

REDUCING PAIN DURING WOUND DRESSING CHANGES

Pain is a significant issue in chronic wounds, causing distress to patients and presenting management challenges to healthcare professionals. Wound pain at dressing change can be minimised by healthcare professionals using appropriate management. This article outlines the causes of pain at dressing change, how pain should be assessed and the treatment options available.

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Figure 1. A foot wound where the dressing has not held the fluid and has excoriated the skin. The area was painful before, during and after dressing changes.

Pain is a common experience for people with chronic wounds (Krasner et al, 1995; Reddy et al, 2003) and pain management at dressing changes still appears to be an issue that is poorly managed in clinical practice, causing the patient considerable distress. It has been documented that there is complacency from healthcare professionals when considering management of pain in people with chronic wounds (Hollinworth, 2007). This article outlines the causes of pain at dressing change, how pain should be assessed and the suitable treatment options.

What is pain?

After initial tissue damage, the inflammatory response activates the pain receptors in the skin. Pain can be a result of an

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underlying medical problem and/or can arise from trauma during wound care interventions such as dressing changes (*Figure 1*) or wound debridement, if it is a regular occurrence (Krasner, 1995). Wound pain may also

be persistent (chronic) and not associated with tissue trauma, for example, as a result of ongoing pathology, wound infection or chronic inflammation.

There are two types of pain:

- ▶▶ Nociceptive pain — this is defined as an appropriate physiological response to a painful stimulus and may involve acute or chronic inflammation. Following this stimulus, the nerves are activated or damaged and this sends pain messages to the brain
- ▶▶ Neuropathic pain — this is an inappropriate response caused

There are various assessment tools that can be used and protocols and guidelines should be available from the local pain team who should also be available to take referrals for uncontrollable pain. See local guidelines for advice on referrals if necessary.

The advantages of using a pain assessment tool are:

- ▶▶ They facilitate patient-centred, holistic care
- ▶▶ There will be a consistent record of any changes to pain levels
- ▶▶ They facilitate a clearly measurable process.

To ensure continuity, the same pain-rating scale should be used each time (WUWHS, 2004).

These include:

- ▶▶ A visual analogue scale (VAS) — a 10cm line with ‘no pain’ at one end and ‘worst pain imaginable’ at the other. Patients mark the point on the line that they feel represents the intensity of their pain
- ▶▶ A numerical rating scale (NRS) — this requires the patient to rate their pain with a scale of numbers, e.g. 0 to 10
- ▶▶ A verbal rating scale (VRS) — this consists of five words, which are used to describe the pain, e.g. none, mild, moderate, severe or excruciating.

Examples of these and other commonly used scales are shown in *Figure 2*.

A pain diary can provide a personal account of any pain experienced by the patient during daily life and outside of dressing procedures. This can help to

provide a more rounded picture of a patient’s overall pain issues.

Measuring pain intensity is also outlined in the WUWHS (2004) document, which states: ‘The goal for all wound types is to minimise pain and create optimal conditions for wound healing.’

If the pain is increasing there may be an underlying reason, such as infection or inappropriate treatment choice. The pain scale can indicate that there should be an attempt to reduce pain to an acceptable level.

Managing wound pain

Wound pain can be exacerbated or prompted by dressing changes and it is important to ensure that dressing changes are as pain free as possible.

Dressing choices

Much of the pain and trauma associated with wound dressing changes can be avoided by careful product selection. An international survey of wound care practitioners identified the following:

- ▶▶ Dried out dressings and adherent products are the most likely to cause pain and trauma at dressing changes
- ▶▶ Pain-free removal is considered the most highly desirable characteristic of a dressing
- ▶▶ There appears to be a close association between those dressings that cause wound trauma and those that cause pain
- ▶▶ Gauze is the most likely to cause both pain and trauma with hydrogels, hydrogel sheet, alginates, hydrofibres, and soft silicones being the least likely
- ▶▶ The use of atraumatic dressings is considered the

most important strategy to avoid wound damage

- ▶▶ The most common strategy for managing pain is the soaking of old dressings before removal, just ahead of selecting non-traumatic dressings and those that offer pain-free removal (Moffatt et al, 2002).

