Dealing with wound-related pain at dressing change

Jacky Edwards

Numerous studies have shown that pain during dressing change is a major issue for patients with both acute and chronic wounds. Despite this evidence, pain is often misunderstood by clinicians and can be poorly managed. Pain can result in patients abandoning dressing regimens and clinicians need to ensure that patients have their pain reduced as much as possible and do not have to face the trauma of repeated painful dressing changes. This article presents some of the causes of pain and outlines some strategies that clinicians can use to prevent or minimise their patients’ pain.

KEYWORDS:
Wound pain ■ Dressing change ■ Atraumatic dressings

Pain has always been a major issue during dressing changes in patients with both acute and chronic wounds. Patients describe wound-related pain as all-encompassing and one of the most devastating aspects of living with a chronic wound (Price et al, 2008). The European Wound Management Association (EWMA) position document, Pain at Wound Dressing Changes (Moffatt et al, 2002), identified dressing removal as the time of greatest perceived pain. This is supported by Price et al (2008) who stated that pain is more intense at dressing change and can take up to two hours before it begins to subside.

Therefore, Soon and Acton (2006) have suggested that minimising trauma and pain should be a key objective for all healthcare professionals involved in the care of patients with wounds. Bell and McCarthy (2010) agree that healthcare professionals should have sufficient knowledge of evidence-based pain assessment and dressing selection to minimise any wound pain while changing dressings.

However, despite this, Moffatt et al (2002) have stated that healthcare professionals are often reluctant to acknowledge the amount of pain endured by patients. Dallam et al (2005) support this, highlighting that wound- and dressing-related pain is underestimated and poorly managed, which may lead to extended healing times. Similarly, other researchers have noted that pain management at dressing changes is still an issue (Reddy et al, 2003); that there is a degree of complacency from healthcare professionals when managing pain (Hollingworth, 2007); and even that the management of pain by healthcare professionals is often seen as a low priority (Vermeulen et al, 2007).

Vuolo (2009) suggested that wound-related pain can vary in intensity, but that it can impact on wound healing (Pediani, 2001; Clay and Chen, 2005) and quality of life (King, 2003). Dressing changes interfere with daily routines, causing problems with sleep disruption, mobility, odour and psychological stress (Solowiej et al, 2009). This is
H is for Henry

Say hello to Henry. He turned three just last week and now he spends his time running around all over his mummy and daddy’s house, getting into mischief and making them thoroughly worn out!

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TYPES OF PAIN

Pain is intrinsic in origin, arising from the person experiencing it, although sources are varied and can be categorised in different ways.

Acute pain is usually nociceptive and caused by stimulation of peripheral nerve fibres, which send a ‘pain message’ to the brain when they are activated or damaged (Acton, 2008). Acute pain is a symptom of injury or illness and usually ceases when the underlying problem is resolved. Acute pain performs an important protective function, warning of injury or harm and the need to limit further tissue damage. It is how this pain is managed that is important. Acute pain is an appropriate response to a painful stimulus and may involve acute or chronic inflammation.

Chronic pain can be nociceptive and/or neuropathic in origin, typically continuing longer after the original tissue damage has resolved. Chronic pain involves an alteration of normal pain transmission pathways (Wulf and Baron, 2002). Three common altered pain transmission pathways are ‘wind-up’ pain, alldynia and hyperalgesia:

- Wind-up pain: repeated stimulus of the same intensity can lead to increased pain response to the same stimulus, i.e. wound cleansing
- Alldynia: an area of increased sensitivity can develop near to the site of an original injury. This area produces extreme pain in response to minimal stimulus, i.e. the breeze from a fan
- Primary hyperalgesia: tissue injury resulting from inflammation, infection and ischaemia produces chemical mediators that activate or sensitise nociceptors.

Pain can also be categorised by when, and for how long it occurs (Table 1). Anticipatory pain is of particular significance as patients may remember the pain of a procedure for decades, thereby making them reluctant to undergo certain interventions (Moffat et al, 2002).

