

Limb Salvage with Cryopreserved Umbilical Cord in Patients with Complex Diabetic Foot Ulcers

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Introduction

More than 73,000 amputations are performed in diabetic patients annually in the US. Approximately 50-70% of these lower limb amputations occur in patients with diabetic foot ulcers (DFUs), especially those with exposed bone, tendon, muscle and/or joint capsule, gangrene, and infection.

To reduce the likelihood of amputation, Umbilical Cord (UC) has been used as a wound covering to support the healing process in DFUs. Multiple studies have reported wound healing rates of >78% in [Wagner 3-4] DFU patients.

Methods

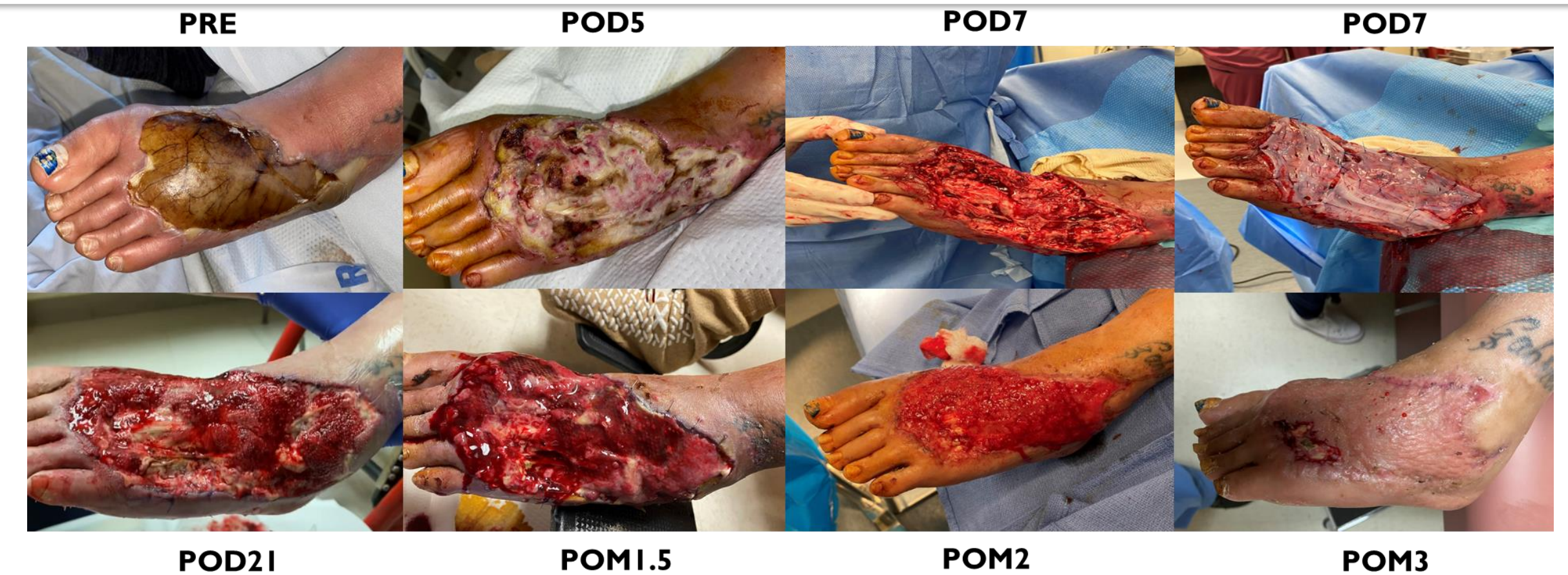
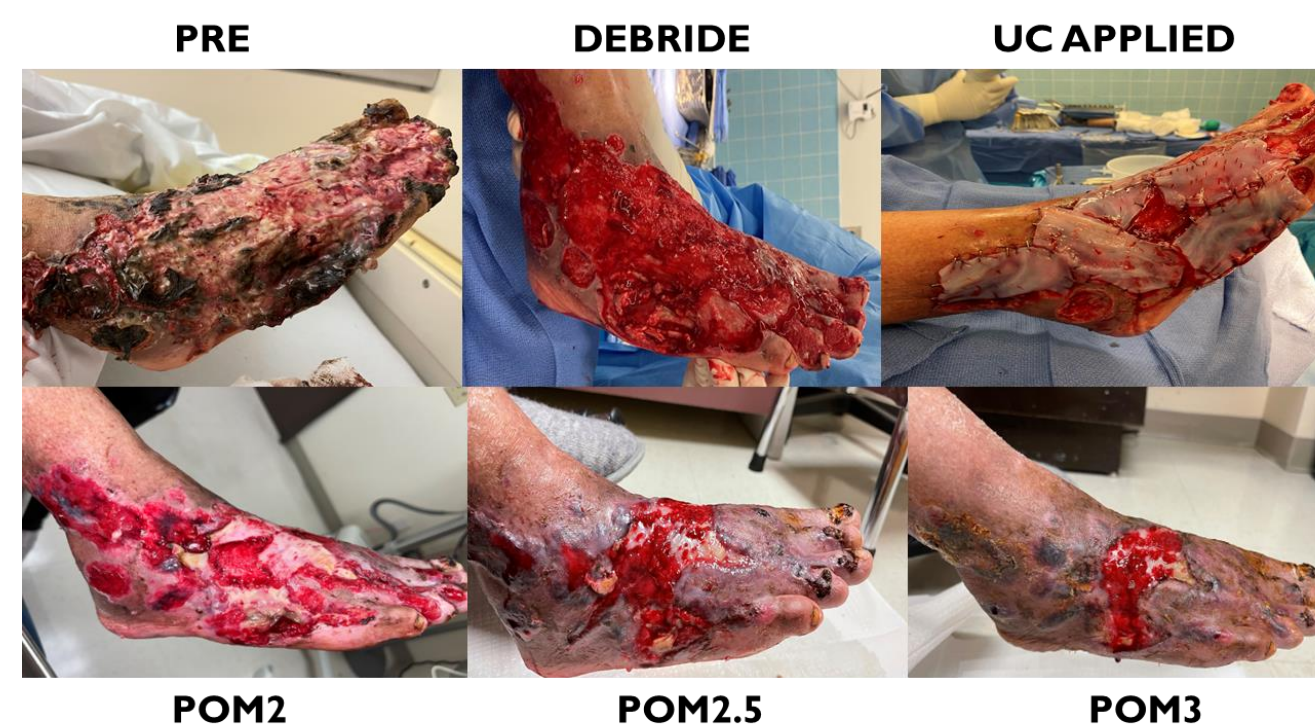
A retrospective review was performed of patients with complex, non-healing DFUs that were subsequently treated with debridement and adjunctive cryopreserved UC in the operating room. Change in wound size and number of UC applications were assessed.

