CASE SERIES DEMONSTRATING THE HEALING CAPABILITY OF DIABETIC FOOT ULCERS USING DEHYDRATED AMNIOTIC MEMBRANE ALLOGRAFT

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BACKGROUND
Non-healing diabetic foot ulcers (DFUs) are often the first stage towards limb amputation in patients with diabetes. Despite attempts at off-loading, controlling glucose level, and controlling infection, there is a subset of patients who do not show healing and amputation is eminent. Various types of advanced therapies have been developed. Dehydrated amniotic membrane allograft (DAMA) has been shown to initiate the cascade of healing in recalcitrant DFUs.

METHODS
When first presented with a novel technology such as DAMA we often choose only the most challenging patients on which to apply the technology. Eight patients with DFUs were identified having non-healing foot ulcers where amputation was considered the most treatment option. The distance in the wound ranged up to 3 years and these patients had undergone a variety of treatments, including layers of grasper, silver dressings, negative pressure wound therapy (NPWT), aggressive debridement and amputation at off-loading with total contact cast. Healing failed even with the advanced treatment modalities described above; these patients were chosen to have DAMA applied to their wounds.

RESULTS
In total, there are 8 patients’ wounds healed in an average of 8.2 weeks after an average of 2.75 DAMA applications.

CONCLUSIONS
This series describes patients who were at significant risk for amputation who had failed other advanced therapies. The wounds ranged up to 3 years and these patients had undergone a variety of treatments, including layers of grasper, silver dressings, negative pressure wound therapy (NPWT), aggressive debridement and amputation at off-loading with total contact cast. Healing failed even with the advanced treatment modalities described above; these patients were chosen to have DAMA applied to their wounds. DAMA has been shown to initiate the cascade of healing in recalcitrant DFUs.

SAMPLE CASES

CASE 1
54 year old male with history of diabetes, neuropathy, chronic osteomyelitis and multiple plantar amputations. Patient presented with bilateral DFUs over 5.8 cm x 4.3 cm x 0.8 cm. By the second application wound decreased to 1.3 cm x 2.9 cm x 0.5 cm.

CASE 2
36 year old female with poorly controlled diabetes and neuropathy with chronic history of DFUs. Patient was selected for DAMA treatment after more than a year of failed wound care treatments which included; silver dressings, NPWT, wet to dry dressing, and various attempts at off-loading with total contact cast. Patient was selected for DAMA treatment after 2.6 years of failed treatments. The patient presented with right plantar mid foot ulcer. Patient had a long history of failed therapies which included; standard wound therapies, DEX, silvadene and betadine. Patient received a total of 3 DAMA applications with secondary treatments of petrolatum non-adherent dressing and TCC. Wound size at initial application was 1.5 cm x 1.0 cm x 0.5 cm. By the second week wound size decreased to 0.9 cm x 0.4 cm x 0.2 cm and by week 3 wound measured 0.4 cm x 0.3 cm x 0.1 cm. Complete healing occurred 72 days after first application.

CASE 3
61 year old female with history of diabetes, neuropathy, osteomyelitis and Charcot foot. Long history of DFUs with Charcot deformity that has healed and reopened. Patient was selected for DAMA treatment after more than a year of failed treatments. Patient presented with right great toe ulcer. Patient has a long history of failed therapies which includes; standard wound therapies, XTRASORB® Dressings, Derma Sciences Inc., Princeton, NJ. Patient received a total of 3 DAMA applications every two weeks with secondary treatments of petrolatum non-adherent dressing, gauze and TCC. Wound size at initial application was 1.7 cm x 0.9 cm x 0.5 cm. By the second application wound decreased to 0.4 cm x 0.3 cm x 0.1 cm and by the third application wound decreased to 0.9 cm x 0.5 cm x 0.1 cm. Complete healing occurred 28 days after first application.

Summary of Total Wound Area in Cases Above

![Graph showing the summary of total wound area in cases above]