Short stretch bandaging: a case history

This is a case history of the successful treatment of a mixed aetiology ulcer. The patient, Mr F, is a married 83-year-old gentleman who leads a very active lifestyle. He is a type 2 diabetic, with known hypertension and a history of deep vein thrombosis in his right leg.

Mr F was referred to the district nurses in September 2000, following varicose vein surgery to his right leg. Unfortunately, his avulsion sites failed to heal and Mr F developed a 0.5 cm² ulcer over his right shin (Figure 1).

Despite numerous prescribed dressing regimes, the ulcer failed to heal. In January 2001, Mr F was referred to the Vascular Nurse Specialist for further vascular investigations. A comprehensive holistic leg ulcer assessment was performed in conjunction with an Ankle Brachial Pressure Index. The Ankle Brachial Pressure Index was 1.05, within the normal range for compression therapy. However, caution should always be used when interpreting the results in a diabetic patient, due to calcification of the tunica media. Arterial waveforms supplemented the Ankle Brachial Pressure Index, confirming calcification of the peripheral vessels (Figure 2). Mr F had asymptomatic peripheral vascular disease and thus the reading was inaccurate.

Examination and assessment indicated that Mr F had a mixed aetiology ulcer, with a predominant venous component. A multidisciplinary approach was adopted involving the leg ulcer support nurse and community leg ulcer clinics. After discussion with the patient, a trial of cohesive short stretch bandage “Actico” was agreed.

Short stretch bandages offer low resting pressures and high pressures when the patient is active. Their construction, application and durability in comparison with other treatment regimes have been shown to be advantageous in the treatment of mixed aetiology ulcers.

The ulcer on Mr F’s shin was dressed with a simple low adherent dressing. Extra wool was applied over the bony prominences to protect from pressure damage. The Actico bandage was then applied at full stretch with a 50% overlap using a spiral technique from toe to knee.

Mr F’s ulcer healed within seven weeks of commencing treatment. In order to prevent recurrences, Mr F was fitted with an Actico class I compression stocking and reviewed on a three-monthly basis.

This case study demonstrates the importance of a multidisciplinary team approach to leg ulcer care and how Actico cohesive bandages can be used effectively to treat mixed aetiology ulcers.

References
will lessen the chances of the flap taking. Often too the steristrips will be dislodged in the presence of exudate, or blood can dry and harden around them making removal difficult (Fig. 4). As with all adhesive dressings steristrips should be removed with care to avoid stripping of the epidermis from the dermis.

**PRACTICE POINT**
A zinc paste bandage applied spirally toe to knee encloses the leg in a rigid cast as it dries and shrinks (Eagle 1990) and any swelling caused by inflammation may result in further tightening of the bandage with tissue necrosis. If a zinc paste bandage is used it should be applied in a pleated fashion allowing for expansion of tissue.

**LENGTH OF TIME TO DRESSING CHANGE**
Traditionally the first dressing change takes place at day 10 as it is thought that the flap will take best if not disturbed. There are many dangers around this practice. In a case control study of patients with superficial skin tears Meuleneire (2002), using Vepitex dressings, demonstrated an impressive 83% healing rate at 8 days in patients whose dressing was changed daily for 3 days and then alternate days. Thirty two per cent of the 88 skin tears were in the lower extremities. In the 17% with flap failure medical help had been sought after 8 hours resulting in flap necrosis and increasing the risk of infection. However, Meuleneire did not report what percentage of lower limb skin tears healed in 8 days or what proportion of failed flaps were in the lower limb.

**PRACTICE POINT**
More frequent dressing changes would allow for early detection of flap failure with subsequent appropriate interventions.

**ROLE OF COMPRESSION BANDAGING**
Many studies exploring the management of patients with pre-tibial lacerations, leg ulcers and venous eczema (Eagle 1999; Williams 1999). Zinc is thought to promote wound healing by reducing free radical activity, improving cell fluids, inhibiting bacterial growth and strengthening collagen which is already depleted in the older person (Dickerson 1993). Since 20% of zinc is stored in the skin it could be argued that any skin loss will result in zinc depletion though in the case of pre-tibial lacerations the skin loss is usually minimal. Dearden et al (2001) suggest that zinc paste bandages are useful to anchor the flap while Stacey et al (1997) suggest that a zinc paste bandage applied spirally from toe to knee acts as an inelastic form of compression aiding venous return and reducing oedema. Overall there is no firm evidence for the use of zinc paste bandages for this type of injury and their expense will increase costs without any proven benefit.

**PRACTICE POINT**
A skin graft would have speeded up healing but created a second wound from the donor site. This procedure would have required hospitalisation and since donor sites can be slow to heal in this type of patient Mrs R would not agree to this alternative.

**CONCLUSION**
The goal of management in pre-tibial skin tears is to restore the defect and achieve healing as quickly as possible. This will reduce the risk of infection and minimise disruption to the patient's daily routine. Tetanus status should also be considered especially in contaminated wounds.

Practitioners are accountable for their actions and need to be cautious when considering treatment options in this vulnerable group of patients. The use of sutures, adherent or tule dressings can compromise flap take while early and appropriate intervention will enhance it. More frequent dressing changes are required in the immediate post injury period and in suitable patients graduated compression will improve venous return and lessen tissue oedema enhancing healing.

Finally, where patients present frequently with pre-tibial skin tears it is worth assessing their environment for risk factors such as cluttered surroundings, objects with sharp edges or corners. Sometimes falling sight, poor lighting or difficulty with balance can be an issue. The wearing of thick stockings or trousers can afford some protection. In the absence of significant arterial disease Class 1 below knee compression stockings will control oedema rendering the skin less vulnerable.

References

For a more detailed Reference list please e-mail: editor@n2n.co.uk