

Managing acute wounds in general practice

This Practice Nurse Clinical Update explores the management of skin tears, superficial partial thickness burns and surgical wounds.

Introduction

INCREASINGLY general practice is becoming the first port of call for the management of acute injuries, and wounds are no exception.

By ensuring best practice principles are applied in wound management, personal and financial burdens resulting from wounds becoming chronic can be minimised (see Box 1).

The most common wounds seen in general practice include:

- cuts and abrasions
- skin tears
- superficial partial thickness burns – sometimes small areas of full thickness burns may also be managed in general practice
- surgical wounds.

Factors affecting wound healing

The overall health of the patient influences the complex process of wound healing, and many factors affect the normal wound healing pathway, including:

- Compromised arterial circulation
- Oedema – dependent oedema increases the risk of cellulitis
- Poor nutritional status – protein, zinc and vitamin C play an important role in wound healing. A balanced diet and plenty of water to rehydrate are required for healing
- Inflammatory disorders such



GP nurses are increasingly dealing with acute wounds.

as arthritis, myalgias and inflammatory bowel diseases may prolong the inflammatory phase of healing by influencing inflammatory cytokines and the inflamed response

- Older age – being older than 80 years of age – can influence the way in which the body recognises the initial trauma and responds by reproducing replacement cells.

Steps in acute wound management

Control bleeding

Combined with elevation of the affected area and the application of direct pressure, calcium alginate wound care products can help control bleeding.

Calcium alginate dressings such as Kaltostat and Algisite

M help promote haemostasis by exchanging calcium ions with the sodium ions in wound fluid to initiate the clotting cascade.

Prevent tetanus

If the patient's wound is a tetanus prone injury, it is important to check his or her vaccination status. Tetanus vaccination is usually current for 10 years, unless a tetanus prone injury has occurred in the meantime. For examples of tetanus prone wounds, see box 2 on page 8.

Cleaning and debris removal

Where possible, cuts and abrasions will need thorough cleaning to remove embedded debris. If local anaesthetic is required, discuss it with your GP. Warmed cleansing solution is more comfortable for the patient, and in the case of very soiled wounds, washing under running tap water may be indicated. If the patient's immune status is a concern, it may be advisable to use an antiseptic solution. Rinse this off after 2-5 minutes.

Depth and wound closure

Assessing the depth of the wound and whether nerves and tendons



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Box 1: Principles of wound management

- Stop profuse bleeding
- Ensure tetanus status is current
- Identify underlying pathology that may influence healing
- Control oedema and the inflammatory phase of healing
- Select a dressing to meet the needs of the tissue and to protect from further injury
- Reassess to achieve complete epithelialisation within an expected time frame.

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Box 2: Examples of tetanus prone wounds

- Deeply penetrating wounds
- Bites
- Wounds containing foreign bodies (e.g. wood splinters)
- Burns
- Superficial wounds contaminated with manure, soil or dust.

are functioning normally will guide management (see Figure 1). If deep, suturing or use of a device such as Leukosan SkinLink strips will be required. A secondary non-adherent pad should be used to cover the wound, and the dressing should be supported with a crepe bandage and tubular support bandage, which will reduce oedema and guide the inflammatory phase of healing.

Timing and waterproof dressings

Some clinicians prefer to cover

suture lines with a waterproof dressing, but as many acute wounds are initially 'dirty', it is important that they can be easily inspected. For this reason, adhesive products should be avoided at this time.

Following review of the wound (and it appears to be healing well), it may be appropriate to apply a waterproof dressing. Redressing of cuts and abrasions is generally conducted twice weekly or weekly. Cuts and abrasions should heal in 2-3 weeks.

Superficial partial thickness burns

Superficial partial thickness burns are painful, with blisters and/or shedding of the upper layers of the epidermis and partial dermis (see Figure 2). It is important to estimate the surface area and region involved to determine if further assessment in a burns unit is required.

can be managed within the practice (see www.rch.org.au for further guidance on protocols).

Mesh dressings

If the burn is to be managed in the practice, and you're confident it's a clean burn, some of the newer mesh dressings are very useful – Urgotul, Hydrotul and Mepitel can be placed over the burn, covered with an absorbent dressing such as Zetuvit Plus, Mesorb or Exu-Dry and bandaged in place and covered if possible with an elasticised tubular bandage to control oedema.

Planning a review

The patient should be reviewed in three days. Take the dressing down to the primary layer but do not remove this. You can see through the mesh dressings to determine how the wound is progressing.

If no erythema or purulent discharge is evident, cover the wound with a fresh absorbent pad, apply the bandage and tubular bandage and review again in 3-4 days. Repeat the procedure and, if all is well, review the wound using the same techniques in one week. At this time, the mesh dressing is usually dry and lifts off the wound revealing healing beneath.

