

Combined pressure and peripheral vascular disease foot ulcers: Avoiding surgical intervention using an Alginogel

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Introduction

To explore the benefits of utilising an Alginogel in the management of a combined heel pressure ulcer with exposed hallux and in the presence of ischaemia. Peripheral vascular disease (PVD) refers to any disorder of the circulatory system outside of the brain or heart. It is, though, often used as a synonym for peripheral arterial disease and is the most common disease of the arteries. Atherosclerosis, a build up of fatty materials inside the vessels, or hardening of the arteries causes the condition. Over time the artery becomes blocked, narrowed or weakened. Blood vessels in the legs are the most commonly affected (WebMD 2018).

A pressure ulcer is defined as a localised injury to the skin and/or underlying tissue usually over a bony prominence, as a result of pressure, or pressure in combination with shear. A number of contributing or confounding factors are also associated with pressure ulcers (EPUAP 2014).

They pose a financial burden to the NHS with nearly 700,000 people in the UK affected by them annually; the most vulnerable being over the age of 75 (Thorpe 2017). Underlying comorbidities, such as peripheral neuropathy and/or peripheral arterial disease (PAD), can increase the risk of heel pressure ulcers (NICE 2012).

Method

Jane (pseudonym) is a 97 year old lady, with a medical history of diabetes, hypertension, dementia and peripheral vascular disease. She had a necrotic pressure ulcer to her heel measuring 60x40mm. Previous medical interventions had included; microbiology swabs, the use of a wide range of dressings and the commencement of pressure off loading devices. The patient's leg was severely retracted which made management of the

wound even more complex.

The Podiatrist aim was to support autolytic debridement of the necrotic tissue in order to encourage the formulation of granulation tissue and optimise wound healing; necrotic tissue can delay healing and increase the risk of infection. An enzymic Alginogel primary dressing, Flaminal Hydro, was chosen in order to aid debridement of devitalised tissue and reduce the risk of infection; Flaminal Hydro has a less proportion of alginate than its Forte sister and is recommended for low to moderately exuding wounds. A secondary adhesive foam bordered dressing was utilised for absorbency and protection.



Result

Flaminal Hydro can be used for an unlimited length of time due to its non-toxic components and is suitable for all stages of wound healing. In this instance it was utilised as the primary dressing for the healing trajectory; approximately 33 weeks. Throughout this period optimum moisture balance was sustained encouraging continuous rehydration of the necrotic tissue and optimising sharp debridement of the non viable tissue. Wound infection was prevented and granulation tissue

prevailed; the wound successfully healed and remain healed.



Discussion

Peripheral arterial diseases affects about one in five of the population over the age of 60 years of age and can result in foot ulceration, loss of limb and even death. Wound management considerations are taken to a higher level of complexity in this calibre of patient, particularly when coupled with the exposure of bone.

Devitalised tissue mechanically prevents epithelisation creating a prolonged interruption of wound healing and averts the provision of a moist wound environment. (Leaper et al 2019) Flaminal Hydro, an enzymic alginogel, was selected for its antimicrobial properties, its capacity to create a moist ambience and ability to encourage debridement.

Conclusion

Globally, hard-to-heal wounds have an overwhelming impact on patients, caregivers and on society in general; with an estimated cost of £3.2 billion to the NSH highlighted in 2012. Interruptions in wound healing are typically associated to microbial colonisation

and/or infection, high levels of exudate, extensive tissue loss or exposure of critical structures (Gupta et al 2016).

The key factors in advancing wound healing are debridement, infection control (the application of antimicrobials) and wound dressings; skin grafting can also be a considered option (Azevedo et al 2020)

The Podiatrist concluded that the initiation of this management regime deterred probable wound infection and potential surgical intervention/ amputation; which are common in complex foot wounds with exposed bone. The clinical outcome exceeded the Podiatrists expectations.

The feedback obtained from Jane and her family was that they also were delighted with the result and that the potential for hospital intervention and possible amputation had been avoided; without the need for any hospital admissions throughout the wound management period.

References

1. WebMD (2018) Peripheral Vascular Disease. www.webmd.com
2. European Pressure Ulcer Advisory Panel (2014)
3. Thorpe, L (2017) Assessing, preventing and managing heel pressure ulcers. *Wounds UK*. 13 (2) 67 - 70
4. National Institute for Health and Clinical Excellence (2012) Peripheral Arterial Disease: Diagnosis and Management. CG 147. Available at: <https://www.nice.org.uk/guidance/cg147/resources/peripheralarterial-disease-diagnosis-andmanagement-35109575873989> (accessed 09.04.2020)
5. Leaper, D, Lewis, N & Roberts, C (2019) Development of a UK cost analysis model for the various methods of debriding leg ulcers. *Wounds UK*. 14 (2) 54 - 61
6. Gupta, S, Gabriel, A, Lantis, J & Teot, L. (2016) Clinical recommendations and practical guide for negative pressure wound therapy with instillation. *International Wound Journal* 13 (2) 159 - 174
7. Azevedo, MM, Lisboa, C, Cabrado, Luis, Vaz-Pina, Cidailia & Rodrigues, Acacio (2020) Hard-to-heal wounds, biofilm and wound healing: an intricate interrelationship. *British Journal of Nursing Supplement* 29 (5) S4 - S13