

SKIN CARE: ECZEMA AND DERMATITIS OF THE LOWER LEGS

Eczema is frequently seen in patients with venous leg ulcers. This article aims to explain the reasons why eczema occurs in this group of patients and offers advice on assessment and management of this condition.

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Eczema is a type of inflammation of the skin, which may be caused by a number of external or internal factors. The words eczema (from the Greek meaning 'to boil over') and dermatitis are synonymous, therefore, atopic eczema is the same as atopic dermatitis and venous dermatitis is the same as venous eczema.

The exact prevalence of eczema is unknown but it is thought to account for 20% of all patients visiting their GP with a skin condition (Hunter et al, 1995).

Symptoms

The principal symptom of eczema is itching. The clinical signs depend on its aetiology, site and duration, but on examination of the skin a clinician would usually expect to see erythema (redness), oedema, papules, vesicles and exudate.

An acute episode of eczema will have all of these features. In chronic eczema, however, oedema may not be so prominent

but there may be a thickening of the epidermis, known as lichenification. A common feature in eczema of the hands and feet is the formation of painful fissures in the skin.

Other skin changes might include scratch marks where the patient has tried to relieve itching. Scratching can breach the skin's surface and can lead to secondary bacterial infection.

Classification

There is still a great deal to learn about the aetiology of certain types of eczema, however, based on current understanding eczema is either classified as endogenous (due to internal or constitutional factors) or exogenous (due to agents in contact with the skin). *Table 1* lists the classifications of eczema.

Eczema associated with venous leg ulcers

Patients with venous leg problems frequently develop eczema. The types of eczema associated with venous leg ulcers are known as:

- ▶ Venous dermatitis (also known as gravitational eczema, venous stasis eczema and varicose eczema)
- ▶ Contact dermatitis (irritant and/or allergic).

Some patients with venous return problems will have both types.

Venous dermatitis

The exact cause of venous dermatitis in venous leg ulcer patients is poorly understood. It has been suggested that a reduced supply of oxygen and nutrition to the tissue of the

Table 1.

Classification of eczema

Exogenous	Endogenous
Contact irritant	Atopic eczema (has a genetic basis)
Contact allergic	Seborrhoeic (affects the sebum-gland rich areas of skin)
Photosensitivity	Discoid (distinct 'coin shaped' discs of eczema)
	Venous dermatitis (due to chronic venous insufficiency)
	Pompholyx (blistering restricted to the hands and feet)

Table 2.

Common leg ulcer allergens

Allergens	Avoidance
Fragrances	Use fragrance-free skin cleansing products and topical treatments
Topical antibiotics	These should not be used in people with leg ulcers as they are more susceptible to allergic reactions
Preservatives	Use ointment-based products and avoid creams and lotions
Rubber	Use latex-free gloves, bandages and stockings

lower limbs may be responsible. This poor venous supply may be the result of the formation of fibrin cuffs around the capillaries (in hypertension the capillary walls can stretch, opening the pores and allowing a protein called fibrinogen to leak into the interstitial areas. The fibrinogen turns into fibrin, which gathers around the capillary walls in bands called cuffs) (Romanelli and Romanelli, 2007).

Venous dermatitis develops in patients who already have a degree of venous hypertension. Signs of venous hypertension include:

- ▶▶ Brown hyperpigmentation
- ▶▶ Lipodermatosclerosis (condition that affects the skin above the ankle resulting in chronic venous insufficiency)
- ▶▶ Ankle flare
- ▶▶ Atrophy blanche (where the skin remains white after pressure has been applied) with or without ulceration.

Venous dermatitis is most often seen just above the malleoli (the bony prominence on either side of the ankle) but can spread up the legs. The skin is usually dry, flaky and erythematous, and the patient

will generally experience itching and irritation.

Irritant dermatitis

When the skin has an impaired epidermal barrier, in this case due to venous dermatitis, irritant dermatitis may also develop.

External agents (any individual can be irritated by a range of substances) can penetrate the damaged skin and an inflammatory reaction may subsequently occur. The patient affected by these irritants will exhibit symptoms including itch, burning, stinging and pain.

Allergic contact dermatitis

Allergic contact dermatitis is a cell-mediated hypersensitivity, where the first contact with a damaging substance (*Table 2*) causes no immediate problem.

However, over a period of time the allergen entering the skin causes an immune response and after repeated exposure an inflammatory eczematous reaction will occur causing the skin to become erythematous and itchy (*Figure 1*).

Allergic contact dermatitis is more common in leg ulcer patients than the general population as venous insufficiency causes a disrupted epidermal barrier making the skin more susceptible to contact sensitivity and allergic reactions (Barron et al, 2007).

In a study that examined the frequency and nature of allergic contact dermatitis in venous leg ulcer patients, Tavadia et al (2003) found that 68% of the patients returned positive patch tests (indicating an allergic reaction). The most common allergens in venous leg ulceration, and suggestions on avoidance, are listed in *Table 2*.

Investigations

It can be difficult to differentiate between irritant and contact dermatitis. However, along with detailed history taking, patch testing can help determine if a true allergy is present.



Figure 1. Allergic contact dermatitis.

