TO WASH OR NOT TO WASH: WHAT'S THE SOLUTION FOR CHRONIC LEG ULCERS?

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There is confusion among community-based carers concerning the correct way in which the limbs of people with chronic leg ulceration should be cleaned. As a result some patients have not washed their lower limbs, or received nursing assistance to do so, for several years. This article discusses the use of tap water as a cleansing agent and makes suggestions for safe practice and the delivery of holistic, community-based treatment for patients living with leg ulceration.

Washing the lower limbs as part of leg ulcer management is still a controversial issue for many practitioners. There is an abundance of anecdotal evidence to show that many patients do not have their feet and legs washed during the whole cycle of their leg ulcer care. This anomaly often arises because patients are instructed not to get their leg ulcer wet and because practitioners are not familiar with best practice regarding this aspect of care.

Many use ritualistic techniques and do not refer to research findings to dictate their actions. Others simply avoid the issue altogether, leading to the wholly unacceptable situation that some patients are unable to maintain adequate levels of personal hygiene.

Leg ulcers can be unsightly and malodorous and patients living with a leg ulcer often experience

Figure 1. There is confusion surrounding the practice of washing the leg with tap water.

social stigma. If the patient is also provided with an inadequate level of personal hygiene care, problems such as these may be exacerbated leading the patient to feel even greater social isolation (Lindsay, 2005).

Practitioners who are managing leg ulcers in the community setting require a thorough understanding of holistic, evidence-based wound care. They must be able to make clinical and management decisions. They should possess a wide knowledge of skin treatments and dressing types. Their decisions should also take into account the current debate about the use of tap water to cleanse leg ulcers and surrounding tissues (*Figure 1*). Tap water is commonly used in the community to cleanse leg ulcers because it is readily available, efficient as a cleansing agent and is also cost-effective. There is, however, an unresolved debate about its use (Fernandez et al, 2002). This article aims to investigate the confusion surrounding washing the leg with tap water, and makes suggestions for safe practice and the delivery of holistic, community-based treatment for patients living with leg ulceration.

Rationale of holistic care

The holistic assessment of a leg ulcer is possibly the single most important factor affecting its healing. Holistic assessment of wounds is designed to engender patient-centred decision-making regarding treatment options. The practitioner must learn to see the ulcer and the factors contributing to it as interconnected. Before approaching the problem of the wound itself and the correct dressing to be used, many other issues must be addressed.

Factors that may influence wound healing should be considered even before the wound is examined. It is vital to determine the patient's own perception of the wound and its associated problems. Patients commonly feel that the ulcer is having a detrimental effect on their quality of life which may be caused by restricted mobility, chronic pain, excessive wound exudate and malodour.

These are the features of living with a leg ulcer that patients often see as the central problem, rather than the chronic nature of the wound itself. Therefore, management strategies should focus on psychosocial and physical factors affecting wound care, emphasising the social and psychological impact of living with a leg ulcer from the patient's perspective (Barrett and Teare, 2000; Teare and Barratt, 2002).

Within these strategies, consideration should be given to the impact that not being able to bathe has on wound healing and perceived quality of life. Being unable to maintain total personal hygiene has a direct impact on an individual's quality of life. Social isolation can only be increased if the patient feels that they are never fully clean, and any patient with a leg ulcer will testify that maintaining adequate levels of hygiene is a challenge when one is not permitted to sit in a bath or use a shower.

Tap water *versus* saline

It is the author's experience that some practitioners question whether the limbs should be washed as part of leg ulcer management. There is general concern that infection of the wound bed may occur from the use of tap water, resulting in delayed healing.

It is widely acknowledged that the majority of open wounds are colonised with bacteria; a status that does not affect wound healing. However, increased exposure to bacteria can result in the wound bioburden increasing and the wound tipping over into a critically colonised state. Such a scenario is more likely to occur through the use of poor infection control techniques, than exposure of the wound to tap water. One of the easiest and most important ways to prevent infection is to observe a correct hand-washing technique (Hampton and Collins, 2003).

It is important to acknowledge that there is an unresolved debate about the use of tap water to cleanse lower limbs affected by ulceration (Fernandez et al, 2002) and to encourage discussion regarding best practice techniques for the care of the patient living with a leg ulcer.

Various methods have been recommended for cleansing wounds. Normal saline has been the favoured cleansing agent as it is an isotonic solution that does not interfere with the healing process. Magson-Roberts (2006) in a literature review tried to ascertain whether tap water is a safe alternative to normal saline for wound cleansing within the community setting. Their findings,

Figures 2 and 3. A clean peri-wound area can be seen resulting from cleansing the wound, while the remainder of the limb has not been washed.

based on the literature available at the time, did not provide any definitive answers. The lack of documented evidence to support clinical practice goes some way to explain why nurses do not provide the service of limb washing, but are unable to give a clear and reasoned rationale for not doing so.

Many practitioners cite time constraints and infection control concerns as their rationale for not washing legs by immersing the affected limb in a lined bucket of tap water to clean the wound, remove exudate and dry skin. They will still, however, ritualistically clean the wound bed with normal saline solution when there is little evidence that this is a more effective alternative.

