An Evaluation of the Use of Maxxcare Pro Heel Boot in a Rehabilitation Care Setting

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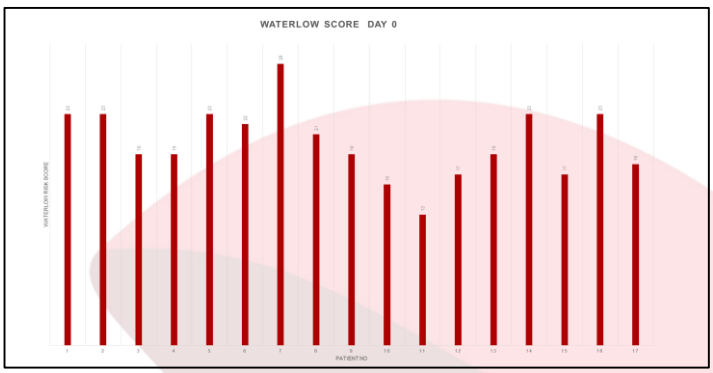
WELSH WOUND INNOVATION ARLOESEDD CLWYFAU CYMRU

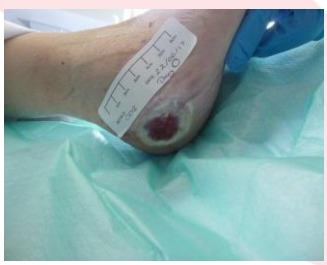
Introduction: The aim of the evaluation was to observe the performance of the Maxxcare Pro Heel boot in a rehabilitation setting and review the acceptability of the boot in a cohort of patients with restricted mobility at risk of pressure damage.

Methods: Patients were assessed on 4 separate occasions during the 14-day evaluation. Demographic data including gender, age and medical history were recorded along with measurements of the circumference (cm) of the posterior heel to the anterior region of the ankle joint to ensure patients were issued with the correct size boot. An assessment of current pressure ulcer risk was established using the Waterlow score and all patients were categorised as being either at risk (10+), high risk (15+) or very high risk (20+) of pressure damage. The type of mattress was also recorded as being either static or dynamic. During each assessment, photographs were taken of the patients' heels and a skin assessment was performed. Patients were also asked to rate their comfort whilst the boots were in place. Clinicians were asked to rate if they agreed or disagreed that the heels were being effectively offloaded whilst the patients were wearing the Maxxcare Pro Heel boot. This was recorded using the 5-point Likert scale. Opinions on ease of application and removal were also collected. The data was compiled at the end of the 14-day evaluation period and transferred into an Excel database for analysis (Microsoft 2010).

Image 1: Maxxcare Pro Heel Boot



Case Presentation 1: A 57-year-old lady was admitted to a rehabilitation ward following amputation of her left leg after developing complications from an infected diabetic foot ulcer 10 months earlier. The lady was a type 1 diabetic with nephropathy requiring dialysis for end stage renal disease 3 times a week. She was wheelchair dependent and used her right leg to transfer from bed to chair with assistance. She was assessed as Very High Risk with a Waterlow score of 23. For 5 months, her category 2 pressure ulcer was being dressed daily but she had found difficulty in finding an appropriate pressure relieving device to offload the heel that allowed her transfer from her bed to chair. On examination, the wound was clean and being dressed with an appropriate dressing. The wound measured 3.4 cm^2 in surface area. The Maxxcare Pro Heel boot has a non-slip base for patients who transfer from bed to chair and is also suitable for patients who are transferring with no foot protection. After application of the Maxxcare Pro Heel boot the patient reported that her foot felt more comfortable and the foot plate of her wheelchair no longer felt uncomfortable. By day 7 the wound had decreased in size by 1.9 cm^2 and the wound continued to improve. On day 14, the wound had decreased to less than 0.5cm^2 in surface area. Due to her positive experience, she continued to wear the boot post-evaluation.



Results: Thirteen patients completed the evaluation. Two patients withdrew consent, 1 patient died and another 1 patient became acutely unwell and lost capacity to remain in the evaluation. Eleven patients with intact skin completed the evaluation with no evidence of pressure injury to the soft tissue overlying the calcaneal bone. One of the patients with a category 2 pressure ulcer had a reduction in wound surface area of almost 50%. The patient recruited with category 1 pressure damage had complete resolution within 3 days of wearing the Maxxcare Pro Heel boot. This suggests that the boot may also be used as an adjunct therapy to promote wound healing in patients with existing pressure damage. Thirteen (76%) patients reported that the boots were comfortable to wear. The evaluation found that most patients felt the boots were very good at offloading the heels whilst they were in bed. They also found them comfortable to wear and reported that they were easy to apply and remove. Feedback from the clinicians that applied and removed the boots was also positive. They stated that the boots were easy to apply and remove with minimal instruction required. One hundred percent of clinicians involved in the evaluation reported that the boots effectively offloaded the heels whilst patients were in bed.

Discussion: Finding an appropriate offloading device which can limit the adverse effects of pressure, friction and shear forces whilst the patient is in bed or in a sitting position can be difficult. Patients following hip surgery or cerebrovascular accident (CVA) may have a reduction in strength, alterations in posture or muscular contractions in the lower limbs which can pose significant difficulties with using an off-the-shelf pressure-relieving device. The Maxxcare Pro Heel boot has been designed to effectively offload the heel during extensive periods of unrelieved pressure whilst in bed or in a sitting position, whilst reducing friction and shear forces. The outcomes from this evaluation suggest that the Maxxcare Pro Heel boot could be effective at protecting the heels of patients at risk of pressure damage.

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