

A Challenge in Managing Diabetic Foot Ulcer with End Stage Renal Disease: A Case Study

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Initial Presentation

After 4 Weeks



After 12 Weeks



Introduction

End Stage Renal Disease (ESRF) is an independent risk for developing wound in patient with diabetes¹. Over-granulation is defined as an excessive granulation tissue above surrounding healthy tissues. It is often friable and produces an increase in exudate and hence is difficult to manage². The objective of this study is to evaluate the effect of Retro Tech Dressing (RTD™) in managing infected overgranulation tissue in diabetic foot ulcer (DFU) with end stage renal disease (ESRF). RTD™ absorbs protein-rich exudates from the wound and has effective antimicrobial properties⁴.

Case Presentation

In this case study, we presented a 43-year-old hypertensive diabetic female who was diagnosed to have ESRF in August 2017. On September 2017, she suffered from a right DFU due to traumatic tight shoes after a period of prolonged walk. She came to us in October 2017 for continuation of care after surgical wound debridement. After 6 weeks on multiple dressing products, her wound did not improve with a new presentation of overgranulated tissue on the wound bed. Initial assessment revealed two wounds on the right plantar surface: wound A (forefoot area) and wound B (midfoot area). Wound A

(overgranulated area) size is 5cm x 3cm x 1.0cm with bleeding and pus, and wound B size is 7cm x 1.5cm with granulation tissue.

Methodology

Wound progression was assessed using the standard wound evaluation form provided by the Malaysia Ministry of Health (MOH). A standard protocol for wound management using modern dressing was accomplished. Sharp debridement was done when indicated. The wound was cleansed with a super-oxidised solution (Dermacyn™) combined with RTD™, which acts as both primary and secondary dressing. The patient was given education on the method of self-diabetic control, appropriate nutrition consumption, and foot care with off-load therapy. Furthermore, her medication was being optimized and adherence to dialysis is advocated.

Result Analysis

Upon appropriate wound management with RTD™ dressing and approximately 3-5 days each follow-up, the wound has attained complete re-epithelialization within 12 weeks of treatment without any other complications.

Discussion

The presence of infected overgranulation tissue prevents cell epithelisation and hence remains a challenge for further management. Altered chemical messengers in ESRF prevent wound healing progression despite of holistic approaches given. Gentian violet and methylene blue within the RTD decreased bacterial load and absorb highly exudate as well as inhibit further development of overgranulation tissue. Nevertheless, the exact mechanism is poorly understood therefore needs further trial.

Conclusion

The conclusion derived from this study is RTD™ is effective in managing infected and overgranulation condition in DFU with ESRF. It is mainly due to the presence of methylene blue and gentian violet as well as silver polyurethane foam inside the dressing that derived the positive effect³.

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