The importance of assessment and dressing selection in the management of an infected amputation site in a diabetic patient

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Summary

A 74-year-old female lady with insulin-controlled diabetes and heart disease had a below knee amputation on her right leg 3 years after a below knee amputation on her left leg. Following the second amputation, the patient was non-compliant and the wound became infected. The Community Staff Nurse and the Tissue Viability Nurse worked closely together to create an individualised treatment plan that would improve patient compliance, facilitate healing and prevent the need for further amputation.

Introduction

An aging population and rising obesity rates have led to an increase in the prevalence of diabetes. An estimated 336 million people worldwide are affected by this chronic and progressive disease.¹ Each year in the UK, around 5,000 people with diabetes undergo amputations of leg, foot or toe, equating to approximately 100 lower limb amputations each week.²

Case study

This case study describes the challenges of preventing further amputation for Mrs H; a 74-year-old lady with insulin-controlled diabetes and heart disease. Mrs H became wheelchair-bound following below knee amputation of her left leg as a result of ischaemia in 2008. She lived alone, had poor nutritional intake and was a smoker. She was also grieving the death of her son who died whilst on holiday at the start of her treatment.

Mrs H was admitted to hospital in November 2011 with critical ischaemia of her right foot compounded by gangrene. She required a below knee amputation of her right leg, however the stump became infected delaying her return home. After one month, Mrs H discharged herself, against medical advice. The hospital arranged follow up her return home. After one month, Mrs H discharged herself, against medical advice. The hospital arranged follow up.

When the DN team assessed the wound 11 days later; it measured 21cm x 11cm and 4cm deep. It comprised of 30% necrotic tissue, 60% slough and only 10% of granulation tissue. The wound was painful with a high volume of purulent and offensive green discharge, indicative signs and symptoms of infection. At this point Mrs H refused either a visit by the doctor or readmission to the hospital. However the Tissue Viability Nurse (TVN) was contacted for advice and support as Mrs H’s wound healing potential was compromised by her diabetes, smoking and poor nutritional status.

Treatment plan: Flaminal® Forte and KerraMax®

Following a holistic assessment, a treatment plan that encompassed primarily a reduction in bacterial load, pain relief, debridement of necrotic and sloughy tissue and a decrease in exudate levels was devised. Wound infection was managed aggressively with oral antibiotics, flucloxacillin and azithromycin, and a topical antimicrobial enzyme alginogel, Flaminal® Forte. Flamina® Forte was selected to debride the wound and manage exudate levels. Delicate and painful areas were dressed with Adaptic Touch, a silicone-coated dressing. KerraMax®, a super absorbent dressing, under K-soft bandage wadding was selected to further assist with exudate management, all held in place with a light support bandage and Comfifast, an elasticated viscose stockinette. Pain was managed with fentanyl patches and pregabalin for phantom pain. Dressing changes were daily initially to enable close monitoring of the infected wound.

Over a four month period the wound reduced in size to 3cm x 3cm, bacterial load decreased and wound bed improved. Mrs H tolerated the dressing regimen well with no complaints of pain either during or between dressing changes. She had confidence in the treatment plan as wound healing was clearly evident, and this improved her mood considerably.

Discussion

Both wound and patient were challenging; it is known that healing in patients with diabetes is affected and complicated by poor glucose control. Mrs H’s poor nutritional intake was detrimental to healing and this was further impacted by her smoking, which attenuates wound inflammation and fibroblast proliferation.³ Infection placed Mrs H at risk of requiring further surgery and it was vital that this was addressed both orally and topically.

Flaminal® [Crawford Healthcare, UK] is an antimicrobial enzyme alginogel that combines the benefits of hydrogels and alginate with an antimicrobial to help reduce bacterial load and debride necrotic and sloughy tissue.⁴ Using this in combination with KerraMax® (Crawford Healthcare, UK) a super absorbent dressing that binds metalloproteinases and exudate inside the dressing, helped control exudate levels preventing further complications and discomfort.

Conclusion

The treatment plan selected by the DN and TVN team, particularly the use of Flaminal® Forte helped to control the wound bioburden and facilitate debridement, enabling healing and thus preventing the need for further surgery. This case study demonstrates the importance of a holistic assessment and careful dressing selection in the management of complex healing conditions. Mrs H still has some way to go but the outlook is much improved.

References

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