

Working in partnership: holistic care for a diabetic patient with a heel wound

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Abstract

This case study describes the care and management of an Indigenous patient who sustained a pressure injury during surgery. After discharge from hospital community nurses worked in partnership with the patient and his family and, despite a history of diabetes and multiple comorbidities, wound healing was achieved. It demonstrates that a collaborative holistic approach, where health professionals, the patient and family work together, has the potential to achieve good health outcomes.

Keywords: Pressure injury, collaboration, partnership, empowerment.

History

Mr H, a 65-year-old Aboriginal man, was referred to community nursing with a pressure injury on the lateral aspect of his left heel following hospitalisation for cardiac arterial bypass grafts (CABGs). His medical history included Type II diabetes mellitus, retinopathy and peripheral neuropathy. He developed end-stage kidney disease in 2001, for which he received renal dialysis three times per week. In 2000 he suffered a cerebro vascular accident, which left him no deficit. He suffered from hypertension and ischaemic heart disease and had a pacemaker placed in 2001. His medications included insulin (Insulin Mixtard), digoxin (Lanoxin), aspirin, atorvastatin (Lipitor), pantoprazole (Somac), an ACE inhibitor (Coversyl) and a beta blocker (Carvedilol). He also took a calcium supplement (Caltrate) and regular paracetamol. He reported that his blood glucose levels had

been well-controlled and that, with some assistance from his wife, he was self-caring with blood glucose monitoring and medication administration.

Mr H lived with his wife and they were both self-caring with activities of daily living. They belonged to a very supportive extended family.

Examination – wound assessment

Examination of the wound on admission to community nursing revealed a Stage 3 pressure injury (Figure 1). There was partial thickness skin loss extending to the dermis on the lateral aspect of his left heel. The wound measured



Figure 1: On admission.

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5cmx4cm, with a depth of 2cm. There was no sinus, tracking or undermining. The wound bed showed 75% granulation and 25% sloughy infected tissue. The granulation tissue was friable with rolled edges. There was a moderate amount of haemopurulent exudate and an odour was present. The periwound skin showed signs of maceration. Mr H reported that he felt no pain at the site of the wound.

Holistic assessment and care planning

During the first home visit, a comprehensive holistic assessment was carried out and, in collaboration with Mr H and his wife, a care plan was developed. A pressure injury risk assessment, using the *Waterlow Risk Assessment Tool*¹, scored 20+, which meant that Mr H was assessed at "very high risk" for developing pressure injuries. Preventative interventions were required and Mr H was supplied with a pressure relieving mattress, gel cushion and sheepskin.

The agreed plan of care included:

- Implement preventative protocols to preserve skin integrity:
 - Protect against forces of pressure, shearing and friction to the skin and its underlying structures.
 - Maintain and improve tissue tolerance to pressure.
 - Minimise the effect of intrinsic and extrinsic factors.
- Implement a wound management plan to promote wound healing:
 - Prevent further deterioration to the pressure injury on the left heel.
 - Prepare wound bed to facilitate healing.
 - Maintain moisture balance.
 - Manage bacterial burden.
 - Promote advancement of wound edges.
 - Ensure adequate nutritional intake for tissue repair.
- Encourage mobilisation and self-care.
- Refer to and liaise with multidisciplinary team as required.
- Maintain cultural awareness and provide psychosocial support.

Mr H's family was supportive and caring. While Mr H was independent with activities of daily living, his wife and children had always assisted in the monitoring and

management of his diabetes. They were keen to be involved and learn about the management of his wound.

Wound management

The sloughy appearance, together with the malodorous exudate indicated that a high bacterial burden was present in the wound. In order to decrease the bacterial burden and prepare the wound bed for healing an antimicrobial ointment, cadexomer iodine (Iodosorb; Smith & Nephew) was applied to the wound bed. Foam dressings (Allevyn; Smith & Nephew) were used to maintain moisture balance and to protect periwound skin. Mr H's wife was very keen to contribute and she was taught how to clean the wound and change the dressing. The community nurse continued to visit twice weekly and monitored the wound. During the weeks that followed there was evidence that the action of the antimicrobial ointment had been effective. The amount of exudate, sloughy tissue and the offensive odour gradually decreased and after three weeks the application of antimicrobial ointment was ceased.

A wound assessment five weeks after admission to community nursing showed red granulation tissue, advancement of the wound edges and minimal haemoserous exudate. The wound measured 3cmx2cm and the depth had reduced to 1cm. The dressing was changed to Biatain heel dressing (Coloplast). Figure 2 shows the wound three months after admission; epithelial tissue was present and a small area of granulation remained. The wound continued to heal and skin integrity was restored four months after admission.

