2008). However, we know that the number of people with advanced venous disease is rising because of the increasing number of patients in groups at risk of venous disease, including older people (Chi and Raffetto, 2015; van Langevelde et al, 2010) and overweight and obese adults (Moody, 2014; Lumley et al, 2015).

Advanced venous disease can lead to venous ulceration: it is estimated that between 70,000 and 190,000 people in the UK have a leg ulcer (Posnett and Franks, 2007). Advanced venous disease and leg ulcers can negatively affect quality of life (Maddox, 2012; González-Consuegra and Verdú, 2011).

Venous eczema

Venous eczema is a non-infectious inflammatory condition that affects the skin of the lower legs (Gawkrodger, 2006). Different terms have been used to describe it, such as gravitational eczema (Patel et al, 2001a) and varicose eczema (Beldon, 2006).

The condition is part of a continuum of venous diseases that can be classified according to the Clinical Etiological

5 key points

1 Age and obesity are associated with an increased risk of venous disease
2 Deficient venous function can cause venous eczema, a non-infectious inflammatory skin condition of the lower legs
3 Treatments include removal of lichenified skin, emollient therapy, topical steroids, antibiotics and potassium permanganate soaks
4 Some patients may need to be referred for assessment of varicose veins
5 Patients may need to make lifestyle changes such as weight loss and increased exercise

FIG 1. VENOUS FUNCTION

- Normal venous function
- Venous insufficiency

Valve prevents backwards bloodflow

Faulty valve allows backwards bloodflow
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**BOX 1. NICE ADVICE ON EMOLLIENT PRESCRIBING**

- For mild to moderate dryness, use creams; while for moderate to severe dryness, use ointments.
- In weeping dermatitis, use creams not ointments as the latter are likely to slide off, which makes treatment unacceptably messy.
- Creams are better tolerated than ointments, but need to be applied more frequently and generously to have the same effect.
- Take into account the individual’s preference, determined by the product’s tolerability and convenience of use.
- Only a trial of treatment can determine whether the individual finds a product tolerable and convenient and regular reassessment is important.
- One size does not fit all: the choice of emollient should be guided by the severity of disease and area to be treated; more than one kind of product may be needed.
- The individual and the prescriber need to balance the effectiveness against the tolerability and convenience of a product.

* Adapted from National Institute for Health and Care Excellence (2013)

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**TABLE 1. CLASSIFICATION OF CHRONIC VENOUS DISORDERS**

<table>
<thead>
<tr>
<th>Stage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>C0</td>
<td>No visible or palpable signs of venous disease</td>
</tr>
<tr>
<td>C1</td>
<td>Telangiectasia (spider veins) or reticular veins</td>
</tr>
<tr>
<td>C2</td>
<td>Varicose veins, distinguished from reticular veins by a diameter of 3mm or more</td>
</tr>
<tr>
<td>C3</td>
<td>Oedema</td>
</tr>
<tr>
<td>C4</td>
<td>Changes in skin and subcutaneous tissue secondary to chronic venous disease, divided into two subclasses:</td>
</tr>
<tr>
<td></td>
<td>C4a: pigmentation or eczema</td>
</tr>
<tr>
<td></td>
<td>C4b: lipodermatosclerosis or atrophie blanche</td>
</tr>
<tr>
<td>C5</td>
<td>Healed venous ulcer</td>
</tr>
<tr>
<td>C6</td>
<td>Active venous ulcer</td>
</tr>
</tbody>
</table>

* Adapted from Eklöf et al (2004)

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Anatomical Pathological (CEAP) classification shown in Table 1 (Eklöf et al, 2004). The CEAP classification is used to determine the level and severity of venous disease. It can be used in conjunction with the Venous Clinical Severity Score (VCSS) to evaluate response to treatment and changes in disease severity over time (Vasquez et al, 2010).

Around 10% of people with varicose veins (C2 disease in the CEAP classification) develop C4 skin changes, which can include venous eczema (Marsden et al, 2013; Carpentier et al, 2004); around 3% of people with venous disease develop a venous ulcer (Bergan et al, 2006); and between 37% and 44% of those with an active venous ulcer (C6 disease) have venous eczema (Patel et al, 2001b).

**Pathophysiology**

Arteries take oxygenated blood from the heart to the rest of the body, and veins return de-oxygenated blood to the heart. The legs contain deep and superficial veins, which have valves that prevent the backflow of blood. Fig 1 shows how these valves ensure normal venous function, and how, when faulty, they can cause venous insufficiency.

The deep veins in the legs can be damaged by conditions that raise the pressure in the veins, such as pregnancy, obesity, abdominal tumours or direct injury (for example, deep vein thrombosis). High pressure can stretch and push a valve apart, causing it to work ineffectively. This leads to a further increase in pressure, which then damages the next valve, and so on.

