Case Report
Infected Diabetic Foot Ulcer

NovoSorb® BTM
Biodegradable Temporising Matrix

Hospital Middlemore Hospital, Auckland, New Zealand

Wound closure was achieved for a chronic ulcer with exposed tendons; NovoSorb BTM was retained despite an infection occurring one week after application.

The patient presented with an infected ulcer on the dorsum of her foot, which initially occurred from a minor trauma but failed to heal due to her diabetes and comorbidities. After debridement, a large defect was present with exposed extensor tendons. NovoSorb® BTM was applied with adjunct Negative Pressure Wound Therapy (NPWT). After discharge to a care facility, problems were encountered with the NPWT and a subsequent infection was observed. NovoSorb BTM was retained while the infection was treated. Following full integration a skin graft was applied to achieve wound closure.

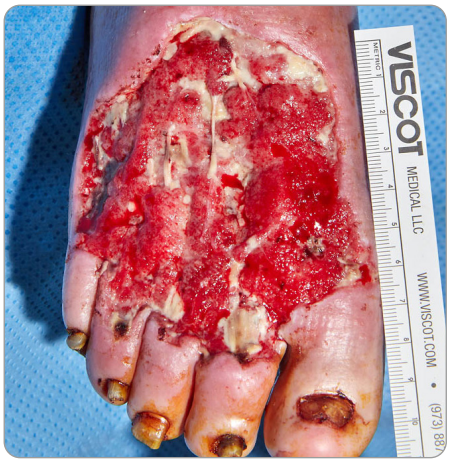

Figure 1: Wound prior to debridement.

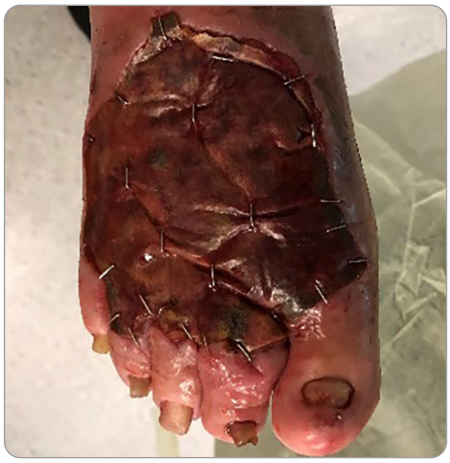

Figure 2: 2 weeks post BTM application. Signs of infection and cellulitis of the toes.

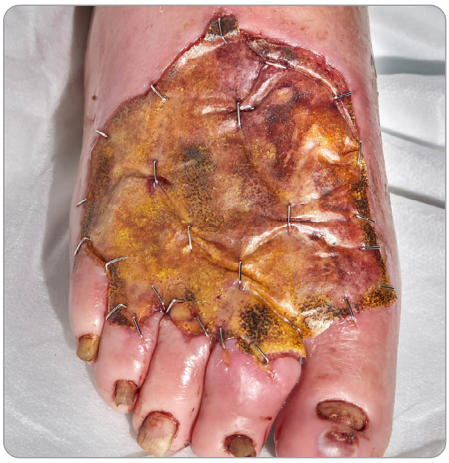

Figure 3: 3 weeks post BTM application. The matrix retained despite infection.

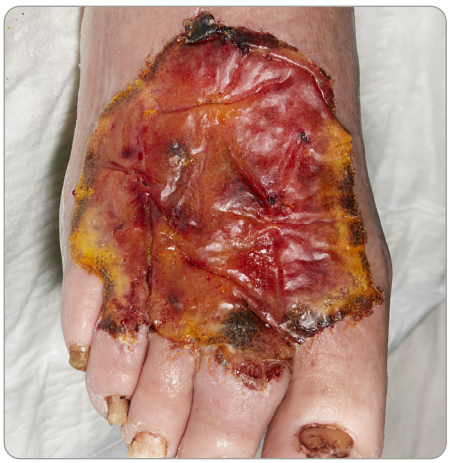

Figure 4: 4 weeks post BTM application. Infection resolved and uniform integration of BTM.

