Use of Acellular Fish Skin Graft to Decrease Pain and Inflammation While Speeding Healing in Trauma Wounds

Windy Cole, DPM Adjunct Professor and Director of Wound Care Research KSUCPM, Medical Director, Wound Center, UH Ahuja Hospital

CASE 1: 73 year old male patient sustained a fall on the ice. Patient was on Xarelto for A-fib. Suffered from a large, painful hematoma of the entire lateral calf. Patient was taken into OR and had an I&D of hematoma using INTRODUCTION the Misonix SonicOne O.R. Cleanse Choice Infusion VAC system was used post-op. Patient was transitioned home Acellular fish skin is increasingly being used clinically as a readily available safe and with NPWT for 2 weeks. Pain level was 10++ effective alternative tissue source for wound repair in non-healing ulcers of many etiologies. Current mammalian acellular dermal matrices raise concerns of the potential for autoimmune re-sponse, risk of prion diseases, and potential cultural CASE 2: 68 year old female seen for lower leg ulcer or religious issues. following a scratch from her care-giver's ring while putting on her compression stocking. Wound continued to get worse over time and was fairly deep. Patient related a pain scale of 10 upon first presentation. The fish skin material has at least two fundamental differences from the other biologic materials on the market. One is that no disease transmission risk exists from North Atlantic Cod to humans. Secondly, the product contains omega=3 fatty acids not present in mammalian products. **CASE 3:** 66 year old female with a history of large dog scratch to the lower leg. Pain level was at 9. Wound exhibits a moderate amount of slough and devitalized Earlier studies have shown that the fish skin graft mediates significantly faster retissue at the base. There is undermining from 9 to 1 o'clock with deep tracking at 3 o'clock that measures 4.2 epithelialization of full thickness acute wounds compared to extracellular matrix cm deep. Pain level is at a 10 from porcine submucosa. When grafted, the acellular fish skin provides a natural structure to the wound bed that contains natural skin elements and bioactive lipids, which not only acts as a scaffold for revascularization and re-population of the patients' cells, but provides anti-inflammatory and antimicrobial prop-erties as **CASE 4:** S/P transmetatarsal amputation. Large defect still present laterally due to removal of necrotic and dewell. vitalized tissue. Patient was placed on NPWT for 3 weeks. OBJECTIVE

This is a case series report of the author's experience using the acellular fish skin graft to treat painful trauma wounds of the lower extremity.

MATERIALS AND METHODS

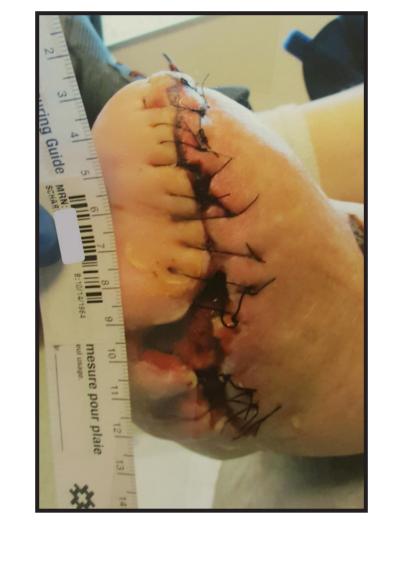
All patients in the study suffered with painful trauma wounds of the lower extremity treated with the acellular fish skin graft (Kerecis Omega3 Wound) using standard technique. Weekly wound measurements, photos and graft application was performed.

CASE 3: After multiple split-thickness skin grafts an area around the right medial ankle remained unhealed. Plastic surgeon did not recommend another STSG due to the amount of tissue already taken from patients thigh. She came to me to see if fish skin was an option for her. Patient had a pain level of 8.



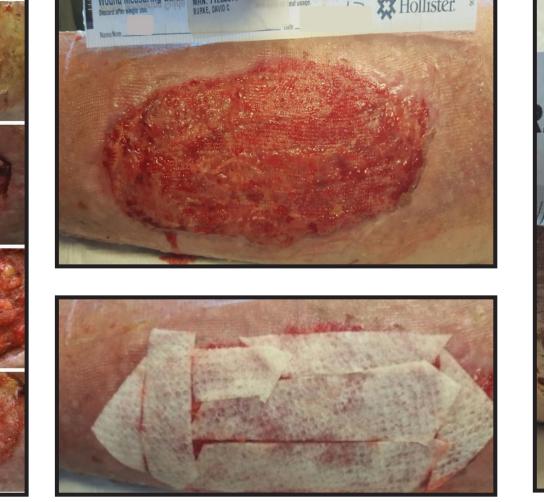












After single application pain level to 4

After 2 applications of fish skin the patient's pain scale was at a 3.