Results

Three patients (2 Female, 1 Male; aged 56 ± 7.2 years) presented with complex, infected DFUs on the dorsum of the foot. Below knee amputation was recommended by other physicians. Rather, debridement with adjunctive UC was performed. Post-op, complete wound closure without any minor or major amputation was achieved.

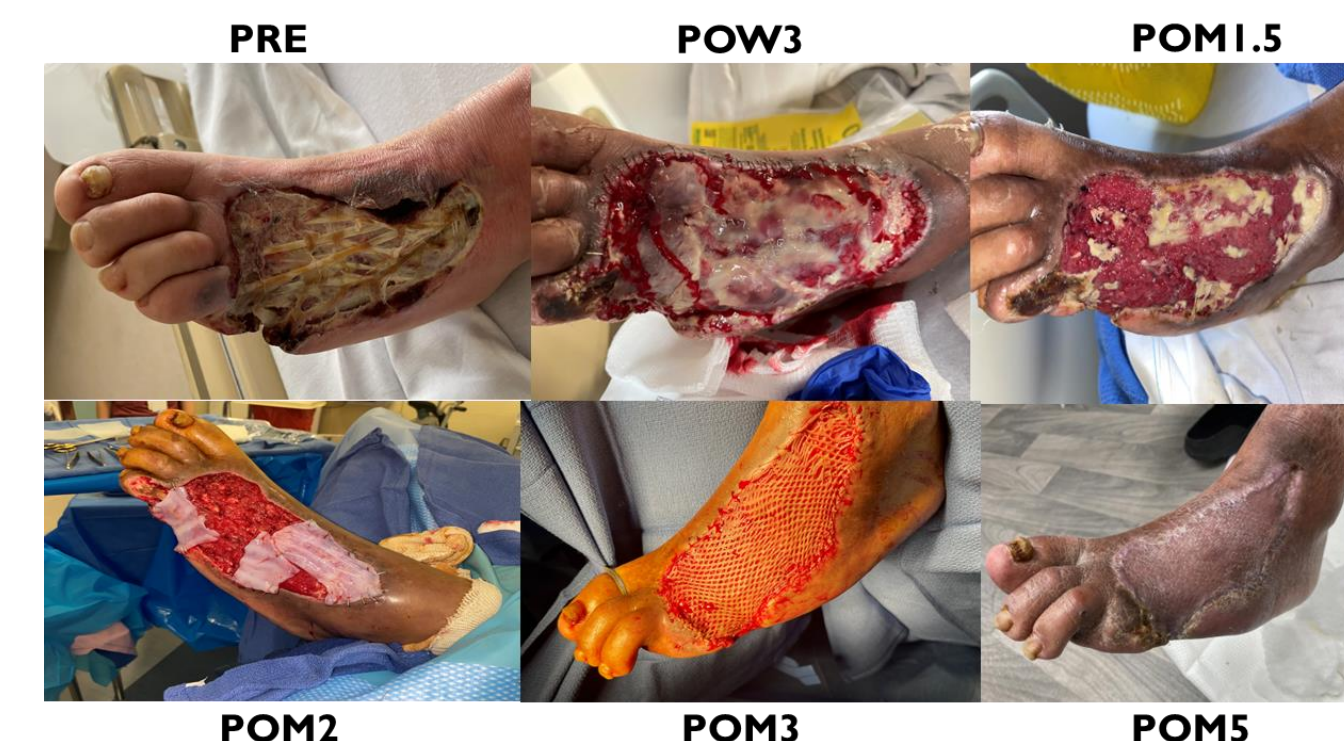
Case 1-

62 y/o Female with Type 2 Diabetes, Smoker, CAD, PAD, Gangrenous Necrotic tissue due to negligence. BKA recommended by primary, vascular and general. Limb salvage, debridement with one UC was performed.



Case 2-

58 y/o Male with Type 2 Diabetes, polyneuropathy, PVD, smoker, CAD & wound measuring 14x 6cm. UC applied. At 3 weeks, tissue was well incorporated and infection under control. At 2 months, wound debrided to salvage toe and another UC placed. At 3 months, STSG placed and wound healed within two additional months.



Case 3- Above

48 y/o Female with Type 2 Diabetes, Septic, Multiple rec's for BKA, drug user, Full thickness wound with exposed tendon spanning the entire dorsum and medial aspect of the left foot. Debridement with one UC performed.

Conclusions

This case series demonstrates successful limb salvage using adjunctive UC in patients with complex, non-healing DFUs with bone exposure, gangrene and infection.

References

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3. Moss SE, et al. *Arch Intern Med*. 1992; 152: 610-6.