

MANAGEMENT OF A PRESSURE ULCER IN THE COMMUNITY

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PATIENT DETAILS AND HISTORY

The patient was a 52-year-old man who had been made redundant from a local engineering firm 15 years before and had not worked since because of ill health. He had been diabetic for 10 years after an episode of acute pancreatitis. This was managed by insulin therapy. He also had had chronic obstructive pulmonary disease for 20 years for which he took occasional oral steroid therapy and multiple prophylactic inhaler therapy. He had also been taking anti-depressants for the previous two years.

The patient had a previous history of venous ulceration (10 years before) and foot ulceration (two years ago) which had progressed to osteomyelitis, affecting the right midfoot region. He also had profound diabetic neuropathy that affected the digits and midfoot region.

ASSESSMENT AND ESTABLISHMENT OF TREATMENT OBJECTIVES

The patient's main concern was whether the ulcer would heal. He had a history of leg ulcers



Figure 1. The appearance of the patient's heel complaint on initial presentation to community care.

which had taken up to a year to completely heal. In addition he expressed concern that the ulcer would cause bone infection which he had previously experienced. The posterior aspect of the heel demonstrated a full thickness ulceration.

The surface area affected was about 4cm x 4cm extending from the weight-bearing area of the heel towards the Achilles tendon. The base of the wound appeared largely granular with minimal slough but surrounding tissues were saturated with exudate. The patient was very anxious

during the consultation and he required considerable reassurance that he would be given a full consultation and would receive the best available care.

A visual inspection of the skin revealed dry (anhidrotic) skin that was cool to the touch with bilateral ankle oedema. A visual inspection for foot deformity showed there were visible clawed

toe deformities on both feet, a low arch profile and deformity of the midfoot indicative of bone changes due to previous osteomyelitic damage. There had been osteoarthritic changes and charcot joint changes. During palpation of the foot pulses, the posterior tibial and dorsalis pedis pulses were deemed unreliable due to pitting oedema. As a result, the patient was then given a Doppler assessment which revealed weak biphasic pulses which may be suggestive of mild to moderate peripheral arterial disease. This may be due to the normal aging processes or thickening of the arterial wall associated with long-term diabetes resulting in loss of the normal elasticity of the vessel. In

either case the consequences are compromise of peripheral circulation.

Monofilament testing undertaken over three points on both feet to establish presence of protective pain sensation revealed absent sensation noted on all areas tested. The patient was wearing industrial safety boots with steel toe caps. They were old work boots to protect his toes due to the lack of sensation. In addition they accommodated his ankle swelling.

TREATMENT

The patient's dressing was removed from the right foot. Strike through of exudate was noted on the dressing and bandages. The primary dressing selected was an impregnated honey dressing applied directly onto the wound site. The properties of the honey dressing were selected in order to provide antimicrobial properties, to assert an anti-inflammatory action and stimulate new tissue growth (Marshall, 2002). A secondary foam dressing was applied for absorptive properties and to provide direct mechanical protection of the wound.

Liaison with district nursing team was undertaken to discuss and negotiate a shared care dressing regimen and to pool management strategies for optimising healing time. The patient was advised to see the district nurse in three days and return to the community clinic in seven days.

The patient's GP was contacted to request antibiotics for the patient who was at risk

of infection as he had a compromised immune system due to the intermittent oral steroid therapy which would mask the normal signs of inflammation necessary to stimulate the immune response and subsequent healing processes. In addition, an appointment with a practice nurse for dietary advice to maximise the patient's nutritional status was requested. Consent was given to take a dated photograph of the wound appearance to enable visual comparison on subsequent visits.

INTERVENTIONS

Managing the pressure ulcer required provision of critical off-loading strategies via provision of a heel lift suspension boot and modified therapeutic footwear to relieve pressure on the vulnerable tissues. A heel lift suspension boot was provided for the patient to wear in the evening and in bed (Figures 4 and 5). This would shield the compromised tissues from shear forces and intermittent compressive stresses. The patient was given a modified therapeutic boot (Figure 6) which would maintain mobility, patient independence and help stimulate circulatory perfusion to the devitalised tissues. The patient was advised to self adjust the Velcro fasteners on the heel lift suspension boot (Figures 4 and 5) to accommodate the foot shape and dressings, to wear gradually, an hour at a time and to monitor for signs of localised swelling or discomfort prior to use in bed. Should either of these occur the patient was advised to refrain from using the boot and seek immediate consultation with the clinician. The patient was advised not to walk around



Figure 2. Application of the honey dressing.



Figure 3. Application of the hydrocellular heel dressing.