After 6 weeks of fish skin therapy the wound went on to complete closure







Continued closure and migration of epithelial cells over the integrated scaffold for final healing



The majority of the amputation site healed well, but the remaining lateral aspect of the stump was recalcitrant to standard therapy. Began fish skin therapy on this visi







Patient healed after only 2 fish skin applications.



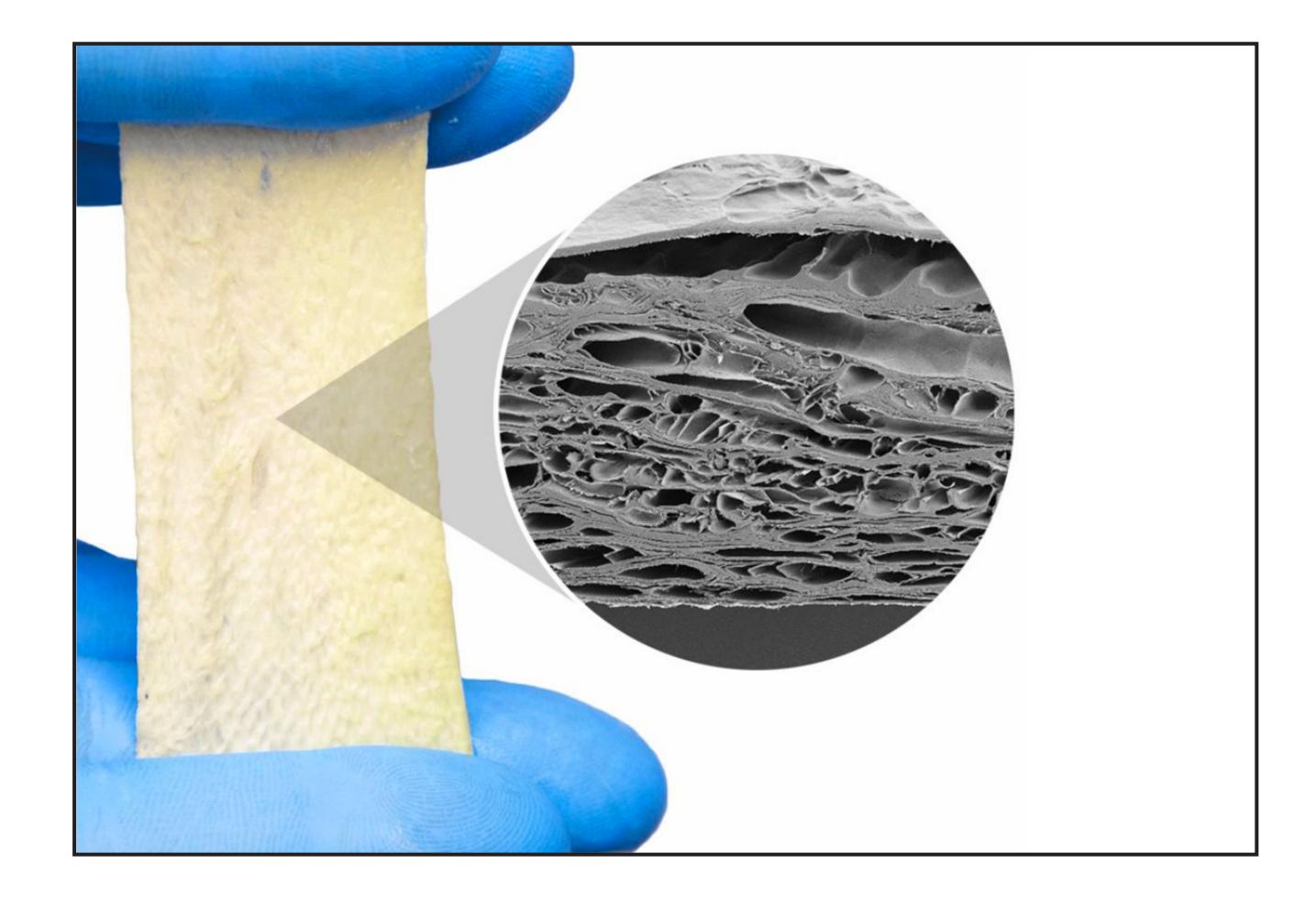
Results after just one fish skin graft to the area.

Evidence of bridging and new epithelial tissue islands present.

Pain level down to 2.







RESULTS:

Patients in the study group all went on to complete healing without any reported adverse events or compli-cations. All patients also related a substantial decrease in pain with the use of the fish skin graft.

CONCLUSIONS:

In this case series use of the acellular fish skin improved patient healing in patients suffering from painful trauma wounds of the lower extremity. It also reduced pain in these patients after application. Further clinical research in the pain reduction abilities of this novel technology is warranted.