

DIABETIC FOOT ULCER WITH INCREASED PRESSURE ON FOREFOOT



Zehra Hyderi, DPM

Foot & Ankle Specialists of Illinois, Algonquin, IL

INTRODUCTION

Several thousands of diabetic foot ulcers occur annually in the U.S, of those many are involving the lower extremity. Often, a significant soft tissue deficit is present leaving limited reconstructive options available to the surgeon or wound care provider. STSG is still considered the mainstay for treatment of large skin defects caused by traumatic wounds. Problems with graft loss, scar contracture, loss of elasticity, adhesions to tendons and unfavorable aesthetic results are regarded as limitations. In order to overcome these limitations, the use of acellular dermal matrix has shown success in the past.

We used an acellular fish skin dermal matrix for its native dermal structure, porosity, and biomechanical properties. It also provides a natural bacterial barrier rich in Omega3 fatty acids. Split thickness skin grafting was then performed to achieve final closure.

METHODS

We illustrate a case report where a fish skin acellular dermal matrix was utilized to facilitate granulation prior to STSG following a surgical reconstruction of the foot.

RESULTS

Significant granulation tissue and coverage of depth was noted within the first week of application without the need for wound VAC usage. Skin graft substitute application allowed for early application of STSG and complete closure of the diabetic foot wound.

DISCUSSION

Diabetic foot ulcers cause a great deal of anguish and potential loss of limb or life. Exposed underlying tendinous and osseous structures add to the complexity of the injury. Appropriate surgical debridement of non-viable tissue along with local wound care is often necessary.

With our patient, surgical debridement with amputation of the remnant 2nd toe was performed with adjunctive skin substitute application. This allowed for rapid granulation and STSG. The patient underwent a full recovery with no limitations.

The utilization of a fish skin acellular dermal matrix appears to be a viable option to optimize diabetic foot wounds for STSG. It is our hope this can provide future clinical and surgical guidance to practitioners with similar traumatic wounds.

CASE #:

Patient History: 64 Male

Type 2 Diabetes Mellitus With Foot Ulcer, Diabetic Neuropathy, Hypercholesterolemia, hypertension

Wound History: 2-year history, initial wound was infected upon first office visit (anti-biotics and off loading was performed). Long term increased pressure on forefoot with multiple surgeries, history of osteomyelitis.

Kerecis Applications: 1 application in operating room

Patient Outcomes: Successful outcome with wound healing in 6 weeks post-



Preoperative visit (pre-debridement) with previous collagen powder advanced wound care product residual noted on photo.



Preoperative visit/post debridement in office photo.



4 weeks postop with complete resolution of the wound site and healing and a plantigrade foot noted on multiple views in these photographs.



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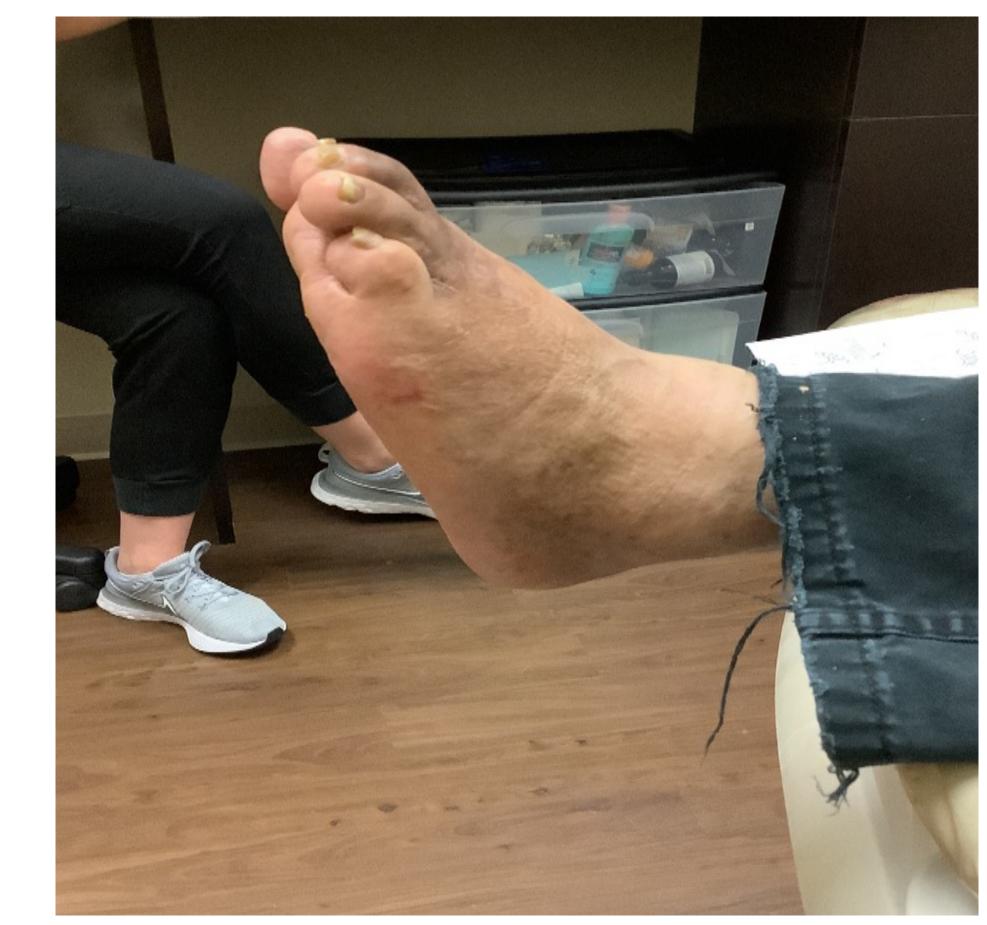
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Preoperative x-ray on lateral view showing the



This is a postoperative x-ray showing plantigrade foot post first metatarsophalangeal joint fusion.