Leg ulcers: confusion over diagnosis and treatment leads to problems

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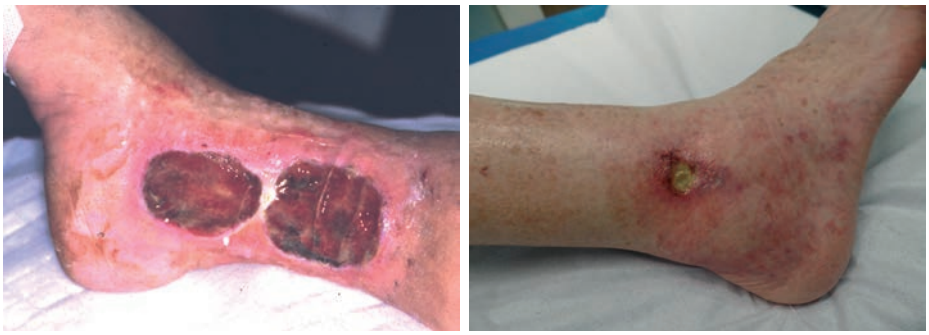
LEG ULCERATION is a common medical problem and diagnostic difficulty may lead to inappropriate treatment. For example, a venous ulcer must be treated with compression bandaging, but an arterial ulcer must not be compressed. Disastrous outcomes may result.

Antibiotics are mandatory in the management of diabetic foot ulcers but useless in venous ulceration. I have advised in several cases where misdiagnosis has led to poor outcomes with inappropriate treatment.



Venous leg ulcers: the diagnosis was confirmed by ultrasound imaging

Causes of leg ulceration

The more frequent causes of leg ulceration, which frequently coexist, are:

- Venous disease such as varicose veins or previous deep vein thrombosis
- Arterial disease due to blocked arteries
- Diabetes – arising from damage to peripheral nerves from diabetes
- Trauma – injuries to the leg
- Rheumatoid arthritis causing 'vasculitis' in the skin, which damages tiny blood vessels
- Cancer of the skin

Each of these conditions has specific tests which can be used to identify the problem, so the diagnosis can be made and appropriate treatment instigated.

Diagnosis – identifying the cause of the ulcer

Venous disease is the most common cause of leg ulcers. That type of ulcer usually occurs at the ankle or in the lower calf, but may not be accompanied by visible varicose veins. Rheumatoid disease and cancer of the skin may also cause ulcers in the same region.

Arterial disease is common in elderly patients and usually produces toe or foot ulcers, which are painful. Diabetes also produces foot ulcers, which are often not painful due to the presence of peripheral neuropathy.

Traumatic ulcers frequently occur on the shin, a region commonly affected by injuries – especially in more elderly patients.

Methods of investigation

The most important diagnosis to identify in a patient with a leg ulcer is lower limb arterial disease. When the arteries become blocked due to atherosclerosis of arteries – perhaps as a result of a smoking history – ulceration of the foot and toe may occur. That condition is correctly referred to as 'limb-threatening ischaemia'. Treatment of the condition cannot be deferred and urgent action to improve blood flow is required. Delayed treatment can lead to rapid advance of the ulceration and the need for limb amputation.

The most simple method of investigation is to measure the ankle blood pressure using a Doppler ultrasound probe – a system widely available in hospitals and GP surgeries. The ankle blood pressure should be the same as that in the arm, or only slightly less. Large reductions in blood pressure indicate that lower limb arterial disease is present and urgent referral to a vascular surgeon is required.

Venous disease is a common cause of leg ulceration and normally arises in the region of the ankle. That is an important diagnosis to investigate where the arteries appear to be normal. NICE Clinical Guideline 168 recommends that patients with leg ulcers are referred to a vascular service for investigation of the venous and arterial systems. That is done with ultrasound imaging, which can identify the cause of a venous ulcer as well as showing the location of blocked arteries.

Patients with long-standing leg ulceration can achieve ulcer healing in a few months once varicose veins are treated using a modern minimally invasive technique. Compression treatment with stockings can be advised where surgical treatment is infeasible.

Diabetic ulcers should be suspected where a foot ulcer appears in a known diabetic patient. A new ulcer should be an indication for urgent referral – within 24 hours – to the local diabetic foot multidisciplinary team, where diabetologists, vascular surgeons, podiatrists and nurses can determine the best strategy for management. Detailed advice on the management of diabetic foot ulcers is contained in NICE Guideline 19. Delayed management of a diabetic foot ulcer may lead to rapid spread of severe infection in the foot, leading to the need for a major limb amputation.

Cancer of the skin is a less common cause of leg ulceration, but should be suspected where a 'venous ulcer' fails to heal in response to appropriate management, or where the clinical appearances are not consistent with those of a venous ulcer. Delayed treatment may lead to the need for extensive surgery to remove the ulcer and this may include limb amputation.

The management of any leg ulcer deserves investigation with appropriate tests, so that the correct treatment can be started as soon as possible. Failure to arrange appropriate investigations expediently may comprise substandard treatment and lead to adverse outcomes, including the need for amputation of the limb.

Clinical problems leading to litigation

The most common problem leading to litigation in my experience is delayed identification of the diagnosis. It appears to be common practice for a leg or foot wound presenting to a patent's GP to receive wound care. While that is appropriate, unless the cause of the leg ulcer is immediately obvious, continued treatment with wound dressings over weeks or months is not appropriate without establishing the diagnosis.

I have advised in cases where limb ischaemia has been the cause of leg and foot ulceration and wound dressings have continued while the limb slowly deteriorated to the point where the only possible treatment was limb amputation.

In another case, a compression bandage was applied to a limb thought to have a venous ulcer without evaluating the arterial system first using a Doppler ultrasound probe. The blood flow to much of

the skin of the leg was cut off by this treatment leading to extensive gangrene and loss of the limb.

Skin cancer giving rise to leg ulcers is a less common problem, but often challenges medical services in arriving at the correct diagnosis, which may not be suspected initially. I have seen a patient who had a squamous cell carcinoma of the leg arising from the skin managed by compression bandaging over a 20-year period. Fortunately, the tumour was readily excised. In another case, the diagnosis was established after a protracted period of treatment and limited investigations. Amputation of the limb was required to remove the tumour.

Diabetic patients with peripheral neuropathy commonly develop foot ulcers. Treated correctly, they will usually heal. However, lower limb arterial disease may coexist with neuropathy, so immediate investigation and treatment of arterial disease is the standard of care in such patients. Even so, the loss of one or more toes may be inevitable in such cases and proving causation may be difficult where the only adverse outcome was loss of a toe.

Litigation in diabetic foot cases may pose difficulty because the arterial disease that arises lies in the vessels furthest down the leg and affects blood vessels which are beyond the limits of modern vascular surgery to repair. The defendant may assert that the limb would always have been lost, if not immediately then after a limited number of months.

In some instances readily treated arterial disease is present further up the leg and must be treated expediently to achieve a successful outcome, avoiding amputation. If investigation and management of the lower limb vascular system was delayed resulting in amputation, causation may be proven in such cases.

In conclusion, leg ulceration is a common problem in clinical practice and achieving a good outcome requires that the correct diagnosis is identified by appropriate investigations. Where an adverse outcome, such as limb amputation, arises following a delay in diagnosis or inadequate investigation of the problem, a claimant may have a successful case. ❑