The current confused situation is not helped by the contradictory results of trials. Although evidence is very limited, one trial, which investigated acute rather than chronic wounds, suggested that the use of tap water to cleanse acute wounds actually reduces the rate at which bacteria multiply within the wound, but other trials have concluded that there is no difference in the infection and healing rates between wounds that were cleansed with tap water and those that were not (EBN Review, 2003).

It is the author's experience that cleansing the leg with tap water has many benefits for the patient. The procedure of washing a patient's leg is a therapeutic, non-invasive, holistic intervention designed to promote healing. The practitioner is, at the same time, communicating with the patient using touch. Simply washing a patient's leg can create a sense of normality and well-being. The practitioner can go a step further by enabling patients to soak their legs in a lined bucket of warm water. It has been the author's experience that this can bring huge psychological benefits for patients who have not been given the opportunity to wash their feet and legs for many years.

Skin and foot care

For the patient living with a leg ulcer, skin care management involves a few basic steps. Good hygiene can greatly improve the clinical condition and quality of life of those with leg ulcers (Lindsay, 2005).

Removal of dry, loose tissue by washing allows the growth of new epithelium and aims to prevent hard areas of tissue (or scabs) building up and acting as pressure points beneath dressings and compression hosiery. *Figures 2* and *3* show a limb that has had the wound cleansed, but not the limb. A clean peri-wound area can be seen, while the remainder of the limb is covered in scale. This situation could have been avoided through washing the leg in a lined bucket.

Patients whose ulceration is being treated with compression bandages often experience difficulty bathing because it is important not to get the dressings wet. Wet dressings adversely affect wound healing. These patients will require more assistance to maintain adequate levels of hygiene.

Wound exudate is produced as a normal part of the healing process. During the inflammatory response blood vessel walls dilate and become more porous allowing leakage of protein-rich fluid into the wound area. Excessive wound exudate or the presence of other bodily fluids can cause skin maceration to occur around a wound, which may delay healing (Cutting and White, 2002). Patients experiencing exudate production are at great risk of tissue maceration in the skin surrounding the ulcer. To prevent this type of damage to the surrounding tissue, cleansing should be kept simple. Immersion of the limb in water removes the build up of exudate and slough. It cleanses the affected area without damaging granulation or epithelialising tissue.

In this cost-conscious climate of healthcare provision, the use of tap water provides an economical solution for the regular cleansing of leg ulcers. However, the quality of regional water supplies may vary and this could influence outcomes. This should be

Figure 4. Care should be taken to avoid back injury when filling a bucket with water.

considered before using tap water. This is particularly important if the practitioner is working in a remote area where the water supply may be of poorer quality. In the absence of potable tap water, boiled and cooled water as well as distilled water can be used as wound cleansing agents (Fernandez et al, 2002).

Washing the legs

There are other points to consider when washing a patient's legs using tap water. The following statements are intended to be general guidelines to reduce the risk of injury. All practitioners are responsible for identifying and recording the risks that are specific to their individual practice.

First, the bucket must be cleaned and lined with a plastic bag. This enables heavy soiling from soap scale and skin scale to be disposed of easily, and also aids in the disposal of the water following cleansing.

Once lined, the bucket can be filled with tap water. The risk of back injury while carrying a full bucket of water must be considered (*Figure 4*) and it is the responsibility of the practitioner to ensure the weight of the bucket containing water is within their local primary care organisation's (PCO's) guidelines. The Manual Handling Operations Regulations 1992 set no specific requirements such as weight limits. However, practitioners may be familiar with the following recommended safety information:

- A maximum of 5 litres (10lbs) of water should be carried
- Ensure correct lifting and handling techniques are employed. Equipment must be carried in a correct and safe manner at all times, i.e. using the legs to lift and deposit the weight, taking care not to flex the spine and keeping the load close to the body during lifting and lowering of the load
- All practitioners are responsible for attending their PCO's mandatory manual handling updates
- All practitioners must have access to local PCO health and safety guidelines for reference
- Reduce spillage by providing a vehicle to transport the full bucket from the filling point to the clinical area
- Ensure the floor is dry at all times and mop up any spillages
- Ensure water is directed into a low sink or toilet in a safe manner after use. The plastic liner can be held to direct flow of the water for safe disposal
- Have a bin available for the direct disposal of clinical waste.

Water must be at the correct temperature to prevent patients being at risk of scalds as well as any wound and tissue damage. Follow these guidelines:

- A bath thermometer is recommended to provide a guide when filling buckets
- Water temperature must not exceed body temperature (37ºC)

Figure 5. The leg is soaked in a clean bucket lined with a plastic bag, while the nurse and patient enjoy a conversation as part of an holistic approach to care.

Figure 6. Dry loose skin should be gently removed.

- Ensure PCO guidelines are available for reference
- Soak the leg in a clean bucket of warm water lined with a polythene bag at each treatment (*Figure 5*)
- Remove dry loose skin/scabs if they can easily be removed, to allow epithelialisation of the wound (*Figure 6*)
- Cleansing should never involve scrubbing the wound with gauze or cotton wool balls as this may damage granulating and epithelialising tissue.