Patch testing

If contact dermatitis to a particular substance is suspected a patch test should be performed. In this process possible allergens are diluted in suitable vehicles (bases). The test materials are placed in small discs and applied under occlusion (applied under a tape) to the skin, usually on the upper back, to allow the allergen to penetrate.

The discs are left in place for 48 hours and then removed (*Figure 2*). The patient will have a final examination at either 24 or 48 hours post removal where the clinician will check for the degree of erythema, oedema and vesicle formation. All observations must be accurately recorded.

When clinicians refer patients for a patch test it is important they also supply a detailed history, including information on any dressing, bandage or topical treatment it is suspected the patient may be allergic to. This will assist the dermatologist in making a diagnosis as he or she can add the suspected allergen to the patch test series.

The dermatology clinician will advise the patient on how to avoid particular allergen(s). Information sheets should also be provided to the patient, any carers and the responsible GP/nurse so that everyone involved is aware of what substances need to be avoided.

It is essential to exclude any irritants or allergens, such as latex gloves, from the treatment plan. Once the allergy has



Figure 2. A patch test area after removal of the discs from a patient's upper back.

been identified, the care plan and case notes should clearly identify any irritants/allergens that should be avoided in subsequent episodes of care. Failure to keep this information readily available may result in the patient being further exposed to harmful allergens (Cameron, 2008).

Assessment

A detailed assessment will include a full leg ulcer assessment following local or national guidelines. If the patient has any known or suspected allergies these should be recorded. The clinician must closely examine the patient's leg and note the extent of any eczema, for example:

- ▶▶ Is the area clearly defined? (Consider a contact dermatitis) or widespread (consider venous dermatitis)
- ▶▶ If the leg is itchy (with or without stinging, burning and pain) this should be recorded.

Cellulitis and dermatitis can look

similar, however, if the leg is hot and tender or if the patient is pyrexic (has an elevated temperature) and complains of flu-like symptoms, a diagnosis of cellulitis should be considered.

Treatment

In venous dermatitis, treatment of venous hypertension/venous ulceration by compression is as important as applying topical treatment for the dermatitis. Compression bandages are typically the treatment of choice for venous ulceration as they aid venous return. A full examination, including a vascular assessment, should be carried out before compression bandages are applied (Scottish Intercollegiate Guidelines Network [SIGN], 2010). In addition to compression bandaging, patients should be advised to exercise if possible and elevate their legs when sitting to further aid venous return and relieve venous hypertension.

If the clinician suspects allergic contact dermatitis, the patient should be referred

to a dermatologist for patch testing. Treatment is based on identification and avoidance of the identified allergen(s). Whilst patients are awaiting a dermatology appointment, it is good practice to eliminate potential allergens and keep the treatment regimen simple. This would include avoiding latex (gloves and bandages/stockings); using a simple low adherent dressing; and use of an ointment-based emollient. A moderately potent topical steroid ointment may also be required to relieve the symptoms.

Emollients and topical steroids

The main topical treatments for the eczema itself are emollients and topical steroids. Emollients are a key element in combating dry skin conditions and should be gently smoothed onto the skin in a downward motion following the direction of hair growth as this will reduce the risk of blocking the hair follicles (folliculitis).

Topical steroids are extremely useful in inflammatory skin conditions such as eczema because they have an anti-inflammatory, immunosuppressive and vasoconstrictive effect. They are classified according to potency as follows:

- ▶▶ Weak
- ▶▶ Moderately potent
- ▶▶ Potent
- ▶▶ Very potent.

The choice of potency will depend on the severity of the eczema. As a general rule the weakest possible steroid that is effective should be used. A useful guide to using the correct amount of steroid is the finger tip unit (FTU) guide. One FTU is the amount of

ointment squeezed from the tube (with a 5mm diameter), along the index finger to the first joint. This amount will cover the area of two palms on the body.

When a long-term topical steroid is required for a patient with chronic eczema, a moderately potent steroid would be appropriate.

Skin care

Maintenance of skin integrity is important and frequent reassessment should be carried out. Cleansing of the skin should be kept simple. If possible, the leg should be soaked in a clean (plastic-lined) bucket of warm water at each treatment. The skin should then be gently patted dry and, if it can be done easily, any dry scale removed.

Conclusion

Knowledge of skin anatomy and physiology is essential in order to better understand the dermatological changes associated with leg ulcers. If clinicians suspect the presence of allergic contact dermatitis, they should always seek to refer patients to a dermatologist or dermatology department.

Also, until a clinician has a definitive diagnosis of contact

dermatitis it is also crucial to remove potential allergens from the patient's treatment and immediate environment. **WE**

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Glossary

Allergens	Substances causing allergic reactions
Emollients	Soap substitutes, e.g. bath oils and moisturisers
Hyperpigmentation	Brown discolouration of the skin due to leakage of red blood cells into the tissue
Lipodermatosclerosis	Hyperpigmentation and induration due to leakage of blood macromolecules into the tissue
Papules	Any raised lesion or scaly, crusted or macerated surface larger than 1cm
Vesicles	Any fluid-filled lesions larger than 1cm