Some simple solutions to wound debridement

Although it can require a high level of training and skill, there are simple forms of debridement that care homes can use to help wounds heal. Sylvie Hampton explains why they are used and how.

These are things that can be simplified so that all nurses and carers, regardless of knowledge level, can follow the care pathway that will lead to a healed wound.

Wound debridement

Despite being a key aspect of wound healing, (Stephen-Haynes and Thompson, 2007) the concept of wound debridement is poorly understood. The word debridement is taken from the French débrière, or débrider, which means to remove adhesions. However, the modern definition is the removal of lacerated, devitalized, or contaminated tissue by various means. In other words, it means to clean the wound bed to ensure healthy tissue in preparation for healing (Hampton and Collins, 2003).

If the wound is clean and healthy, then by definition, it will be healing. It then only requires protection, as the body will proceed with the healing.

Types of debridement

If correct compression garments and appropriate dressings are applied, then the wound will debride itself within a week through autolysis. Autolytic debridement, or autolysis, uses the body’s own enzymes and moisture to re-hydrate, soften and liquefy hard dead tissue and slough. This debris is then cleared either by the dressing or by the natural defenses of the body, which naturally remove harmful wastes. It is no surprise that autolytic debridement is frequently used as an initial debridement method (Milne, et al 2010) and is the recommended method of this article. Non-autolytic debridement can help to start up autolysis and decreases the chance of infection. A number of methods may be used.

Table 1 gives a simplified choice of the debridement methods available to assist readers to select dressings that will achieve the required outcomes, despite the many other excellent products that achieve the same results.

Leg ulcer debridement

Assessment

Leg ulcers are complex to treat so, for the purposes of this article, we will assume that a nurse qualified in this assessment has undertaken a Doppler assessment. That nurse would then decide whether to use compression therapy or to refer to a specialist for further assessment of the underlying pathology. The tissue viability nurse may debride the wound or instruct care home staff to do so.
Pain
Leg ulcers, both venous and arterial, can be extremely painful. Therefore, anyone undertaking wound debridement in any of the above forms, should take the pain into consideration before deciding on the method. If there is pain in a wound, it is unlikely to be due to the debridement unless the tissue is sharp debrided. Once the wound is clean and healing, the pain is likely to reduce. The two dressings on the market at present that do deal with general and continuous pain are ActiFormCool and Biatain IBU. The use of these could be considered prior to inviting the GP to prescribe analgesia. The use of these could be considered prior to inviting the GP to prescribe analgesia.

Slough
It is common to find slough, which is a layer or mass of dead tissue separated from surrounding living tissue. Slough is a breeding ground for bacteria. Removal of slough, also termed wound cleansing, debridement or wound bed preparation, will leave a clean healthy wound bed that can then progress toward healing. Slough can generally be easily debrided by using honey or wet dressings. Slough in leg ulcers comes in different forms: soft and easily removed, firm and tenacious or fibrous, see Figures 1–4.

Slough can be a natural occurrence and is not the result of clinical infection but can cause it if not removed. Although slough is unlikely to make the patient ill, it can delay healing, cause a malodour and can increase pain (Hampton and Collins, 2003). Necrotic tissue (dead tissue that is not separated from surrounding living tissue) on a leg ulcer is generally due to a clinical infection, where the bacteria has entered the patient and is making them feel unwell. This will require referral to the resident’s GP. Clinical infection will have signs of:

- Increasing redness in the tissues surrounding the wound
- Increase in pain
- Increase in odour
- Subject will feel unwell
- Increase in fluid loss

Debrisoft debridement
Leg ulcers with all types of slough can be washed in a bucket of tap water as long as the bucket is lined with a polythene bag (even a bin liner) to ensure hygiene. The leg is soaked in the water for no longer than 5 minutes. Using a Debrisoft cloth (by Activa®) will clean/debride the wound and the moist dressing will continue to soften the slough to ensure further reduction of slough at the following leg soaks.

The Eastbourne Wound Healing Centre always washes legs in lined buckets with tap water at 40°C and add tea tree and lavender oils. These essential oils provide a pleasant aroma, a feeling of wellbeing and may reduce bacterial contamination (Kasper et al, 2010).

Debrisoft is used to cleanse the wound and surrounding tissue gently. Gauze is never used as it is too harsh and may damage the fragile newly formed blood vessels. Neither is irrigation used, as the pressure from the fluid may redistribute the bacterial load or even force it into the tissues.

