



Enhanced Diabetic Foot Ulcer Healing with ON101 and Artificial Dermis: A Case Study

人工真皮合併ON101使用於糖尿病足潰瘍之案例分享

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PURPOSE

Diabetic foot ulcers, particularly with deep and extensive tissue loss, often require multiple surgical and treatment interventions. In recent years, ON101 cream has emerged as a promising treatment, providing improved outcomes for wound reconstruction. This case study presents the successful healing of a Wagner grade II diabetic foot ulcer using ON101 in consecutive application with an artificial dermis.

MATERIALS AND METHODS

A 45-year-old male patient, with poorly controlled type 2 diabetes mellitus, presented with bilateral foot ulcers persisting for over six months. He had developed skin necrosis and exposed extensor tendons on the right dorsal foot for approximately one week. The patient presented to our emergency department with a diabetic foot infection, impending necrotizing fasciitis of the right foot, and diabetic ketoacidosis (HbA1c: 12.7, Blood ketone: 2.1). Upon admission, we initiated intensive blood sugar management and scheduled surgical intervention for infection control.

Figure 1

Diabetic foot infection with impending necrotizing fasciitis.



Figure 2

Exposed extensor tendons after debridement



During the first week, the patient underwent two debridement procedures. Due to exposed extensor tendons on the right foot, negative pressure wound therapy (NPWT) was applied for wound reconstruction starting in the second week. For outpatient follow-up over the next two weeks, the wound was treated with ON101 cream and Aquacel Ag+ extra.

As granulation tissue developed on the dorsal side of the foot, it became suitable for an artificial dermis grafting. We applied Terudermis, covered by national health insurance, with continued NPWT. The silicone layer of the Terudermis was removed three weeks later, and a thin split-thickness skin graft was placed. After one week, ON101 cream was reintroduced for continued wound care at home. During biweekly outpatient follow-ups, the patient demonstrated good wound healing and scar maturation.

Figure 3

Artificial dermis applied after NPWT.



Figure 4

After the removal of the silicone layer (Left), a healthy wound bed was observed (Middle). A thin split-thickness skin graft was then applied to the wound (Right).



RESULT

Over the course of three months, ON101 cream, in combination with modern dressings, was applied to both the residual wound on the right dorsal foot and a plantar foot ulcer on the left foot. The patient expressed high satisfaction with the wound condition, noting significant improvements in skin quality on both feet.

Figure 5

Topical ON101 was applied, significantly enhancing the wound healing process, as observed during biweekly follow-ups.



CONCLUSION

The consecutive use of ON101 cream with advanced wound care, including artificial dermis, significantly enhanced healing in this difficult case of a Wagner grade II diabetic foot ulcer. ON101 not only improved the wound healing process but also contributed to better scar quality, offering a superior solution for complex diabetic foot ulcers.