Figure 4. The heel lift suspension boot.



Figure 5. The heel lift suspension boot in use.

in the heel lift suspension boot and this should be reserved for the modified therapeutic shoe (Figure 6) and therapeutic shoes only (Figure 7) with similar advice reiterated for these offloading devices on monitoring for signs of swelling/discomfort or minor skin trauma.

CLINICAL OUTCOMES TO BE REVIEWED

After treating the patient it was important to:

- ▶▶ Liaise with the district nursing team to review the weekly shared care dressing regimen and identify any changing needs
- ▶▶ Assess success and use of off-loading therapies
- ▶▶ Establish the presence or absence of infection
- ▶▶ Assess photographs to appraise wound healing progress
- ▶▶ Provide therapeutic footwear to accommodate foot deformity.

The shared care weekly dressing regimen resulted in considerable improvements in the quality of the surrounding tissues and assisted in reducing the amount of exudate produced. In addition, the size of the wound reduced in diameter by 2cm over a 6-month period. The wound, however, remained unhealed after 12 months of intervention. Despite this there were positive benefits to be seen in terms of the patient's psychosocial status as the off loading therapies helped maintain the patient's mobility and independence.

CONCLUSIONS

This case study reveals the challenge of managing the complexities of pressure-related wounds. In such a situation the concerns are as follows:



Figure 6. The patient wears a modified therapeutic shoe to accommodate his foot deformities.

The psychosocial impact of redundancy

Depression is often linked to ongoing chronic disease and a patient's ability to positively address his health may be severely compromised. Standard 3 of *The National Service Framework for Diabetes* aims to ensure that people with diabetes are empowered to enhance their personal control over their day-to-day management of diabetes. Supporting self-care is an essential element of any diabetes care package and provision of high-quality structured education can have a major impact on quality of life and clinical outcomes.

Off-loading mechanisms

Removal of pressure, known as off-loading, can be achieved by a number of strategies including avoidance of weight bearing, the use of irremovable and removable cast walkers, half shoes, orthotic devices and therapeutic footwear. In the presence of neuropathy,

patients with diabetes generally develop foot ulceration over sites of high pressure and shear on the plantar aspect of the foot related to normal walking (Armstrong et al, 2001).

Multidisciplinary care

Standard 12 of the diabetes NSF states all people with diabetes requiring multi-agency support will receive integrated health and social care.

Care planning is an inclusive process supporting an ongoing partnership between healthcare professionals and people with diabetes. The process of agreeing a care plan enables people to be actively involved in deciding how their diabetes will be managed.

Dressing selection

There is no single ideal wound dressing for the diabetic foot, and no evidence exists to suggest that any particular wound dressing is more effective for diabetic foot ulceration.



Figure 7. The therapeutic shoe used by the patient to relieve pressure to the ulcer.

Thomas (1997) suggests that dressing selection should consider: wound type, location, wound characteristics, bacterial profile, dressing conformability, low-adherence, antibacterial properties and patient-related factors such as compliance, the need to bathe and activity levels. Management of wound exudate is imperative to maintain a moist wound environment. The presence of excessive exudate can result in peri-wound maceration. Maceration can result in an increase in wound dimensions (White and Cutting, 2004).

The role of education in patient care

The NSF for diabetes has contributed to the focus on structured education in an attempt to prevent some of the devastating complications associated with diabetes. It recommends structured education to improve the patient's knowledge and

understanding and enabling effective self-care. DESMOND (Diabetes Education and Self Management for Ongoing and Newly Diagnosed) is a structured group education programme for people with type 2 diabetes. It supports patients in identifying their own health risks and by setting their own specific behavioural goals. Diabetes X-PERT Programme is a structured group education programme for people with type 2 diabetes based on the theories of empowerment and discovery learning. The programme has been widely evaluated in randomised controlled trials and has shown to have a positive impact on clinical, lifestyle and psychosocial outcomes. The patient was given details and recommended to contact the local DESMOND trainer, however, at the time of initial consultation the patient reported feeling overwhelmed by the number of healthcare

appointments he had and didn't wish to pursue this at this stage. This suggestion was revisited at a later date when the patient reported that he was much more comfortable discussing his concerns regarding diabetes with the practice nurse at his local surgery, hence communications were maintained with the practice nurse regarding the progress with his foot ulcer.

The role of previous pathophysiological damage in the aetiology of diabetic foot ulcers

There are often continuous risk factors that will result in subsequent episodes of ulceration. Hence the patient/practitioner partnership must endeavour to pursue all best evidence for lifestyle moderation and administration of therapeutic intervention measures that will help to produce positive clinical outcomes. **WE**

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