These findings demonstrate that gauze is still used as a wound dressing in many centres, despite the current recommended practice of using dressings that promote moist wound healing.

Removal of dressings that have adhered to the wound destroys newly formed granulation tissue and newly formed fragile capillary loops that have penetrated the dressing material (Collier and Hollinworth, 2000). Although the use of gauze is a particular problem, patients continue to experience pain and trauma with the use of some of the modern wound dressings, many of which can adhere to the wound if they dry out. It is, therefore, necessary to choose a secondary dressing carefully, if one is required, as this could have an effect on the moisture level maintenance at the wound bed and the overall performance of the primary dressing.

Different dressings vary considerably with regard to their skin-stripping potential and the level of pain or discomfort experienced on removal.

It should now be considered standard practice to:

- ▶▶ Select dressing(s) on the basis of peri-ulcer skin condition

- ▶ Avoid harsh adhesives when wear time is likely to be short
- ▶ Consider wound trauma and pain when selecting dressings. Atraumatic dressings have been demonstrated to reduce pain and trauma (Thomas, 2003) and are recommended for venous leg ulceration (Douglas, 2006) and other wound types
- ▶ Apply a skin barrier product to reduce the likelihood of such issues and to help extend the dressing wear time.

It is important that dressings are chosen that promote moist wound healing (WUWHS, 2004). By choosing a dressing that maintains a moist wound healing environment, and that does not dry out, the friction at the wound surface will be reduced and this will minimise wound trauma and pain on removal (Briggs et al, 2002). The choice of a dressing that can stay in situ for a longer period to avoid frequent removal may also be appropriate (Briggs et al, 2002). It is important that dressings are changed before they become saturated, leak and allow the spread of potentially 'corrosive' chronic wound exudate onto the peri-wound skin. If a skin barrier product is used, however, this is not an issue.

Dressing wear time must be adjusted to comply with the needs of the wound and of the patient. If soaking is required to aid removal, if there is bleeding or trauma to the wound or surrounding skin, or if pain is a problem on removal, the choice of dressing should be reconsidered (Briggs et al, 2002; WUWHS, 2004).

Fibrous products (alginates and hydrofibres) form a gel when they come into contact with wound exudate, and are a good choice as a non-adherent contact layer, generally providing good pain relief (Reddy et al, 2003). However, they can also become strongly adherent and cause wound trauma on removal should they dry out, for example, if the exudate level reduces. Non-adherent layers can also be used effectively to reduce adhesion to the wound and prevent damage and pain on removal (White, 2005).

Preventing or avoiding trauma to the wound bed and surrounding skin on dressing removal has led many manufacturers to modify their adhesive (Hollinworth, 2006). Soft silicone dressings were developed specifically with this in mind, and have low peel strengths in order to reduce damage to delicate peri-wound skin (Thomas, 2003; White, 2005).

Analgesics and anti-inflammatory drugs

Analgesics and anti-inflammatory drugs are the most common interventions used for relieving pain. Systemic or topical analgesics or local anaesthetics can also be considered for reducing pain during dressing changes. The inflammatory nature of many chronic wounds means that the use of non-steroidal anti-inflammatory drugs (NSAIDs), such as ibuprofen, can also be considered with or without other analgesics (Popescu and Salcido, 2004). It should be remembered that if systemic drugs are used for treating pain at dressing changes, sufficient doses should be used and sufficient time (e.g. 1–2 hours) allowed for the drug to take effect.

The World Health Organization (WHO) (2008) has developed a three-step ladder for managing cancer pain and chronic pain, which it claims is effective in about 90% of patients, although wound pain is not mentioned specifically. This uses drugs of increasing potency alone or in combination, depending on severity, and titrated until the pain is controlled. Non-opioids (aspirin, paracetamol, or NSAIDs) are used in the first instance for mild pain, then mild opioids (e.g. codeine) for moderate pain, and then strong opioids (e.g. morphine, diamorphine, or fentanyl) for severe pain. 'Adjuvants' are recommended in addition. These are not themselves analgesics, but they enhance the effect of analgesics by treating the side-effects of opioids (e.g. anti-emetics, laxatives) or treating other symptoms associated with pain (e.g. anxiolytics).

