Achieving positive outcomes for patients with non-healing wounds – A case study

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Introduction

A chronic (hard to heal) wound is defined as a wound that does not heal in the orderly stages of the healing process, or is 40–50% unhealed after four weeks of appropriate treatment.[1] Living with a chronic wound can significantly impact health-related quality of life. The associated pain, discomfort, and limitations in daily activities can lead to frustration, anxiety, and depression.[2] Patients may feel isolated due to reduced mobility or social withdrawal. The uncertainty of healing progress and fear of complications can also cause stress.

This case study involves Mrs Whatling's, a 78-year-old female who was referred to the Tissue Viability Team with a large wound to her right lower leg. Mrs Whatlings's past medical history included hypothyroidism, a closed fracture of the lateral malleolus, seropositive rheumatoid arthritis, thyrotoxicosis and a total knee replacement. She lives with her husband and relies on a wheelchair to go out due to extreme wound pain. Due to leaking bandages, Mrs Whatling felt uncomfortable to sleep in the same bed as her husband.

Method

On initial assessment by the TVN team, Mrs Whatling had a circumferential wound measuring 19.0 cm x 22.8 cm on her right lower leg which had been present for over 2 months. She had oedema and cellulitis to the limb.

Her ankle measured 26.8 cm and her calf 43.2 cm. The peri wound skin was macerated due to very high levels of exudate, and the wound bed was covered with 90% slough and 10% granulation tissue. Mrs Whatling reported continuous pain at a severe level of 10 using a numerical rating scale of 0-10.

Despite various previous treatments with antimicrobial dressings and reduced compression therapy, Mrs Whatling's wound was showing no signs of healing. Due to her numerous allergies she was very anxious about trying new dressings as she thought that they may cause her more pain. For pain management, she relied on Co-codamol 30mg/500mg, taking two tablets four times a day.

As Mrs Whatling's wound was static, treatment with a neuromuscular electrostimulation device (geko®) was discussed with her.

The geko is a small, self-adhesive, wearable device that is applied to the surface of the skin on the lateral aspect of the leg just below the knee, over the head of the fibula. It delivers a charge-balanced electrical pulse once per second to the common peroneal nerve which passes through this site, eliciting a muscular twitch of the foot, so activating the calf and foot muscle pumps, and thus increasing venous, arterial, and microvascular flow.[3,4] The device has several stimulation levels to ensure a dorsiflexion is achieved whilst being comfortable for the patient.

The aims of using the geko device were to prevent further infection, reduce pain and exudate levels, decrease oedema, and promote healing. The treatment regimen included the use of Cutimed® Sorbact®, Zetuvit®, reduced compression bandaging, and the geko device.

Mrs Whatling was reluctant at first but eventually agreed to the geko device. She was given education on how to apply and remove the device, and also on the care of her skin. Mrs Whatling wore the geko device for 12 hours per day, 7 days per week.

Results/Discussion

Mrs Whatling tolerated treatment with the geko® device well. After just 24 hours, she reported that her pain had greatly reduced and that she was more than happy to continue with the therapy.

Over the next 10 weeks, Mrs Whatling's wound showed remarkable progress. Her wound was reducing in size, and exudate levels decreased to the point where she was able to sleep in the bed with her husband again. Due to the reduction in her pain, Mrs Whatling could actually mobilise with the use of 2 sticks instead of using a wheelchair. She was also able to tolerate 40mmHg compression instead of a reduced bandage system. By the end of the treatment period with the geko device, her ankle circumference measured 21.5 cm and her calf 33.3 cm.

The TVN team were amazed at the improvements in Mrs Whatling's wound after adding the geko device to her treatment regimen. After 10.5 weeks Mrs Whatling's wound measured 2cm x 2cm, and treatment with the geko device was discontinued, due to a skin irritation which quickly resolved. Her wound went on to completely heal 3 weeks later.

15 Jan 2024 lateral

15 Jan 2024 medial

23 Feb 2024 lateral

23 Feb 2024 medial

02 April 2024 lateral

Conclusion

The ongoing management of ulcers, including wound care, compression bandaging, and lifestyle adjustments, can affect a person's overall well-being. Individuals with chronic wounds can experience reduced physical function, emotional distress, and social limitations, all of which contribute to a diminished quality of life.

This case study emphasises the challenges faced by patients living with chronic wounds. Through the integration of geko device therapy into the wound management plan, Mrs Whatling's wound and associated symptoms improved significantly. This highlights the importance of adaptive treatment strategies in achieving better outcomes for patients with non-healing wounds.

References

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