MANAGEMENT OF FOOT BURNS IN A PATIENT WITH DIABETES

GILLIAN HARKIN
Lead Clinical Podiatrist - Diabetes Department of Diabetes & Endocrinology, Victoria Infirmary, Glasgow

**Patient history**
A 44-year-old male, Mr M, with type 1 diabetes presented to A & E with burns to his right foot sustained five days earlier by placing the foot on a hot radiator. The patient was a smoker, had long-term poor glycaemic control and had a number of diabetes associated complications including retinopathy and peripheral neuropathy. He experienced neuropathic pain for which he takes amitryptiline. Mr M had palpable pedal pulses. His left hallux was previously amputated following a radiator burn to the foot in 2007.

**Wound history**
The medical staff at A & E immediately referred Mr M to the multi-disciplinary diabetic foot clinic at the Victoria Infirmary, Glasgow. On examination burns were noted to all toes on the right foot. There was also a necrotic ulcer on the right 5th MTPJ area. The foot was clinically infected with tracking cellulitis. CRP was elevated at 63. Hospital admission was recommended but the patient declined. Oral antibiotics (flucloxacillin) were commenced and it was agreed that the patient would return to the hospital for admission as an inpatient the following day.

Mr M was admitted to hospital for IV antibiotic therapy the following day. He remained as an inpatient for 11 days during which time the multi-disciplinary foot team reviewed the patient on the ward. At this stage the podiatrist debrided and dressed the wounds. Pressure relief was provided by the orthotist who issued the patient with a Darco multifit offloading shoe. He was discharged from the ward on Day 11 with no ongoing antibiotic therapy.

The patient attended the outpatient clinic one week later, Day 18. At this stage he had ulcers on all toes on his right foot and his right 5th MTPJ. The wounds on the right 3rd, 4th, 5th toes and 5th MTPJ were sloughy. The wound on the right 2nd toe was clean and granulating and the right 1st toe wound was covered in a dry eschar. There was maceration at the bases of the right 3rd, 4th and 5th toes due to high exudate levels from the digital wounds. The wounds were debrided and right 1st toe and 5th MTPJ dressed with Intrasite gel and Release healed. One wound that was dressed with Aquacel healed and the remaining wounds were covered in a dry eschar to manage exudate levels.

**Day 20**
By Day 20 the right 2nd and 3rd toe ulcers were clean and granulating. These wounds were reducing in size. However, all other wounds were sloughy and dehydrated with no significant reduction in wound size.

**Day 28**
By Day 28 the wound on the 2nd toe had healed but all other wounds remained sloughy and static in terms of wound dimensions. The maceration on the foot had resolved and there were no clinical signs of infection. All wounds were debrided and Flaminâ® Hydro application was started with Lyofoam as a secondary dressing. Spare Flaminâ® Hydro was issued for the practice nurse to continue applications between hospital appointments.

**Wound management with Flaminâ® Hydro**
Within two weeks of commencing Flaminâ® Hydro treatment (Day 41) all wounds were 100% granulating. The right 2nd toe had healed whilst the right 3rd toe was epithelialising. There were no clinical signs of infection. Flaminâ® Hydro was discontinued and lyofoam applied. All wounds progressed to complete healing.

**Day 41**

**Discussion**
Patients with diabetic neuropathy are at a greater risk of suffering an injury to the feet due to loss of sensation. Relatively small injuries can progress to ulceration and, in severe cases, lead to amputation. In fact, diabetic neuropathy is implicated in possibly more than half of all non-traumatic foot amputations. Therefore, there is an urgent need to facilitate healing. Multi-disciplinary diabetic foot clinics ensure all services are promptly available to a patient with a foot problem in a co-ordinated way.

With the initial dressings there was no significant progress in terms of maintaining moisture levels in wound, reduction in slough levels or reduction in wound size. The team agreed that a dressing was needed that was antimicrobial, and could hydrate and deslough the wound simultaneously. Flaminâ® Hydro is an antimicrobial alginate dressing which promotes moist wound healing and autolytic debridement. It has a unique mode of action. Flaminâ® Hydro has been shown to be active against a range of Gram negative bacilli, Gram positive cocci and fungi.

**Conclusion**
Mr M is at high risk of foot complications. The priority of the multi-disciplinary team was to prevent wound deterioration and to facilitate healing. A wealth of wound care dressings are available and it is the job of the multi-disciplinary team to draw on their knowledge and experience to choose the best dressing for the wound and the patient. For Mr M, none of the wounds dressed with Intrasite gel and Release healed. One wound that was dressed with Aquacel healed and the remaining wounds healed when the treatment regime was changed to Flaminâ® Hydro with Lyofoam as a secondary dressing.

**References**