Whatever analgesic drug is chosen, it is important that it is administered in the appropriate dose and on a regular basis to control chronic pain in accordance with the license and doses, and that the patient is monitored. Consultation with a pain specialist is advisable when opioids are required, in order to identify the optimum dose and dosage form to use. The objective is to provide the necessary level and duration of pain relief, while minimising unacceptable side-effects (Acton, 2007).

In chronic wounds where inflammation is present there will

Key Points

- ▶▶ Pain is a common experience for people with chronic wounds.
- ▶▶ Pain is an alarm to indicate something is wrong; full assessment should include pain history and current pain.
- ▶▶ Wound pain can be exacerbated by the inappropriate dressing selection.
- ▶▶ All nurses are responsible for their knowledge and understanding of wound pain and strategies to overcome this.

often be localised pain. Topical opioids offer a means of relieving localised wound pain while minimising the risk of systemic side-effects (Ashfield, 2005). A number of cases of the successful use of topical opioids have been reported, although there have been no well-controlled randomised studies.

There are several other reports of the successful use of morphine or diamorphine topical gels (Flock, 2003; Abbas, 2004; Ashfield, 2005), however, the numbers used in these studies were small. This was also highlighted in the Cochrane review of topical agents for pain in venous leg ulcers (Briggs and Nelson, 2003).

It should be remembered that opioids are not currently licensed for topical use in this way, and there is no good evidence to guide choice of dosage or any particular delivery vehicle.

Topical anaesthetics may be suitable for use before painful intermittent procedures. Use of a eutectic mixture of local anaesthetic (EMLA) (lidocaine and prilocaine) has been evaluated for relieving pain occurring during debridement of venous leg ulcers in a number of studies. Again, the use of such anaesthetics topically in wound management is not licensed and effects on wound healing are unclear. The Briggs (2003) review recommended further research to look at this area.

Limited evidence for the effectiveness of a foam dressing containing ibuprofen to reduce pain (Biatain-Ibu, Coloplast, Peterborough) is available from two small studies (Flanagan et al, 2006). In a prospective series of case studies, 10 patients with painful chronic venous leg ulcers were treated for six dressing changes with Biatain-Ibu. The group treated with the ibuprofen dressing demonstrated a reduction in pain intensity scores during the study, but this increased one week after discontinuing treatment (Flanagan et al, 2006). Although having the advantage of convenience, the use of an ibuprofen-containing dressing has limitations. It does not allow for dose modification or the use of other, and possibly more appropriate, dressing types that can be chosen according to the wound's characteristics.

Dressing changes

Once the need for pre-dressing change analgesia has been established, thought should go to the removal of the dressing. Although the correct and

appropriate dressing may have been applied, the patient may still experience pain on removal.

Thought should be given to the need for an adhesive removal product to reduce trauma to the skin such as Appeel (CliniMed, Bucks). This is available in spray and wipe form and uses saline to 'break' the adhesive of dressings such as hydrocolloids and film dressings. In the author's experience, sometimes allowing patients to remove their own dressings can reduce the level of pain they feel.

Ensuring any wound cleansing products are warmed before use will also reduce pain (McKirdy, 2001).

Protection of the peri-wound area is good practice and a barrier preparation such as Cavilon (3M Health Care, Bracknell) LBF (CliniMed, Bucks) and Medihoney Barrier Cream (Comvita, New Zealand), will prevent allergies to adhesives, maceration and excoriation and extend the wear time of the dressing.

Using Entonox (BOC Group, Guildford) — a mixture of nitrous oxide and oxygen) is an effective way of achieving fast pain relief with few side-effects and is short acting. This, however, needs to be prescribed and in the author's locality is only available in the acute setting.

Ensuring the patient is comfortable and relaxed and ready for the procedure is important to reduce anxiety at the dressing change.

The WUWHS (2004) clearly states that preparation and planning for the dressing change is key to effective pain management.

Conclusion

It is vital that wound pain and trauma at dressing change is addressed by clinicians and there are many assessment and management processes that can be utilised to ensure the patient has a reduced pain experience. It is each nurse's responsibility to gain knowledge and understanding to enable this process to be achieved. **WE**

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