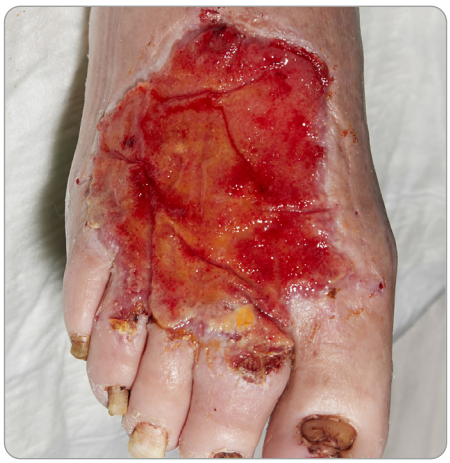

Figure 5: At 4.5 weeks post BTM application. Delamination to reveal a viable neodermis.

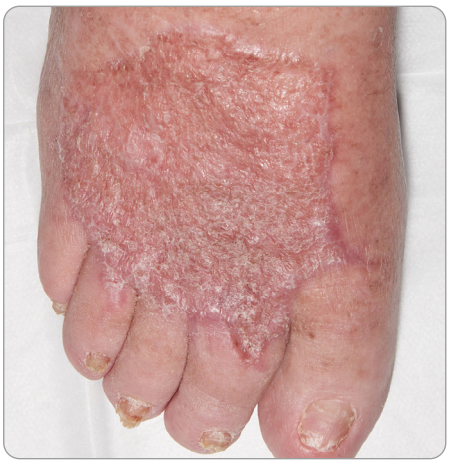

Figure 6: Follow up at 4 months post grafting.

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Background

A 73-year-old Caucasian female initially developed a small wound on the dorsum of her foot due to minor trauma. Due to her underlying diabetes and other comorbidities, including hypertension and anaemia, the wound failed to heal and became secondarily infected, developing into an infected DFU.

Treatment

Initial treatment involved serial debridement in controlling the infection and removing all non-viable tissue (Fig. 1). Intravenous antibiotics were administered, and her diabetes management was reviewed to ensure tight glycaemic control. After the infection was controlled and all non-viable tissue was removed, the patient was left with a large defect with exposed extensor tendons on the dorsum of the foot.

Due to the exposed tendons, immediate split-thickness skin grafting was not an option. With such a large wound, there were no local flap options. A free flap would have been required for coverage, but a lengthy procedure was not advised due to the patient's comorbidities.

Intraoperatively, the wound edges were excised, and the wound bed was refreshed using hydrosurgery. BTM was applied and quilted with staples. An antimicrobial silver dressing was used, and a topical NPWT of 50mmHg was applied. The patient remained an inpatient until the first dressing change at one week, before being discharged to her care facility.

Problems with the continuation of the topical NPWT were encountered, resulting in the machine being turned off for an unknown period. The patient was re-admitted to the hospital with clinical evidence of recurrent infection in the foot with BTM still in place. Cellulitis involving the toes was evident and purulent exudate originating beneath the BTM (Fig. 2). The infection was treated with intravenous antibiotics and daily topical wound care involving chlorhexidine washes and antimicrobial silver dressings. Over several days, the cellulitis resolved and exudate ceased. BTM developed a dry, yellow appearance that progressed to pink/red over time (Fig. 3). The infection was successfully treated with retention of BTM (Fig. 4), and delamination was performed 4.5 weeks after the initial application, revealing a well-developed neodermis (Fig. 5). A meshed split-thickness skin graft was applied for definitive closure.

Outcome

The skin graft had a near 100% take. The patient's wound went on to heal uneventfully. At four months, a good cosmetic outcome was observed (Fig. 6).

NovoSorb BTM is designed to temporise the wound and facilitate the construction of a vascularised neodermis, ready for definitive closure.
NovoSorb BTM is indicated for full or deep partial thickness burns and wounds, surgical and reconstructive wounds and traumatic wounds.
For full device details, including indications, contraindications, warnings and precautions, refer to the Instructions For Use, available at **polynovo.com**

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