

Minimisation of Pain and/or Trauma during Wound Management

INTRODUCTION

Pain is a normal, protective function. Normal pain protects us and alerts us to tissue damage (Wulf & Baron 2002). When tissues have been damaged and a wound occurs, control of pain should be considered an integral component of wound management. Wound management interventions have the potential to cause pain and/or trauma to clients. Nurses work with clients to ensure optimal wound outcomes whilst minimising harm, including preventing and managing wound pain and/or trauma. Uncontrolled or poorly managed pain can impair wound healing and have a negative impact on quality of life (Briggs & Torra i Bou 2002). Chronic pain that persists or progresses over a long period of time can have severe psychological impact, and result in significant financial and social costs for the individual, the community and health services.

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There are many aspects of wound management that have the potential to cause pain and/or trauma. The influences on the client's experience of pain and trauma related to wound management can be multi-factorial (Hollinworth 2005). These include physical, psychological and social influences.

Physical factors can include:

- Wound dressings (Hollinworth 2005)
- Exposure of wounds to the air
- Wound exploration techniques including use of probes
- Wound debridement techniques
- Underlying aetiology (Hollinworth 2005)
- Other physical conditions (Hollinworth 2005)
- Pain threshold and tolerance

Social factors can include:

- Influence of significant others
- Living conditions and financial status
- Social support network
- Culture

Psychological factors can include (WUWHS 2004):

- Past experience
- Expectations
- Age, intellectual capacity and understanding

The Pathophysiology of Pain

A holistic understanding of pain takes into account emotional, psychological, socio-political and existential aspects of pain as well as physiological, anatomical factors. There are diverse definitions of pain, however for the purposes of this newsletter, pain is considered "an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage" (WUWHS 2004).

Types of Pain

Pain can be classified according to its duration and the pathophysiological response of the nervous system. Acute pain is usually related to a specific event. It generally resolves in days or weeks, and is usually nociceptive in origin. Chronic pain is often not related to a specific cause, is usually of indeterminate duration, and can be nociceptive or neuropathic. Chronic pain that persists for longer than seven weeks can impair tissue regeneration (Wulf & Baron 2002).

1. Nociceptive

Nociceptive pain is the "normal physiological response to a painful stimulus" (Hollinworth 2005). It is usually due to tissue damage and a sensation is produced by direct stimulation of intact pain receptors transmitted along normal nerves. Nociceptive pain is often described as 'sharp', 'aching' or 'throbbing'. The pain may be easy to describe if it is somatic in origin (i.e. skin, soft tissue, muscle or bone). However description can be more difficult if the pain source is visceral. Nociceptive pain is usually self limiting. This type of pain is usually controlled adequately by regular analgesics (including opioids).

2. Neuropathic

Neuropathic pain is considered to be an inappropriate response of the nervous system. This pain is usually the result of nerve damage due to a primary lesion or nervous system dysfunction (WUWHS 2004). Neuropathic pain is the main cause of chronic pain. Prolonged pain can result in hypersensitivity (WUWHS 2004).

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Assessment of Pain

Thorough assessment of wound-related pain is essential (Hollinworth 2005). A thorough assessment will assist to determine the origins of the pain, the client's responses and beliefs related to the pain and the impact it has on their life. It is only with adequate assessment that appropriate and efficacious treatments can be planned and implemented to optimise quality of life and wound healing. The attitude of the assessor can influence the information gained and the treatments offered (Briggs & Torra i Bou 2002, Hollinworth 2005). As pain is a very individual experience that cannot be directly observed, the assessor must attempt to put aside their preconceptions and believe that 'pain is whatever the person says it is' (Wulf & Baron 2002).

Assessment of pain can be more difficult for clients who cannot articulate their pain adequately (WUWHS 2004). This can include the very young, those with an altered mental state or a language barrier or those with physiological conditions (e.g. dysphasia from CVA). Even where there is no impairment to articulation, there are many psycho-social factors that influence a client's responses to pain. It is therefore important to use verbal and non-verbal cues and build a trusting relationship with the client to promote honest disclosure. Assessment of pain is an integral component of wound management and is not an 'add-on'.