Chronic venous hypertension (high pressure in the veins) causes blood to flow back into the thin-walled superficial veins. These become stretched and dilated, causing further backflow of blood, increased pressure in the superficial veins and capillary distension, which can lead to the development of varicose veins. Capillary distension then causes blood and plasma to leak into the tissues, which provokes an inflammatory reaction resulting in venous eczema and skin damage (National Eczema Society, 2013; NHS Choices, 2015a; Oakley, 2014; British Association of Dermatologists, 2013; Clinical Knowledge Summaries, 2012).

Another feature of venous disease is pigmentation changes, commonly referred to as staining. This is again caused by blood leaking from the capillaries into the tissues as a result of high venous pressure. The haemoglobin in the blood oxidises, haemosiderin deposition occurs and the skin on the lower legs becomes red or brown (see Fig 2). Staining is an important indicator of venous disease, but sometimes health professionals can misinterpret the colour change as being a sign of infection (Graham et al, 2003).

**Managing venous eczema**

**Diagnosis**

Venous eczema is diagnosed on the basis of clinical features (Middleton, 2007; Bergan et al, 2006). When eczema is present, the skin is usually dry and can be red, cracked, inflamed, itchy and scaly (NES, 2015; Oakley, 2014; BAD, 2013; CKS, 2012; Steen, 2007). Careful observation and the CEAP classification are helpful in diagnosis. If venous eczema has been diagnosed, the priority is to assess and treat symptoms. Table 2 summarises the principles of venous eczema management.

**Removing lichenified skin**

Chronic eczema causes skin changes, such as dryness, thickening, scaling and cracking (see Fig 3). The thickening of the stratum corneum (the outermost layer of the epidermis) is known as hyperkeratosis (All Wales Tissue Viability Nurse Forum, 2014) and can be removed by mechanical debridement but other newer, alternative methods include:

- An active debridement pad, Debrisoft (Activa Healthcare), which uses a fleece-like contact layer to mechanically remove debris, necrotic tissue, slough and exudate (Gray et al, 2011). It has been shown to be effective in 94% of cases in a

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**FIG 2. PIGMENT CHANGES IN VENOUS DISEASE**
group of 60 patients with chronic wounds that required debridement treated on three occasions approximately four days apart (Bahr et al., 2011);

» The pre-moistened single-use UCS wound debridement cloth (Meli UK), which can also be used to debride wounds and remove scales. It contains a mild cleansing agent that moistens and softens the skin, making debridement more effective (Downe, 2014). A single treatment can provide significant debridement and does not cause pain or discomfort (Downe, 2014).

Removing dry scales improves comfort and skin health; it also makes it easier for emollients to penetrate and hydrate the skin, therefore making emollient therapy more effective.

Maintaining skin health
In patients with venous eczema, emollient therapy combined with gentle skin cleansing is essential to maintain skin health. Emollients hydrate the skin, reduce scaling and reduce the risks of flare-ups and infection. They should be used at least once a day and more often if needed (Nazarko, 2010; Barron et al. 2007).

Emollients are prescribed as part of treatment plan and ongoing care. Prescribing decisions should be based on factors, such as skin condition and patient preferences. Box 1 lists advice from the National Institute for Health and Care Excellence (2013a) on emollient prescription.

It is important to prescribe a preparation that patients will find acceptable (NICE, 2015b, Dermatological Nursing Group, 2012), notably in terms of its lipid content and viscosity. Lotions have the lowest lipid content (and are therefore light and easily absorbed); creams have a higher lipid content; ointments have the highest lipid content.

Patients do not always apply enough emollient – or do not apply it often enough. Nurses should encourage them to apply sufficient emollient to hydrate the skin properly (Nazarko, 2015). If a patient still does not apply enough product, or relies on others to apply it, it can be helpful to prescribe ointments or paraffin-based products, as these moisturise for longer. Those who use paraffin-based emollients must be warned about the risk of falls – 50/50 liquid and soft paraffin can make floors and chairs slippery – and be advised not to smoke or come in contact with naked flames, as paraffin is highly flammable (BDNG, 2012).

Treating flare-ups
Steroids are an essential aspect of treatment in severe venous eczema. They are used with emollients to treat acute and subacute flare-ups. There is no evidence on whether the order of application affects efficacy, but steroids and emollients should be applied 30 minutes apart (Ladva, 2012).

Topical steroids are classified according to potency, and normally applied daily. Potent topical steroids, such as betamethasone valerate 0.1%, will flatten raised red patches of skin and treat inflammation (Oakley, 2014). They should be applied for at least two weeks, as stopping earlier can lead to recurrence of problems. Steroids are most effective when used in acute episodes.
of eczema; long-term use should be avoided, as they can cause the skin to thin. It is important that patients apply enough steroid cream to treat the skin effectively. Using the fingertip unit (FTU), Finlay et al (1989) developed a practical way to work out how much steroid cream to apply. One FTU is 0.5g of steroid cream and one application of cream on the lower leg of an adult is approximately three FTUs.

