Skin Ulcers: Being Prepared

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"The duty of the physician is to keep the patient amused while nature heals the wound"
— Sir William Osler

Managing skin ulcers need not be daunting. For the FP, it means providing the optimum conditions for wound healing to progress.

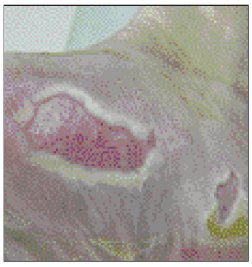
Skin ulcers are common and they are costly

Whether in community, acute, or long-term care facilities, skin ulcers are enormously prevalent and FPs are usually the first to encounter them. Prevalence of skin ulcers in the community care population is estimated at about 1% and about 70% of these are chronic ulcers, often of several years duration, arising from venous insufficiency.[1] In acute and chronic care facilities, the prevalence of pressure ulcers is estimated at 14.3% and 10.6%, respectively.[2] In diabetics, the literature reports a life time prevalence of diabetic neuropathic ulcers of 15% and a risk of amputation of 14%;[3] this literature should be viewed in light of the rapidly enlarging diabetic population in Canada.

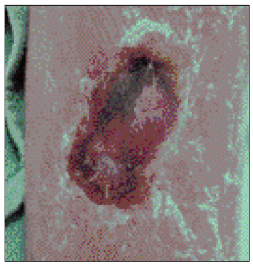
The cost of skin ulcers is enormous. Sibbald, *et al*[4] estimate the average duration of a skin ulcer to be 162 days, with an average cost of healing of $16,513.

Table 1
Managing moisture wound dressing paradigm

If it is wet... dry it!



If it is dry... wet it!



In the community care population, the prevalence of pressure ulcers is estimated at about 1%. About 70% of these are chronic ulcers, often of several years duration, arising from venous insufficiency.

Table 2

Dressing for the office

- Hydroactive gels and non-adherent toppers (*i.e.,* duoDerm gel® and telfa®)
- 10% betadine® solutions for ischemic wounds
- Topical antibiotic creams to manage excessive bacterial colonization

Types of skin ulcers

There are diabetic neuropathic ulcers, venous ulcers and pressure ulcers. It should be noted that pressure can play a major role in the pathogenesis of the other ulcers. Similiarly, while there are ischemic ulcers that exist as a distinct category, peripheral vascular disease (PVD) is also a common complicating factor of the other ulcers, especially in the case of diabetic neuropathic ulcers.

The role of the FP

FPs must attend to several key functions to allow healing to occur.

FPs must deal with the cause of the skin ulcer

This means that PVD, pressure and edema must be identified and addressed.

FPs must address systemic health issues that interfere with healing

This includes the control of systemic issues (such as lupus or gout) that might give rise to ulcers, the provision of adequate hydration and nutrition (including protein, vitamins and trace elements) and attention to medications that might interfere with healing. Medications that may be of concern include those that may:

- worsen perfusion (*i.e.,* ß-blockers and diuretics),
- worsen edema (calcium channel blockers),
- decrease mobility and therefore interfere with pressure relief (sedatives), or
- may interfere with the inflammatory phase of healing (steroids and non-steroidal anti-inflammatory drugs).

FPs must deal with local issues of bacterial growth

This includes the need for a physiological moist wound healing environment, debrided of non-viable tissue to facilitate the migration of fibroblasts.

Table 3

Peripheral vascular disease

- Thickened nails
- Hairless
- Thin, shiny skin
- Dependent rubor
- Pallor on elevation
- Intermittent claudication
- Non-palpable pulses

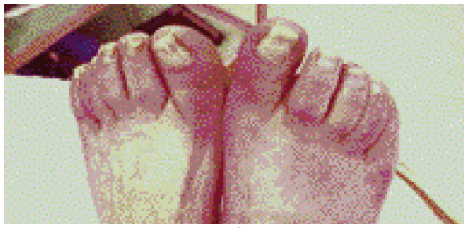


Figure 3. Clinical presentation of peripheral vascular disease.

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Arterial perfusion

Establishing the adequacy of arterial perfusion is the most critical issue in wound care for the FP because it establishes whether or not healing is likely to occur at all. It also determines other issues, such as:

- safety for compression of edema,
- safety of debridement and
- appropriate dressings.

Problems with arterial perfusion are generally found in ulcers below the knee and initially can be clinically evaluated in the office (Table 3).

If there is any doubt about the status of perfusion to the ulcer, then an Ankle-Brachial Index (ABI) should be obtained. This is a ratio of the ankle systolic pressure to the brachial systolic pressure. It can be obtained by:

- most acute care rehabilitation departments,
- home care skin and wound teams,
- vascular referral centres and
- some community radiology facilities.

An ABI of 0.8 or greater will always result in healing. ABIs below 0.8, to as low as 0.4, can generally heal (although slowly), providing careful attention is paid to all the other needs of the wound: pressure and edema relief, appropriate moist wound healing dressings and vigilantly watching for infection. ABIs of 0.3 or less do not usually heal. Patients with this degree of PVD may experience nighttime resting claudication. They require urgent referral to a vascular specialist. In the case of severe ischemia, such as this, the ulcer should not be debrided or compressed and the wound bed should be dried out with an iodine solution to discourage bacterial infection.

Pressure and edema control

Any element of pressure from a support surface, whether in a wheelchair or in a bed, generally requires a referral to a rehabilitation specialist for an unweighting device or a pressure relief surface. Neuropathic diabetic ulcers of the foot require a referral to a certified orthotist for a walking cast with a custom footbed to relieve pressure on the weight-bearing surface. It must be emphasized that pressure relief is a 24-hour necessity; even trips to the bathroom at night may interfere with healing.

Edema management is often misunderstood by all health care professionals. Patients are often sent for support stockings for treatment of chronic venous stasis-induced ulcers without first arranging for compression therapy to reduce the edema. Compression therapy takes form as some sort of variant of the Unna boot with wrappings that reduce the edema, which allows for improved perfusion to the ulcer bed. Without this, the ulcer will not heal. Acute care or home care-based rehabilitation departments can provide this service.

Table 4

What to do if a skin ulcer does not heal

- Consider infection (osteomyelitis): X-ray and bone scan
- Biopsy (basal cell carcinoma)
- Referral (possible vasculitic ulcer, need for extensive debridement)

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References

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2. Woodbury M, Houghton P: The extent of chronic wounds in Canada: What we know and what we don't know. Wound Care Canada 2005; 3(1):18-21.
3. Reiber G, Lipsky B, Gibbons G: The burden of diabetic foot ulcers Am J Surg 1998; 176(2A):5S-10S.
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