When assessing pain there are a number of factors that will enhance the nurse's understanding of the client's pain and their experiences related to the pain.

Ascertain the main cause/s of the pain (refer next section).

Use open, non-judgemental questions and allow adequate time for the client's responses.

Assess for pain location, quality, triggers, reducers and duration (WUWHS 23004).

Ascertain the client's responses to the pain. e.g. how the pain impacts on their life. Document responses verbatim where possible to minimise misinterpretation.

Use techniques such as paraphrasing to promote accuracy of information.

Use a scale to measure pain intensity (WUWHS 2004). There are numerous pain intensity scales available including visual scales and numerical scales. For some clients a pain diary can be useful.

Causes of Pain (WUWHS 2004)

Influences on Pain

Environmental factors

Eg timing of procedure, environment/setting, resources, techniques used, positioning

Causes of Pain

Background Pain

Persistent pain due to underlying pathology, eg ischaemia, infection

Incident Pain

Pain related to activity, eg friction, dressing slippage, coughing

Procedural Pain

Due to routine interventions, eg dressing changes, wound cleansing

Operative Pain

Cutting or manipulation of tissue normally

Influences of Pain

Psychosocial Issues

Eg age, culture, gender, education, past experiences, anxiety, fear mental state

Pain Qualities

In chronic wounds the prolonged inflammatory response can result in hypersensitivity and increased pain which can seem out of context to the stimulus.

The client may experience (WUWHS 2004):

- Primary hyperalgesia: hypersensitivity of the wound itself
- Secondary hyperalgesia: hypersensitivity of the surrounding skin, or
- Allodynia: intense pain brought on by minimal stimuli. e.g. even moving the air over the wound may result in severe pain.

The quality and interpretation of pain is also related to the person's pain threshold and tolerance and past experiences related to pain.

The nurse should assume all wounds are painful (Hollinworth 2005). However, the nurse must consider that for some persons with neurological impairment (e.g. spinal cord injuries or neuropathy) there is an absence of pain. Wound management for these clients can be challenging as they do not experience the normal sensations associated with injury. Therefore, these clients can sustain or maintain tissue damage without realisation or appreciation of the seriousness of the wound.

Pain in Wound Management

Pain for people with wounds can be related to a number of causes which can occur individually or as one of a number of factors.

Pathological processes such as poor arterial circulation can cause ischaemic pain (Rice 1998). Venous disease can cause pain which may result in client's reluctance to participate in recommended care such as compression therapy. Conditions such as vasculitis or pyoderma gangrenosum can result in very painful wounds. Understanding the underlying aetiology of the wound is therefore important to ensure correct treatment can be instituted (WUWHS 2004). Treating pain without ascertaining its cause may lead to ineffective control and prolonged client suffering. Other pathologies which can cause pain (e.g. osteo or rheumatoid arthritis) can impact on the client's pain and their pain experience and make assessment and management of pain more challenging (Briggs and Torra i Bou 2002).

Wound infection can increase pain (Briggs and Torra i Bou 2002). Wound infection should be treated promptly as it can impair healing leading to poor client outcomes or even have serious sequale such as sepsis. Wound infection usually necessitates treatment such as antibiotics. A change in the wound dressing regimen may also be required.

Poor wound management practices can have a significant

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impact on pain experienced. There are numerous practices that can cause pain. Implement good wound management practices such as:

- Avoid acceptance of pain as a normal part of wound management. The erroneous belief of 'no pain, no gain' is still held by some practitioners.
- Undertake a comprehensive assessment and act on wound assessment. Identification and treatment of factors such as infection, maceration or pressure can reduce unnecessary pain.
- Choose appropriate dressings that maintain a moist wound environment (Briggs & Torra i Bou 2002). Wet to dry saline soaks, dressings that become adhered or the qualities of a dressing product itself may cause pain.
- Avoid prolonged exposure of wounds to the air (Hollinworth 2005). This can result in dryness of nerve endings in the wound bed and increase pain.
- Reduce the frequency of dressing changes to minimise exposure of the wound to the air and reduce the chance of pain due to traumatic removal of dressings (Hollinworth 2005, WUWHS 2004).
- Avoid use of hot or cold solutions or applications for wound cleansing/treatment that can result in pain (WUWHS 2004).
- Avoid aggressive cleansing, debridement, and dressing removal techniques that can cause pain.
- Do not rush procedures and develop trust between the clinician and the client.