Multidisciplinary care



Figure 2: Three months after admission.

Mr H was referred to a dietitian and a nutritional assessment determined he was eating a healthy, balanced diet and drinking adequate amounts of fluid. Supplementing his diet with a daily multivitamin tablet was recommended. He was also referred to a podiatrist for assessment and support. The podiatrist assisted in offloading pressure to the heel area and provided advice on footwear. Mr H was regularly reviewed by his general practitioner to monitor blood chemistry and general health. He attended appointments with specialists and his diabetes was regularly monitored by an endocrinologist and a diabetic specialist nurse educator.

Discussion

Mr H developed his pressure injury during cardiac surgery. He had several risk factors that predisposed him to developing pressure injuries: immobilisation during prolonged surgery and the inability to respond to stimulus of pressure while under anaesthetic²; diabetes^{2,3}; and renal failure². His pressure ulcer risk assessment put him in the "very high risk" category for developing pressure injuries.

Mr H's diabetes and comorbidities posed significant challenges in the management of his wound. The prevalence of micro- and macrovascular complications is significantly higher in the diabetic patient who requires dialysis than in the diabetic patients without renal disease⁴ and these patients are at a considerable risk of developing foot problems^{5,6}. Peripheral arterial disease, anaemia and metabolic features of renal disease and tissue hypoxia associated with the process of dialysis contribute to the high risk of foot complications⁶.

Wound healing is compromised in the person with diabetes. Diminished peripheral blood flow, decreased local angiogenesis and an impaired ability to fight infection delay the healing process^{7,8}. Mr H's wound showed signs of high bacterial burden without the classical symptoms or signs of infection. When bacteria have invaded the wound but clinical signs of infection are not obvious, the terms "critical colonisation" and "topical infection" are used⁹ and this is known to cause delayed wound healing^{9,10}. A trial of a topical antimicrobial is the recommended prior to performing bacterial cultures and using systemic antibiotics⁹⁻¹¹. The use of cadexomer iodine to Mr H's wound was sufficient to reduce the burden and to reset the stage towards the normal healing process. The use of foam dressings avoided maceration of periwound tissue and created an environment that facilitated cell migration within the wound.

Many disciplines were involved in caring for Mr H. Referral to a podiatrist and a dietitian were made and Mr H continued to be monitored by medical specialists. Collaboration between health professionals maximises the outcomes for people with compromised wounds. Adequate offloading of pressure is essential in the healing of foot wounds in the person with diabetes^{6,8}. Diet influences wound healing and an assessment by a dietitian is recommended to ensure optimal dietary intake for tissue repair^{2,11}.

Holistic, patient-centred care and a team approach is necessary in order to support the person with a chronic condition and to manage the complexity and variety of issues that may evolve¹². The impact on family and carers should not be underestimated and it is important to recognise the carers and the support they may need¹³. While Mr H was independent with activities of daily living, his wife took on the role of carer and was keen to learn and participate in all aspects of his management. When caring for someone from a different cultural background, it is essential to consider what is important to them¹⁴. Family was very important in Mr H's culture and a close bond with his immediate and extended family was evident. It was important for them to place the nurse in the context of her family, to have a role and place for her in respect to their sense of family. During the visits, conversations about family, places and relations were equally as important as discussing the progress of the wound. The shared understanding of what was important in their lives led to meaningful conversations about their own approaches to managing their health. Mr H's wife was happy she could contribute to the dressing regime. It gave the family a role, a sense of ownership and independence. They were encouraged and supported in self-managing and taking ownership. Having significant input in the management of their illness is important for Indigenous people: it creates an environment where they work with health professionals as 'partners' in the care^{15,16}. Partnerships, empowering people through services that encourage self-management and working alongside them towards a common goal are effective strategies to achieve good health outcomes and quality of life¹³.

Conclusion

Mr H's diabetes and multiple comorbidities posed challenges in the healing of his pressure injury. While an accurate wound assessment and collaboration with other health professionals contributed to the healing of this wound, Mr H and his family

were always at the centre of the care. They were supported in self-management; they had a sense of ownership. Considering the whole patient and taking into account what is important to them is essential when caring for someone from a different cultural background and paves the way for a 'partnership' to develop. This case study demonstrates that a collaborative holistic approach, where health professionals, the patient and family work together, can achieve a good outcome.

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