In the case of wound care specifically, Laterjet (2002) has suggested that it is essential to recognise the significance of patients’ first experience of having a wound dressed — inadequate pain management at this stage could have lasting effects, with patients dreading subsequent dressings and losing confidence in the care team.

This is something the author sees regularly, particularly when dry dressings are applied to burns and have to be soaked off, with patients refusing to be treated by the same healthcare professional thereafter.

Woo (2010) has suggested that anxiety can also increase wound pain at dressing change, stating that patients with higher levels of anxiety anticipate more pain and, therefore, experience more intense pain.

PAIN ASSESSMENT

There are various assessment tools that can be used in pain management, with effective assessment usually involving self-report methods. The advantages of self-report are that there will be a consistent and clearly measurable record of any changes to patients’ pain levels.

The same tool should always be used and pain should be measured before, during and after the dressing change (Acton, 2008) (Table 2).

In older people, communication may be a problem due to their medical condition or mental state. Alternative pain tools can be used (such as the Oucher Scale Figure 1), or assessments should also include visual observations of non-verbal signs such as facial colour or expression, increase in pulse rate, moaning, tension, and body movements, which could all be signs of pain (Lloyd’s Jones, 2008).

For neuropathic pain, assessment could be made by using the neuropathic pain scale (Galer and Jensen, 1997), or the Leeds Assessment of Neuropathic Symptoms and Signs pain scale (S-LANSS) (Bennett et al, 2005).

PAIN MANAGEMENT

Dressing selection

Dressings that have dried out are identified as the most common factor contributing to wound pain (Bell

Table 2: Different types of pain assessment tools

<table>
<thead>
<tr>
<th>Method</th>
<th>Description</th>
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<tr>
<td>Visual analogue tool</td>
<td>A 10cm line with ‘no pain at one end and worst pain imaginable’ at the other. Patients mark where on the line represents the intensity of their pain</td>
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<tr>
<td>Numerical rating scale</td>
<td>This includes numbers from 0-10, with patients stating which number represents their pain intensity</td>
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<tr>
<td>Verbal rating scale</td>
<td>This usually consists of five words, which are used to describe pain, e.g. ‘none’, ‘mild’, ‘moderate’, ‘severe’ or ‘excruciating’. Patients state which word best describes their pain intensity</td>
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The face of less painful healing

Having a wound is not something to smile about – but having a dressing that ensures your patients don’t have to endure any more pain than they need to, certainly is. Luckily, our dressings with Safetac technology are engineered to drastically reduce both pain and tissue damage in wound management. This means that patients experience less suffering, less stress and potentially faster healing.1,2

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Five-minute test

Answer the following questions about this article, either to test the new knowledge you have gained or to form part of your ongoing practice development portfolio.

1. What are the main symptoms of wound pain?
2. Name some of the primary causes of wound pain.
3. What types of pain might patients experience at dressing change?
4. Outline the main techniques for helping to minimise pain at dressing change.
5. Can you explain the principles behind pain assessment?

and McCarthy, 2010). Davies and Rippon (2008) have supported this, suggesting that the most common causes of wound pain are dressings that have adhered to the wound bed, skin stripping of the periwound area, and tissue maceration and excoriation of periwound skin due to inadequately managed exudate. Benbow (2010) has stated that accurate assessment should inform the healthcare professional’s choice of dressing, based on exudate levels and tissue type. The challenge lies in correctly identifying the needs of the wound and matching the dressing to these needs.

Woo (2010) identified that dressing changes are painful when the contact layer adheres to the wound bed due to dried out materials and aggressive adhesives; granulation tissue and capillary loops growing into the product matrix; or the glue-like nature of dehydrated exudate. Woo (2010) added that the enzymes in the wound exudate can cause maceration and tissue erosion, which leave the periwound skin at increased risk of trauma.