Recurrent pain or an experience that the client finds unpleasant leads to anxiety and fear regarding future wound management procedures (Briggs & Torra i Bou 2002). If a person has significant pain during a wound management related procedure, it is negligent to repeat the procedure without acting to reduce pain (WUWH 2004). The nurse should identify the cause of the pain and take

steps to prevent pain e.g. change the product or technique, or offer analgesia

Managing Pain

Wherever possible, act or intervene early with the aim of preventing or reducing pain (WUWHS 2004). To manage pain, adequate planning and preparation is needed. Investigate, identify, and where possible treat the underlying pathology or cause of pain. If necessary, refer the client to an appropriate specialist to assist in diagnosis and management of underlying aetiology, e.g. a vascular surgeon for ischaemic pain due to poor arterial supply, a dermatologist for suspected pyoderma gangrenosum, or a rheumatologist for poorly managed rheumatoid arthritis.

When planning interventions, consider environmental factors and timing. If possible, allow the client to choose a time that best suits them. Involve the client in their care and give adequate explanation of the procedure (Briggs & Torra i Bou 2002). Encourage the client to ask questions or seek clarification. Give express permission to the client to express pain or call a 'time-out' (Hollinworth 2005). Some clients expect wound management interventions to be unpleasant and will endure significant pain before complaining. Avoid relying solely on verbal information. Watch the client's facial expressions and body language during procedures as these can indicate a client's true reactions to pain. Avoid dismissing or trivialising pain. This will undermine the client's confidence in and respect for the practitioner and lead to anxiety and fear of pain (Briggs & Torra i Bou 2002).

Consider non-pharmacological interventions to manage pain if possible. Utilise wound management interventions and practices that minimise pain. Diversions such as watching television, deep breathing, conversation, or inviting a significant other to be present during wound management procedures can sometimes act to reduce pain or the anticipation of pain.

If good wound management practices and non-pharmacological interventions are not successful in controlling pain, pharmacological methods should be considered. The need for medication to manage pain should not be thought of as failure by the nurse or the client.

Analgesia can be used to reduce background, incident and procedural pain. If background and incident pain is well controlled, then procedural pain will usually be reduced (WUWHS 2004). Analgesia can be used prophylactically, routinely and post-intervention.

The choice of an appropriate analgesic is based on a comprehensive assessment. The nurse should ensure:

- The analgesic chosen considers the characteristics of the pain, the client and the care setting (Briggs & Torra i Bou 2002).
- The client is informed and educated regarding the analgesic, intended effects and any possible side effects.
- The effect of the analgesic is assessed and recorded.
- Monitoring for adverse effects is undertaken. If adverse events occur, the prescribing practitioner should be informed and the medication may need to be ceased. However, if the analgesic is ceased, the nurse must consider that the client's pain may not be adequately controlled.

The World Health Organisation's analgesic ladder for management of cancer pain (WHO 1996) can be applied for management of wound pain. Advancing to the next level on the analgesic ladder is dependent on the level of control achieved (*see over page for details*).

Some tricyclic antidepressants and anticonvulsants can be used to manage neuropathic pain. A full assessment of the client should be undertaken prior to prescription of these classes of drugs (WUWHS 2004).

If the pain is chronic and/or remains uncontrolled, referral to a specialist pain management unit should be considered (Briggs & Torra i Bou 2002).

