

# Venous leg ulceration: a look back on changes in practice, treatments and patients



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**F**our-layer bandaging has been in existence for the past 25 years, and for the majority of this time compression bandaging has been considered the 'gold standard' treatment for venous leg ulceration. Compression bandaging has revolutionised care and before it was introduced there was very little understanding of leg ulceration in the nursing world. For the most severe ulcers, the only treatment option available was to admit patients to hospital for bed rest. This was never ideal and only provided short-term benefits as ulcers would often reoccur after the patient was discharged. The management of leg ulceration has improved significantly and this article outlines some of the changes that have occurred in compression therapy, the nursing profession and the patient population since the 1980s.

## COMPRESSION FROM ANCIENT EGYPT TO 1980s LONDON

Compression therapy *per se* is not new. Ancient Egyptians described using bandages made of non-extensible fabric to wrap around chronic wounds on legs and in 400BC Hippocrates, who himself had a leg ulcer, wrote 'in the case of an ulcer, it is not expedient to stand, especially if the ulcer is situated on the leg' (Sarkar and Ballantyne, 2000). However, it was not until the late 1980s that the first four-layer compression bandage system was designed at Charing Cross Hospital, London. Interestingly, Europe had been using short-stretch bandaging for years before this but it had not been adopted in the UK.

By the early 1990s, the Charing Cross bandage system was being routinely used at the hospital. To mark its significance, Prince Charles visited the annual Charing Cross symposium in 1990 and witnessed the application of the Charing Cross four-layer bandage. Unlike many clinical developments in wound care, the four-layer bandage system was designed by a group of clinicians rather than by a commercial company and it was based on the underlying concept that sustained high level compression could reverse

underlying abnormal venous pressures (Moffatt, 2004). News of the benefits of the Charing Cross system spread quickly, with many vascular consultants learning how to apply compression bandages, recognising it as an important skill.

## AN EXPANDING MARKET FOR A CHANGING PROFESSION

The mass marketing of compression bandage systems started in the mid-1990s. Four-layer bandaging seemed the ideal solution to the problems of treating leg ulcers, such as high exudate levels and unusual limb shape and sizes. Possibly its most important advantage was that it only needed weekly dressing changes, significantly reducing nursing time.

Although considered the gold standard, compression bandaging does have its negative side; patients can find it uncomfortable, hot and restrictive. It also limits choice of clothes, footwear and the ability to bathe or shower. Even though clinicians have always been mindful of these negative factors, they have always 'sold' the bandages to the patient as the best solution to venous ulceration, often spending hours negotiating to find a glimmer of willingness to give compression a try.

Over the past decade, alternatives to traditional four-component bandages have been created. There are now options of two-component compression bandage kits, short-stretch bandages, compression hosiery kits and leg wraps; all designed to provide the 40mmHg pressure at the ankle required to reduce venous hypertension. This increased choice for practitioners provides great benefits when trying to find solutions for patients who cannot tolerate four-layer bandaging. The advantages of options such as compression hosiery kits or leg wraps is the possibility for patients to self-care, something that was considered impossible for many years. Treatments continue to evolve and future management could involve the use of progressive compression rather than

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- the current graduated compression or even electrical stimulation devices to mimic the action of compression bandaging.
- The role of the nurse has changed substantially over the past 10–20 years and nursing has become a more independent, autonomous profession. Holistic assessment and diagnosis of underlying diseases and conditions was once seen as the doctor's realm but nurses of the 21st century diagnose, prescribe and manage complex patients, refer patients for investigations and even list patients for interventions.
- Nurse-led diagnosis began in the wound care realm using nurses' skills and knowledge to undertake in-depth assessment of leg ulcers to determine the underlying pathophysiology and recommend appropriate treatment. The majority of patients with leg ulceration are managed successfully in the community. However, when asked, many community staff fail to recognise the fact that they are making a diagnosis. They still associate diagnoses with advanced nurse practitioners or doctors and often fail to recognise the importance of their own decisions. Rather alarmingly, the numbers of qualified district nurses has fallen by over 40% in the past decade (Queens Nursing Institute, 2013) and only in time will the impact of this huge reduction in skilled practitioners be realised.

## THE CHANGING PATIENT POPULATION

In parallel to the changes in compression and the nursing profession, similar changes have been seen in the patient population. In 1970, the bioethics movement in the US started a wave of changes that saw medicine move from a paternalistic model to one with a greater emphasis on patient autonomy. Patients are now more empowered. They appear more involved in their care, seem more knowledgeable and more engaged with services, asking questions and weighing up the pros and cons of treatment options. As the current generation of technology-savvy people gets older, the trend to research a condition on the internet, finding best practice or alternative solutions, will grow, making patients more informed but potentially more challenging to treat. Despite this, more than 60% of the current population has a negative or fatalistic attitude towards their own health, particularly in more disadvantaged groups. If this current attitude continues, the rates of avoidable illness is likely to grow (Office for National Statistics, 2011).

People born in the baby boom years will reach their late eighties by 2035 and are more likely to reach that age than any previous generation. From 2012–32, the number of 65–84 year olds is set to increase by 39%, plus there will be a 106% increase in people aged over 85 (ONS, 2011). Venous ulceration affects 1% of the general adult population, but it affects 3.6% of people aged over 65 (Agale, 2013) and the ageing population will result in increased numbers of patients with venous ulceration.

Current lifestyles present a serious threat to health and 66% of adults do not meet recommended minimum activity levels, 26% are obese and 21% smoke (ONS, 2011). Although reported levels of physical activity are predicted to rise and smoking is declining, obesity continues to rise. Adult obesity increased from 15% in 1993 to 26% in 2010 (ONS, 2011) and this is estimated to rise to 37% of men and 34% of women by 2020. In 2035 it is predicted that 40% of women and 46% of men will be obese (Wang et al, 2011).

Carrying excess body weight puts increased strain on the heart, lymphatic and venous system and increases the risk of lower limb oedema (Lawrance, 2014). Obese patients are at increased risk of lymphoedema (Greene, 2015) and patients with lymphoedema have a higher incidence of cellulitis, broken skin and venous ulceration (Gethin et al, 2011). Obesity can restrict how patients can be treated. Management of patients who are obese can be difficult due to the risk of manual handling, lack of specialist equipment, difficulties with bandaging and challenges of limb sizes/shapes. Treatment of ulcers in obese patients can take longer to heal and there can be difficulties with bandages slipping or creasing (Lawrance, 2014). Obesity and the increased risk of chronic disease reduces life expectancy by ten years and is estimated to cost the NHS £4.2 billion per year (ONS, 2011). The increased prevalence of obesity and the associated health problems and costs will continue to be a significant challenge in future years.

## CONCLUSION

The past 30 years has seen a tremendous improvement in the treatment of venous leg ulcers. Compression bandages revolutionised care and they continue to be the cornerstone treatment for venous ulceration. Patients and nurses have also changed significantly and the goal to provide high quality care for all remains a constant challenge. 