To assist removal of dead skin cells, emollients may be added to water or applied to the dry skin surrounding the ulcer in the form of cream or ointment. Any product that is applied to the area surrounding the wound must contain no chemicals capable of sensitising the skin. Examples of satisfactory products include arachis oil, Epaderm (Medlock Medical, Oldham) or DiproBase (Scering-Plough, Welwyn Garden City). For skin that is already sensitised or damaged, the use of chemically inert products is of utmost importance. Products that contain preservatives and perfume are not acceptable for the treatment of skin around a leg ulcer. Lanolin, a viscous substance extracted from wool, consisting of a mixture of esters and fatty acids that is added to some ointments, commonly sensitises the skin of patients with leg ulceration and associated eczema. For patients with these conditions the use of lanolin-based products should be strictly avoided.

Close inspection of the feet and skin is very important, especially for people with diabetes. When washing patient's feet it is important to carry out the following observations:

- Check the heel for hard skin and cracks or fissures. This can be very painful and a focus for infection (*Figure 7*)
- Look for hard skin and corns developing under or between the metatarsal head area of the ball of the foot
- Areas prone to pressure damage are common in patients with rheumatoid arthritis and may also be observed in people with diabetes
- For patients who have difficulty reaching their feet, it is common to find a build up of dead skin between the toes (*Figure 8*). This easily becomes macerated and can be a focus for fungal or bacterial infection. Cleanse with a piece of gauze between each toe stroking in a downward movement to remove the build up of debris. Repeat with a clean piece of gauze to ensure the area is dry. Refrain from using talcum powder between the toes and advise the patient to do the same as it absorbs fluid and forms a paste that may promote tissue maceration between the toes
- In older patients, particularly those with rheumatoid arthritis, the tops of the toes often become red, calloused or develop a corn. These areas can develop ulceration that may be hidden by hard skin. Signs of underlying ulceration include pain, a dark centre to the hard skin, and evidence of dried, dark-coloured exudate or blood. Diabetic patients may not exhibit pain associated with these concealed ulcers
- Toenails that are too long can cause damage to the skin of the foot and lower leg, particularly while the patient is asleep. It is common for patients with poor venous return to experience itching in the mid-calf area and they may rub this area with the opposite foot for relief during the night. Advise patients who may be waiting for chiropody to wear socks during the night

Figure 7. Inspect the foot for cracks and fissures.

Figure 8. A build up of dead skin between the toes can become a focus for infection.

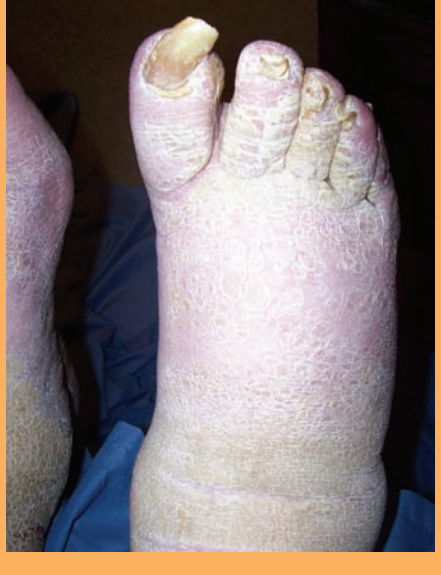

Figure 9. Yellow or thick nails are common in older people and may be a sign of fungal nail infection.

to prevent accidental tissue damage

- Yellow or thick nails are common in older patients, particularly in the big toe (*Figure 9*). It may also occur in the other toes but is less obvious. Fungal nail infections may be suspected if the nails are brittle, crumbly, yellow-orange or grey in colour. If fungal infection is suspected, seek advice from the podiatry service/GP.

Key Points

- **Washing the lower limbs as part of leg ulcer management is still a controversial issue for many practitioners.**
- **Many practitioners cite time constraints and infection control concerns as their rationale for not washing legs.**
- **The research findings available regarding the safe use of tap water to cleanse legs affected by ulceration are inconclusive.**
- **Washing a patient's leg is a therapeutic, non-invasive, holistic intervention that can promote healing, well-being and normality.**

Conclusion

The holistic assessment, recognition and treatment of leg ulcers and their associated common skin ailments by the care team is essential for the care of the individual. Practitioners working in the community, whose caseload consists predominantly of patients living with chronic leg ulcers, often use tap water as a wound cleanser because it is accessible, efficient and cost-effective and, using the rationale that chronic wounds are already colonised with bacteria, sterile cleansing solutions are inappropriate (Fernandez et al, 2002; Patel and Beldon, 2003). The research findings available regarding the safe use of tap water to cleanse legs affected by ulceration are inconclusive. It is recommended that further studies should be undertaken. By approaching the care of leg ulceration holistically and incorporating the washing of legs and assisting the patient to immerse their affected limb in a lined bucket of water, the practitioner encourages wound healing and, by promoting normality, provides the patient with a greater sense of well-being. **WE**

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