Analgesic Management of Pain (WUWHs 2004, Briggs & Torra i Bou 2002)

Steps	Analgesic class	Examples
Step 1	Non opioid	Paracetamol NSAIDs Topical local anaesthetics Oxygen and nitrous oxide gas (Entonox)
Step 2	Opioid for mild-moderate pain	Codeine
Step 3	Opioid for moderate-severe pain	Morphine Oxycodone

Wound Trauma

Trauma to a wound can be due to numerous factors. The client may unknowingly traumatise a wound that is insensate (e.g. due to neuropathy or spinal cord injury). Occasionally clients may traumatise their own wound for a number of reasons, including psychiatric conditions, behavioural problems and social problems. Nurses can also traumatise wounds. This occurs most commonly during dressing changes.

In chronic wounds in particular, the principles of wound bed preparation necessitate that devitalised or unhealthy wound tissue is removed to allow optimal healing to occur (Ayello & Cuddigan 2004). This is achieved through debridement. There are various forms of debridement, such as autolytic, mechanical, biosurgical, enzymatic and sharp (Swanson 2005). Enzymatic, mechanical and sharp debridement techniques have the potential to cause pain and/or trauma to the wound. Prior to performing wound debridement adequate planning to manage pain and minimise trauma to healthy tissues is vital. Clients should be informed that they can call a 'time-out' at any stage during the procedure and strategies should be utilised to minimise pain. This can include: good explanation of the procedure, avoidance of healthy tissue, use of topical local anaesthetic, prophylactic analgesia and diversional therapy.

Mechanisms of dressing adherence

Unfortunately a significant

amount of unnecessary wound trauma continues to occur. Healthy wound tissue can be traumatised by aggressive wound cleansing or debridement. A common reason for wound trauma is dressing adherence. The two main processes contributing to dressing adherence are (Thomas 2003):

- Proteinaceous wound exudate connects the dressing to the wound surface. As the exudate dries it attaches the dressing to the wound.
- New tissue grows into the dressing structure, incorporating the dressing into the healing wound.

Levels of adherence

In the first week or so newly formed epidermis 'floats' on the wound. The new epidermis can be damaged by a lightly adherent dressing just as easily as by a firmly adherent dressing. Therefore, damage to new epidermis is an 'all or nothing' event (Thomas 2003). Even dressings marketed as 'low adherent' can adhere to and damage wound tissue. Adhesives can also strip skin and damage peri-wound tissue.

Terminology related to dressing adherence (Thomas 2003)

- Adhesive: A dressing which does not require secondary fixation.
- Adherent / Low adherent: A dressing which will or has the potential to become attached to the wound. The adherence can be dependent on secondary dressing choice.

•Atraumatic: A dressing which is able to be removed without causing pain or trauma to the wound bed or peri-wound tissue. An atraumatic dressing can be adhesive or non adhesive.

Dressing selection to minimise pain and trauma

When choosing a dressing to minimise pain and trauma the nurse matches the dressing to the wound aetiology, long term objective, wound and peri-wound characteristics and client-related factors. As most dressings are designed for help regulate the moisture level of the wound, choosing the appropriate wound dressing for the level of exudate is ideal (Sibbald et al 2000). In most instances the dressing should be maintain a moist wound environment (or maintain dry eschar if this is appropriate). Consideration of the characteristics of secondary dressings can also impact on wound exudate management and therefore contribute to dressing adhesion, pain on removal or peri-wound trauma (Thomas 2003). Dressings should be able to be removed without trauma to wound and peri-wound skin (WUWHs 2004). If a dressing is adhered and/or requires soaking to be removed, an alternative dressing should be considered that avoids adherence (Briggs & Torra i Bou 2002). Nurses must also be alert for the potential for dressings to cause sensitivity or allergy which can increase pain and cause tissue damage.

Conclusion

Nurses, working in conjunction with clients have a responsibility to adequately assess for, prevent and manage wound pain and trauma. In contemporary wound management the minimisation of wound pain and trauma is an expectation of good practice. There are several mechanisms of wound pain and trauma and the nurse needs to understand these and utilise strategies to ensure wound management is optimal for wound care and the client.

*See insert for Reference List