Healing Multiple Large Recalcitrant Diabetic Foot Ulcers with Cryopreserved Amniotic Membrane/Umbilical Cord* Matrices

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Introduction
Recalcitrant diabetic ulcers of extended duration often involve compounding issues including osteomyelitis which complicate treatment. Due to poor healing rates and increased cost of care associated with these complex wounds, advanced wound care products, including cryopreserved amniotic membrane/umbilical cord (AM/UC), are increasingly used to expedite healing. This retrospective case report evaluates the efficacy of cryopreserved AM/UC tissue and particulate in treating multiple large recalcitrant diabetic foot ulcers.

Patient History
A 52 year old morbidly obese diabetic male with post-traumatic stress disorder, chronic kidney disease, tobacco abuse, COPD, and anemia presented with multiple ulcers of three years duration, initiated by partial amputation of the 3rd, 4th and 5th rays due to osteomyelitis. All wounds failed multiple skin graft attempts. One month after initial UC application, the patient injured the lateral side of his contralateral foot while walking barefoot and presented with a large ulcer with blackened, devitalized tissue at the center of the wound. Additionally, the patient was diagnosed with local cellulitis and osteomyelitis. Given the patient’s multiple wounds, comorbidities and previous failed treatments, an advanced wound healing therapy was utilized to promote healing.

Methods
Wounds were sharply debrided and cryopreserved UC matrix was applied via staple fixation at week 0 to all ulcers (left hallux, forefoot, heel; right forefoot) followed by injection of particulate AM/UC at week 2 (right forefoot) and week 18 (left forefoot, heel). Patient received supplemental MIST therapy and weekly dressing changes.

*NEOX® CORD 1K™ and NEOX® FLO, Amniox Medical, Atlanta, GA

Results
Left hallux wound (1.0 x 1.0 cm) healed within 11 weeks with one application of cryopreserved UC and left forefoot wound (5.5 x 5.0 cm) healed within 22 weeks with one application cryopreserved UC and one injection particulate AM/UC. Left heel (3.0 x 4.2 cm) and right forefoot (4.5 x 5.5 cm) ulcers reached >90% closure within 22 and 4 weeks, respectively.

Conclusion
Cryopreserved UC and particulate AM/UC injection are efficacious treatments for recalcitrant diabetic ulcers requiring advanced modalities to achieve healing. Fewer applications/injections prevents excessive treatment costs and allows less frequent clinic visits, overall increasing the effectiveness of care.