Wound debridement continues to be a challenging issue in long-term care. In addition to a frail population, the skill level of staff in conjunction with scope of practice issues and the lack of availability of a skilled tissue viability nurse on a daily basis add to the complexity in treatment decision making.

Simple forms of debridement for care homes
All of the following methods can be undertaken by nursing home staff, although maggot therapy is a very specialized product to order and apply. Only a qualified nurse deemed competent in maggot therapy should be responsible.

- ActiFormCool (by Activa®): a sheet hydrogel that is simple to apply, reduces pain in painful wounds (Hampton 1998) and rehydrates necrotic tissue. This is a sheet dressing, which will not donate water to a wet wound and is capable of absorbing many times its own weight in fluid (Figures 5 and 6). Amorphous hydrogels are also excellent for rehydrating necrotic tissue but will donate water to wet wounds and increase the amount of discharge.

- Algivon manuka honey (by Activon®): comes in the form of paste to ensure ease of application into cavities, etc or alternatively combined with alginate. All honey has the ability to reduce bacterial contamination in wounds

- L-Mesitran® Hydro: has a thin honey-hydrogel layer that is capable of absorbing several times its own weight in fluid
Table 1: Different methods of debridement

<table>
<thead>
<tr>
<th>Method</th>
<th>Description</th>
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<tr>
<td>Maggot therapy (Figure 8)</td>
<td>The mechanism of wound debridement by larvae includes the complete wound by continuous larval motion, secretion of proteolytic enzymes and antibacterial substances. Simple to use once training is given</td>
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<tr>
<td>Autolysis</td>
<td>Uses the body’s own enzymes and moisture to re-hydrate, soften and finally liquefy hard eschar (scar tissue) and slough to enable the body to remove it naturally. This is the simplest form of debridement using moist dressings and does not require training</td>
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<tr>
<td>Mechanical</td>
<td>MIST Therapy is low energy, low intensity ultrasound delivered through a saline mist to the wound bed. Requires training.</td>
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<tr>
<td>Mechanical</td>
<td>Versajet™ The Hydrosurgery System system uses a high velocity stream of sterile saline, which jets across the window of the handpiece, creating a localized vacuum that cuts and removes devitalised tissue and contaminants and irrigates the wound. Requires training.</td>
</tr>
<tr>
<td>Mechanical</td>
<td>Debriss (Activa®) A soft cloth with special fibres that effectively bind wound debris and lock it in. Very simple to use and does not require training. Debriss must be moistened before use.</td>
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<tr>
<td>Surgical</td>
<td>Undertaken by a skilled practitioner, trained and qualified to remove devitalised tissue. Requires training and supervision (Hampton, 1997).</td>
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<tr>
<td>Surgical</td>
<td>Undertaken by a surgeon in a sterile environment, such as an operating theatre.</td>
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<td>Enzymatic</td>
<td>Action is through denaturing and digesting proteins within the necrotic tissue. This method has largely gone out of favour following the Martin et al (1996) study, which demonstrated a faster debridement when Hy Jelly was used over Varidase.</td>
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- Maggot therapy: maggots are simple to use and often accepted by the patient but not by the nurse. However, maggots are now on prescription and come in the form of tea bags so there are no concerns with the handling and they are simple to apply to the wound.
- Debriss: extremely simple to use and would compliment the use of moist dressings as it cleanses the particles left by the dressing as well as necrotic tissue. Natural debridement, which occurs through the use of dressings, will take 3 to 10 days. Once the wound bed is clean, there should be a pink base and dark red ‘lumps’ which are loops of blood vessels.

The wound then needs protection only, so a simple foam dressing is adequate. Nevertheless, if compression is used, it must be continued for life and, even after closure, compression hosiery must still be worn.

Conclusion
The easiest form of debridement is autolysis. This is simply assisted through the use of appropriate moist dressings and competent cleansing/mechanical debridement in warm water. It does not require skill or knowledge and will achieve the required outcome.


Key points
- The terms debridement and wound cleansing can be used interchangeably.
- It is vital that leg ulcer patients or residents are assessed by a practitioner who is qualified to undertake Doppler assessment before wound treatment is considered.
- A dressing will provide the optimum wound healing environment. It cannot 'heal' a wound as only the body can do that, once the underlying pathology causing the wound has been corrected.
- Wound bed cleansing and reducing wound associated inflammation can be simplified so that all nurses and carers, regardless of knowledge level, can follow the care pathway that will lead to a healed wound.
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