**Treating infected venous eczema**

If not managed well, venous eczema can lead to dry, thickened, scaly and cracked skin that can become infected. It is important to check patients for clinical features of systemic infection as they may need antimicrobial therapy. Hospital inpatients should be monitored using the National Early Warning Score (NEWS) and any clinical concerns escalated for further assessment (Royal College of Physicians, 2012).

Fig 4 shows a patient’s leg before and after 10 days of treatment with oral antibiotics, potassium permanganate soaks, topical steroids and emollients.

**Treating weeping eczema**

When the skin exudes fluid, it is known as ‘weeping eczema’ and indicates infection (NHS Choices, 2015b). Soaking the skin with potassium permanganate has astrin gent and antiseptic properties and will dry up with exudate (BAD, 2015; Ngan, 2013); however, recent research suggests this is not effective against *Staphylococcus aureus* (Leitch et al, 2015).

Potassium permanganate tablets (Perm- itabs) are used in the following manner:

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Line a bucket with a black plastic bag to reduce the risk of infection if the bucket is used for more than one patient;</td>
</tr>
<tr>
<td>2</td>
<td>Dissolve the tablets in warm water to obtain a 110,000 solution, using one tablet for every four litres of water;</td>
</tr>
<tr>
<td>3</td>
<td>Stir the water to ensure the tablets have fully dissolved;</td>
</tr>
<tr>
<td>4</td>
<td>Ask the patient to soak the affected leg in the bucket for 10 to 20 minutes.</td>
</tr>
</tbody>
</table>

The soaks should be done once or twice a day and stopped as soon as the skin has stopped weeping, usually after three to five days (Patel et al, 2001a). The skin will be stained brown but this wears off, while applying soft paraffin to the toenails before soaks will prevent toenails becoming stained.

Potassium permanganate should be stored carefully as ingestion can lead to local inflammation that blocks the airway, and perforation of the gastrointestinal tract; it can also cause death through toxicity and organ failure (NHS England, 2014). Between 2011 and 2014, there were 43 cases of accidental ingestion, one of which was fatal.

**Treating swollen legs**

People with venous eczema often have swollen, aching and/or throbbing legs because the pumping action in the veins is ineffective. Swelling also increases the risk of skin deterioration, particularly in patients awaiting treatment for varicose veins that led to venous eczema, and those in whom such treatment is unsuitable.

One method of reducing leg swelling is compression, using compression hosiery, or, if the swelling is severe, compression bandages. The latter can be used until the swelling settles, and compression stockings can be used thereafter to control symptoms in the longer term (Oakley, 2014). A standard assessment should be carried out to determine whether it is safe to apply compression: this includes using a hand-held Doppler to calculate the ankle brachial pressure index (Scottish Intercol legiate Guidelines Network, 2010). The assessment should be carried out by a trained and competent practitioner (Todd, 2016; Beldon, 2010). Compression should not be used if there are any contraindications, such as peripheral arterial disease.

Another method of reducing swelling is for patients to elevate the legs above hip level when possible, for example when watching television. Those with osteoarthritis might find sitting with their legs up uncomfortable, but can be advised to stretch out on a sofa and rest their feet on a pillow or the sofa’s arm. Patients should sleep with their legs elevated in an adjustable bed that can be raised at one end or with pillows or leg-elevating inserts under a mattress.

**Who to refer for secondary care**

Patients with primary or symptomatic recurrent varicose veins, lower-limb skin changes such as pigmentation or eczema, superficial vein thrombosis and suspected venous incompetence, venous ulcers or a healed venous leg ulcer should be referred to a vascular service for assessment and treatment (NICE, 2013b).

**Health promotion**

Nurses can work with patients who have venous disease to improve their health and wellbeing by giving them advice on weight loss, adequate exercise and posture. Walking and exercises, such as ankle dorsiflexion and plantar flexion increase venous return, which helps maintain skin health. Patients should avoid prolonged standing and sitting cross-legged, and should elevate their legs when possible (BAD, 2013). Nurses can also check whether patients have any issues, such as pain, that reduce their quality of life and have not been resolved with treatment.

**Conclusion**

The symptoms and complications of venous eczema have a negative effect on quality of life. Nurses are well placed to help patients by diagnosing venous eczema, assessing and treating symptoms, referring patients who need treatment for varicose veins, advising on lifestyle changes, and treating any other issues that reduce their quality of life.

**References**


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debridement product. Wounds UK; 7: 3, 42-46.

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