

# Application of Fragmented Fish Skin Grafts\* (FSG) in a Prediabetic Patient with a Persistent Leg Wound

Luis J. Navazo, MD

Mobile Doctor Medical Clinic, Oceanside, CA

## INTRODUCTION

Fish skin graft (FSG) is a novel product derived from Atlantic cod fish and has proven to augment acute and chronic wound healing<sup>3,4</sup>. Therefore, the purpose of this case is to evaluate FSG in a patient with a persistent ulceration which had not responded to conservative wound care. Patient had previously undergone post varicose vein stripping and had prediabetes present.

## METHODS

The patient is a 69-year-old female that presented with a one-month-old persistent left anterior leg wound where prior modalities had failed. The patient underwent a full thickness biopsy and debridement of the wound to exclude malignancy as well as to remove any biofilm present. The patient was seen the following week. At this time, results of her hemoglobin A1c were 5.6%; previous hemoglobin A1c measured at 5.7%. The biopsy was negative along with the culture. The patient underwent wound bed preparation on this visit and underwent application of MariGen Micro 4cm<sup>2</sup> of fragmented FSG. Patient underwent a second application of fragmented fish skin graft one week later. Patient was seen on a weekly basis thereafter until full closure of wound was achieved.

## RESULTS

Wound was evaluated regularly after each application of fragmented FSG. (Initial wound size: 2.0 cm x 0.7 cm x 0.2 cm. Follow-up: 30% reductions in wound size after each prior application.) Nine weeks after the second application, wound had achieved complete closure.

## DISCUSSION

This case illustrates clinical efficacy in treating nonhealing ulcerations using FSG in a female with borderline DMII. The product proved a safe and effective option for wound closure. More extensive prospective studies should investigate FSG efficacy in treating these types of ulcerations.

## CASE: 69-YEAR-OLD FEMALE NONHEALING INGUINAL ULCERATION

Patient History: 69-year-old female with PMH pertinent for asthma, borderline diabetes mellitus (DMII) and PSH pertinent to status post varicose vein stripping.

Wound History: Patient presented with a one-month-old persistent left anterior leg wound. Patient had been using topical mupirocin and had taken courses of doxycycline and ciprofloxacin as prescribed by urgent care.

Kerecis Applications: Two applications of fragmented fish skin graft (MariGen Micro 4cm<sup>2</sup>).

Patient Outcomes: Wound achieved complete closure nine weeks after second application of fragmented fish skin graft.



Initial Presentation, prior to first fragmented FSG application (12/1/2022)  
Wound size: 2.0 cm x 0.7 cm x 0.2 cm



Week 1 Follow-up, prior to second fragmented FSG application (12/7/2022)  
Wound size: 30% smaller compared to initial



Week 2 Follow-up (12/14/2022)  
Wound size: 30% smaller compared to Week 1 Follow-up

## REFERENCES

1. Men's J. S., & Phillips T. J. (2019). Pressure ulcers: Pathophysiology, epidemiology, risk factors, and presentation. *Journal of the American Academy of Dermatology*, 81(4), 881-890. <https://doi.org/10.1016/j.jaad.2018.12.069>
2. Lindgren, Unosson, M., Fredrikson, M., & Ek, A.-C. (2004). Immobility - a major risk factor for development of pressure ulcers among adult hospitalized patients: a prospective study. *Scandinavian Journal of Caring Sciences*, 18(1), 57-64. <https://doi.org/10.1046/j.0283-9318.2003.00250.x>
3. Kirsner, R. S., Margolis, D. J., Baldusson, B. T., Petrusdottir, K., Davidsson, O. B., Weir, D., & Lantis, J. C., 2nd (2020). Fish skin 4. Lullove, E. J., Liden, B., Winters, C., McEneaney, P., Raphael, A., & JC, L. I. (2021). A Multicenter, Blinded, Controlled Clinical Trial Evaluating the Effect of Omega-3-Rich Fish Skin in the Treatment of Chronic, Nonresponsive acute wound healing. *Wound repair and regeneration: official publication of the Wound Healing Society [and] the European Tissue Repair Society*, 28(1), 75-80. <https://doi.org/10.1111/wrr.12761>
4. Diabetic Foot Ulcers. Wounds: a Compendium of Clinical Research and Practice.