Aftercare of the burn

Once healed, the area is very sensitive to heat, so advise patients to take care, apply moisturiser daily and sun protection if required. A clean superficial partial thickness burn should be healed within 2-3 weeks.

Skin tears

Because skin tears are caused by trauma, their initial management has a big impact on the viability of the skin flap (see Figure 3). For this reason, accurate assessment is vital.

Skin tears can be categorised into three main types: Category 1a and 1b, category 2a and b and category 3. The commonly accepted STAR skin tear classification tool is available from www.silverchain.org.au. Click on Research, then Research Projects and then STAR Project.

Managing skin tears

If you can approximate the skin edges without tension, we suggest this be done once bleeding has been staunched. Most practice staff will

Figure 1 (below):
Acute trauma after falling off a roof onto sheet metal.

Figure 2 (bottom):
Superficial partial thickness burn following a hot cup of tea being pulled down from the table.



Photos supplied by Jan Rice

**Cooling the burn area**

Immediate action involves cooling the burn area with cool running water. If this is not possible or has been done but there is still some discomfort, Burnaid is a handy product to have in the practice to place on the area while awaiting further assessment by the GP.

Practice protocol

Burns with a surface area greater than 10% of the body, or those involving the perineum, feet, hands or face, or where the burn is circumferential, require assessment in an acute care facility.

It is a good idea to have a protocol in your practice outlining what

still use adhesive support strips, a light absorbent pad or foam and crepe bandage with elasticated tubular support.

If the skin edges cannot be approximated, using the mesh dressings similar to the dressing mentioned above for burns will protect the raw area without over-hydrating the tissue or desiccating the area.

New options

Another widely used option becoming standard practice in acute care facilities involves the use of silicone foam products such as Mepilex Border. This practice is yet to be adopted by general practice staff due to the misconception of higher costs associated with the products. With the right protocols in place, the silicone foam regimes can be cost effective. For further information on silicone products, visit www.tendra.com.

Reviewing skin tears

A review in 3-4 days is recommended. It is advisable to be highly suspicious of possible infection in the elderly. Skin tears will leak serum for a few days, so an absorbent pad like those used for burns is advisable. If using the mesh dressings, then managing as for the burns previously mentioned is recommended.

If the wound looks stable, redress it and aim to have it healed in 2-3 weeks.

Infection

If a localised or systemic infection is suspected then an antimicrobial dressing such as Iodosorb powder or ointment and an absorbent pad such as Melolin, covered with a pad and bandage or flexible tape such as Mefix or Hypafix, should be used.

Do not use occlusive dressings on suspected locally or systemically infected wounds.

Surgical wounds

Surgical wounds encountered in general practice are either created in the practice as a result of a procedure or present for review as requested by a surgeon or acute care facility.

As with any medical or surgical condition, a complete history ensures the best possible outcome and the patient should be able to give a clear history of what was performed and why.



Figure 4: Non-healing skin graft donor site of over eight months' duration; infection is the most likely cause for failure to heal.

Factors influencing the outcome of a surgical procedure include:

- pre-operative skin cleaning and contamination
- length of surgery and hospital stay
- diabetes, obesity or BMI greater than 30
- previously mentioned factors affect wound healing.

Clean surgical wounds

The clean surgical wound generally requires a minimally absorbent protective dressing such as Opsite Post-Op or Tegaderm + Pad. Supporting the surgical wound provides further comfort and reassurance for the patient, so using garments or tubular support products is advisable. A clean surgical wound should be fully healed in three weeks.

Surgical wound breakdown

Wound dehiscence (breakdown) requires investigation as to other factors that may have caused the breakdown and use of antimicrobial dressings such as Iodosorb or silver products such as Contreet are recommended.

Investigations for surgical wound breakdown are outlined in Box 3.

Box 3: Investigations for surgical wound breakdown:

- Plain x-ray
- MRI
- CT scan
- Wound swab or biopsy
- Ultrasound or sinogram.



Figure 3: Skin tear post-trauma two days previously; skin flap may not now be viable.

Treating infections

If systemic infection is suspected, the use of systemic antibiotics is indicated together with antimicrobial dressings. Wound care is generally undertaken second to third daily, and no occlusive dressings are used.

Progress should be seen within one week if the care planned is appropriate.

Summary

As a rule, an appropriately managed acute wound should be healed in 2-3 weeks. If progress is not evident within a week, consider the possibility of impending complications and risk factors for wound dehiscence.

Nutrition and tissue support are paramount in aiding wound healing.

If the wound is not progressing well within a month, seek further advice from a wound specialist such as that offered by Clinical Friends of World of Wounds at: www.worldofwounds.com.