The World Union of Wound Healing Societies (WUWHS, 2004) has suggested that healthcare practitioners select products that are appropriate for the wound type, promote moist wound healing and are atraumatic on removal. Modern dressings are designed not to adhere to the wound surface or skin and, therefore, should not cause trauma or pain due to skin stripping (Benbow, 2010). White (2008) reported that conventional dressings caused higher pain ratings at dressing change than atraumatic dressings, a finding supported by Upton and Soleweij (2012), who found that patients using atraumatic dressings reported lower levels of pain and psychological stress.

Blackburn-Munro (2004) identified high levels of background pain in macerated periwound areas. Therefore, dressings should be changed before they become saturated and allow the spread of potentially corrosive wound exudate onto periwound skin. Application of a skin barrier before dressing application will help to prevent periwound skin trauma and prolong wear time, particularly on difficult anatomical areas.

If soaking is required to aid removal, there is bleeding or trauma to the wound or surrounding skin, or if there is pain on removal, another dressing should be considered (Briggs et al, 2002).

Some dressings contain aggressive adhesives that strip skin cells on removal (Rippon et al, 2007), which causes unnecessary suffering and can result in delayed wound healing. However, retention of dressings is problematic in some anatomical areas and adhesives are required to keep them in place. Therefore, the development of atraumatic dressings made from soft silicone has been significant in preventing wound pain. Timmons et al (2009) used a series of case studies to demonstrate that the use of silicone-based treatments provided effective treatment of patients’ wounds, without causing excessive trauma to the wound bed or surrounding skin. Timmons et al (2009) added that the use of these dressings helped to improve the patient’s quality of life, reduce anxiety, and improve outcomes.

A number of authors have suggested that the use of soft silicone dressings reduces wound pain at dressing change (Acton, 2008; Benbow, 2010; Upton, 2011). Benbow (2010) stated that this is because the soft silicone does not adhere to the wound’s surface or the skin and, therefore, does not cause trauma or pain due to skin stripping on removal. Therefore, soft silicone dressings should be considered in patients who have anticipatory pain or are at high risk of periwound trauma.

There are some dressings that have a known potential to cause pain. For example, alginate dressings should not be applied to wounds with low levels of exudate as they are highly absorbent and likely to dry out and adhere. Similarly, mesh-type dressings, could lead to trauma on removal as granulation tissue can grow through the mesh pores.

In the author’s experience, appropriate removal is important in avoiding trauma and can be aided by stretching some dressings (particularly hydrocolloids and films), which causes the adhesive to break down. Another technique is to apply a swab moistened with saline or water to the underside of the dressing as it is lifted (useful in adhesive foam dressings).

Topical negative pressure has also been cited in a number of studies as
causing pain (Morris et al, 2007), and larval therapy is also known to cause pain in some patients (Sherman, 2002). Honey dressings have also been known to cause a stinging or burning sensation, possibly caused by the acidity level or the osmotic ‘pull’ they exert (Vuolo, 2009). Appropriate assessment of patients for these treatments is required as well, as the provision of adequate analgesia to manage any potential pain.

Wound cleansing, particularly with antiseptics, has been identified as a major cause of wound pain, as has mechanical cleansing with gauze and the use of cold solutions (Vuolo, 2009).

**Analgesia**

Analgesia must be given at least 30–60 minutes before any dressing change (Lloyd-Jones, 2008), and can be systemic, topical or local. Vuolo (2009) has suggested that analgesia should relate to the severity, frequency and duration of pain and that background pain requires medication provided at regular intervals, supplemented by appropriate analogesics before any dressing changes.

**Paracetamol**

Paracetamol works on the central and descending pain pathways. It is a strong analgesic and will increase the analgesic effects of non-steroidal anti-inflammatory drugs (NSAIDS) in both acute and chronic pain (Richardson and Upton, 2011).

**NSAIDS**

The drugs have an analgesic and anti-inflammatory mode of action. There are potential problems of gastric irritation and cardiac and renal compromise, therefore, healthcare professionals should check for contraindications. There are no compatibility issues with paracetamol and they can be used together for procedural pain and background pain management (Richardson and Upton, 2011).

