

Introduction

A common incisional approach utilized for retrocalcaneal osteotomies is the reverse L-type incision. However, the corner of this incision can be a hard to heal area leading to sloughing of skin and non-healing wounds.

Over 6 million people in the United States suffer from lower extremity wounds of chronic nature, costing the health care industry an estimated 20 billion dollars per year for wound care. Normal wound healing occurs through 3 phases : inflammation, proliferation, and remodeling. Chronic wounds lag in the inflammatory stage with increased risk of infection, sepsis, amputation and other wound complications.

Many biologic and engineered tissue products are available for wound care, including Kerecis Omega3, an intact fish skin rich in omega3 polyunsaturated fatty acids. Kerecis provides natural fatty acids that process anti-inflammatory, anti-viral, and bacterial barrier properties. It also provides a thicker and more porous structure allowing for more stability and ability to incorporate into human wound bases compared to mammalian-based grafts and tissues.

Objectives

To determine if Kerecis Omega3 graft is a viable option for treatment of post-operative skin sloughing

Materials and Methods

52 year old patient who underwent surgery for retrocalcaneal osteotomy with Achilles repair. The patient was subsequently casted for 4 weeks. When the cast was removed a 1.0 cm L x 1.5 cm W x < 0.25 cm D wound was present. This wound was then debrided in office . One week later the wound was debrided again and Kerecis Omega3 acellular fish skin graft was applied and dressed with dry sterile dressing. This was followed by a repeat application of Kerecis Omega3 14 days later.

Results



The first application of Kerecis was initiated on May 15, 2017 after 1 week of local wound care. The patient was 5 weeks post-op at this time.

Wound size: 1.0 cm L x 1.5 cm W x < 0.25cm D

14 days after the initial application of Kerecis. Wound size: 1.25 cm L x 1.0 cm W x < 0.25 cm D



The final evaluation after 2 applications of Kerecis over a 14 day period showed complete healing of the troublesome wound.

Conclusions

Kerecis Omega3 acellular fish skin graft acts as a scaffold for revascularization and repopulation by human cells under attack from MMP's in inflamed chronic wounds, The naturally occurring fatty acids provide anti-inflammatory, anti-bacterial, and anti-viral properties to troublesome wounds. The porous composition of the graft allows for cellular ingrowth into the fish skin while providing durability for hard to heal areas of the foot and ankle.

Kerecis Omega3 fish skin graft provides low to no risk for autoimmune response, prion disease, or cultural/religious issues that other mammalian grafts pose.

2 applications of Kerecis Omega3 acellular fish skin graft proved successful in healing the posterior retrocalcaneal wound.

As for incisional approaches to avoid creating a hard to heal area, a curved reverse L-type incision should be utilized.

Resources

- Kerecis Omega3 Wound : A Clinical Dossier for a Piscine-based Bioengineered Skin Substitute for the Treatment of Chronic Wounds. Jan 2017 Arlington, VA. Kerecis.
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- Southerland, Joe T., McGlamrys Comprehensive Textbook of Foot and Ankle Surgery. Fourth Edition. pg 1176.