

# Case study: Left foot post-amputation site treated with AQUACEL® Ag

Ireland V

## The Clinical Challenge

- To heal the post-amputation wound site by debriding devitalised tissue and promoting granulation.
- To manage any infection in the wound to prevent further tissue destruction.
- To help the patient maintain optimal blood glucose, blood pressure and blood lipid control by way of multidisciplinary input.
- To regularly review vascular status to prevent further amputation in the future.
- To regularly review accommodative orthoses and custom footwear to enhance limb function, mobility and quality of life.

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## The Patient

Mr S is a 79-year-old man with Type 2 diabetes mellitus and several complications including peripheral neuropathy, peripheral arterial disease and retinopathy.

In 2000 Mr S had a right below-knee amputation following many attempts to save the limb; a right tibio-peroneal angioplasty, femoral-popliteal bypass and surgical debridement had been attempted.

In 2003, following an unsuccessful tibio-peroneal stent to the left leg, the 2nd – 4th toes were amputated. The current wound was the result of further amputation to the left forefoot following longstanding ulceration and recurring infection (including osteomyelitis) to the left 1st metatarsophalangeal joint. Ongoing antibiotic therapy had had some negative systemic effects for Mr S and he was keen to not have to take further courses if possible.



Photo 1. Wound one week post-amputation.

Mr S started attending the High Risk Foot Clinic with the current wound in June 2006.

## The Wound

On first presentation, the wound was granulating well with heavy haemo-serous exudate. The wound was deep to tendon, 20 mm in width and 60 mm in length. There were no signs of infection. Mr S was mobilising with the help of a post-operative shoe for the left foot. He continued to use his prosthetic leg on the right.

Following light debridement of hyperkeratoses to the wound margins and cleansing, the wound was dressed with AQUACEL® Ag as the primary dressing. An absorbent dressing pad was used as the secondary dressing which was secured with crepe bandage.

## Wound Management

The wound was assessed in detail and the following goals were identified:

- Exudate management.
- Infection management.



Photo 2. Wound nine weeks post-amputation.

- Maintenance of limb function and improve mobility.
- Maintenance of tissue viability and vascular status.

AQUACEL® Ag was decided as the primary dressing due to high exudate levels and the need to maintain moist wound healing with antimicrobial properties<sup>1,2</sup>. Mr S has a history of infection leading to catastrophic events, so the properties of AQUACEL® Ag were ideal. The patient was seen fortnightly in the podiatry department High Risk Foot Clinic, with community nurses maintaining the wound care plan every two to three days.

In the first fortnight, the wound had decreased in size by almost 30% with granulation tissue present, but with similar levels of exudate. In the following weeks, the wound continued to decrease in size, and by the ninth week, exudate levels were moderate. There remained no sign of infection. During this time the patient was reviewed by the endocrinology team, wound care consultant and vascular consultants in the High Risk Foot Clinic.

Following the significant improvement of the wound, Mr S was transferred to the ulcer clinic for follow-up. The wound continued to heal well with no infection and as of 15 September 2006 was virtually healed.

## Outcome

Mr S will continue to be reviewed fortnightly until complete wound healing has been achieved. It will be vital to continue



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Photo 3. Wound almost healed.

with regular foot checks, which include neurovascular testing and general foot care.

As a result of the change in his foot shape, accommodative orthoses were manufactured to provide off-loading and custom footwear will be required to accommodate his new deformity.

## Discussion

Diabetic foot wounds pose a real challenge to health care providers due to the multi-faceted aetiologies of these wounds. Along with vascular factors, infection and high exudate levels need to be managed effectively in order to provide an optimal wound healing environment.

AQUACEL® Ag was chosen due to:

- High level of absorbency required due to exudate levels (www.convatec.com).
- Anti-microbial properties of silver were ideal to reduce the bacterial burden<sup>2</sup>.
- Previous success in wound healing with this dressing.
- AQUACEL® Ag easily removed at dressing change; therefore, reducing trauma to granulating tissues<sup>1</sup>.

The wound management plan was followed by all clinicians involved and this gave confidence to the patient that an effective treatment plan was in place, as well as the fact that the dressing choice hastened the healing of the wound. This



Photo 4. Custom shoes and accommodative orthoses.

aided Mr S in his return to proper weightbearing and normal lifestyle.

## Hints and Tips

- AQUACEL® Ag can reduce the need for systemic antibiotics that are often ineffective due to resistance<sup>2</sup>.
- Systemic antibiotics often cause an ischaemic effect resulting in reduced microcirculation, which is undesirable in wound healing<sup>2</sup>.
- "Amputation of one limb increases the risk of loss of a second limb and is associated with 50% 5 year mortality"<sup>3</sup>.
- "The personal and economic costs of amputations are staggering"<sup>4</sup>.

## References

1. www.convatec.com/Ag/uk/index.
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4. Stone J, Cianci P. The role of adjunctive hyperbaric oxygen therapy in the treatment of lower extremity wounds in patients with diabetes. Diabetes Spectrum 1997;10(2):118-123.

## Disclaimer

The authors are in no way biased towards AQUACEL® Ag, other than finding it useful in wound healing in clinical practice. We are not sponsored by or receiving any financial incentives from Convatec™ or their associates.