**Weak opioids**

If a mixture of paracetamol and NSAIDS is not effective for background wound pain, a weak opioid (codeine, tramadol) can be added at a dosing frequency sufficient to control the pain (Richardson and Upton, 2011).

**Strong opioids**

These drugs should only be considered for wound care in the case of insufficent relief from the combined analgesia described above. Morphine is flexible in that it can be given via all routes with no ceiling dose and is useful for dressing changes. It should be given at least an hour before any procedure (Richardson and Upton, 2011).

**Co-analgesics**

Co-analgesics are used for the treatment of non-nociceptive elements of pain such as neuropathic pain, allodynia and hyperalgesia. In wound pain, anticonvulsants and antidepressants, such as amitriptyline and gabapentin, have been found to be effective, but at lower levels than for their original purpose (Richardson and Upton, 2011).

**Nitrous oxide**

Nitrous oxide is a 50:50 mixture of oxygen and nitrous oxide and is effective in painful dressing changes. It is self-administered by the patient, has few side-effects and can be used alongside other analgesics (Acton, 2008).

**Lidocaine/prilocaine cream**

This is a topical anaesthetic that may be suitable for use before painful procedures. This is not a licensed use and its effects on wound healing are unclear (Vanscheidt et al, 2001).

**PATIENT EMPOWERMENT**

Educating patients about pain is a necessary step as it helps to dispel common misconceptions and myths, that might lead to non-concordance. By explaining procedures and how they will be performed, healthcare professionals can improve patients’ understanding of treatment and reduce any anxiety and fear (Wright and Shirey, 2003). For example, in the author’s experience, patients often misunderstand wound debridement and fear that it may worsen tissue damage. However, with education, patients can learn that the removal of necrotic tissue will in fact facilitate wound healing.

Another technique is to ensure that patients are involved in their dressing changes, allowing them to remove their own dressings and have ‘time out’ periods during the procedure (Vuolo, 2009).

Pain can often result in non-concordance with wound care. Therefore, there is a need to ensure that patients undergoing dressing changes have their pain minimised as much as possible. Fletcher (2010) suggests some strategies that can be used to achieve this (Table 3).

**CONCLUSION**

Patients put their trust in healthcare professionals and should not have to face the trauma of repeated painful dressing changes (Gray, 2009). Healthcare professionals need to rise to the challenge of minimising wound pain, selecting the appropriate wound care products and having an understanding of the uses, indications and contraindications of a wide range of products.

It is also vital that, in order to provide evidence-based care, they have a wider knowledge and understanding of pain assessment and management.

**REFERENCES**


<table>
<thead>
<tr>
<th>Table 3: Strategies for avoiding pain at dressing change</th>
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<tr>
<td>Avoid use of adhesive products on fragile skin where possible</td>
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<tr>
<td>Use skin protectants, i.e. barrier creams</td>
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<tr>
<td>Make sure appropriate dressings are selected</td>
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<td>Include patients in their dressing changes</td>
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<td>Follow the manufacturers’ instructions for application and removal of the dressing</td>
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<td>Expose wounds for a minimum time</td>
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<td>Use attraumatic dressings</td>
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<td>Cleanse with warm solutions</td>
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<td>Use silicone medical adhesive removers to remove dressings</td>
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<td>Utilise distraction techniques</td>
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KEY POINTS

- Pain can often result in non-concordance, therefore, clinicians need to ensure that patients undergoing dressing changes have their pain minimised.
- Patients should not have to face the trauma of repeated painful dressing changes.
- Clinicians need to reduce wound pain as much as possible through the appropriate use of wound care products, analgesia and distraction techniques.
- Pain education helps to dispel common misconceptions and myths that might obstruct effective pain management.
- Analgesia must be given at least 30–60 minutes before dressing change.
- Dose and type should relate to the severity, frequency and duration of pain, and background pain must also be taken into account.
- Educating patients by explaining the procedure and how it will be performed can reduce anxiety and fear.
- Dressings should be changed before they become saturated and start leaking potentially corrosive wound exudate onto the periwound skin.