An Anhydrous, Omega Fatty Acid-based Product Kit Used to Close a Recalcitrant Wound in a Patient with Sickle Cell Disease

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Introduction

Sickle cell disease (SCD) is distinguished by inherited red blood cell disorders. The typically round, healthy red blood cells that transport oxygen throughout the body become C-shaped (hence, the term sickle); these hard, sticky cells are short-lived, keeping red blood cells in short supply and thwarting healthy blood flow. Patients with SCD experience pain and other serious problems such infection, acute chest syndrome, stroke, and skin ulcers that often convert into chronic nonhealing wounds. The challenge in treating patients with SCD is addressing the propensity toward infection without exacerbating pain. This case report describes the successful treatment of a patient with SCD and a chronic leg wound who was provided an omega fatty acid-based product kit designed to help manage wound healing and associated pain.

Case Report

A 31-year-old female patient with a medical history of sickle cell disease presented to St. Michael's Medical Center (Newark, NJ) on January 29, 2021, complaining of pain (10/10 on the visual assessment scale) from a draining wound on her right ankle of 7-months' duration. In addition to SCD, her medical history included sickle cell anemia, asthma, an ectopic pregnancy with salpingectomy, and a cholecystectomy. Her current medications included hydroxyurea, Percocet, folic acid, and an albuterol inhaler. She was allergic to morphine. She smoked a half-pack of cigarettes a day for 14 years and was a social marijuana user. The patient reported she was unable to walk, put on shoes, or sleep and that wound care was "a nightmare" because the pain was unbearable. When she was admitted to hospital, she was going through a sickle cell crisis and needed a transfusion; in addition, she was septic (white blood cell count of 17.9), so antibiotics were administered. Wound care. Upon admission, the patient's wound was surgically debrided; a xenograft graft failed.

OMEZA product application commenced March 25. The protocol consisted of application of OMEZA Lidocaine Lavage that was left on the wound for 5 minutes then wiped away with dry gauze. The OMEZA Collagen matrix then was applied as a primary dressing, followed by application of OMEZA skin protectant to the periwound/surrounding skin area from the knees to toes. Xeroform (Covidien) was cut to size and placed over the wound.

Case Report cont.

An Unna boot was applied over the lower extremity as a compressive dressing; an ABD pad, Kerlix, and Ace bandage were placed as needed for additional compression. This protocol was performed once weekly for 7 weeks. It should be noted that only once during the treatment course was sharp debridement performed or necessary where products from the Omeza kit were used. After 7 weeks, the patient no longer required prescribed narcotics or over-the-counter nonsteroidal medication for pain. She was enjoying a better quality of life, and the extremity wound was completely closed. Her mental health significantly improved, she was no longer in agonizing pain, and she was able to walk better. She expressed the desire to try the skin protectant product in spray form as a follow up to maintain better skin quality and to reduce the risk of wound recurrence.

Discussion

In this case report, use of an omega fatty acid-based product protocol resulted in a previously chronic wound that closed within 7 weeks. Wounds in patients with SCD are known to be difficult to heal, owing to the disease's ability to compromise red blood cells and circulation. Topical treatment with the lidocaine component lessened pain, the collagen matrix was instrumental in filling the wound and providing the structure for tissue growth, and the periwound protectant helped strengthen the skin while safeguarding against irritation and maceration.

Conclusion

An omega fatty-acid based product protocol designed to reduce pain and infection, help rebuild damaged tissue, and protect the periwound area was a key part of closing a recalcitrant wound in a patient with SCD. The product kit is showing success in supporting the healing of a variety of wound types and origins; research is ongoing.

Treatment Protocol

1. Lavage of the wound with Omeza omega-3 oil containing lidocaine
2. Wound debridement as indicated
3. Application of Omeza omega-3 collagen matrix to the wound bed
4. Application of Omeza omega-3 skin protectant to surrounding intact skin (knee to toe)
5. Secured with appropriate dressing

References:

1. Seo S, Jeong S, Gibson DJ. A pilot study of the antibacterial activity of topical fatty acids. Poster presented at the Symposium on Advanced Wound Care Spring/Wound Healing Society meeting. San Antonio, TX. May 7–11, 2019.
2. Laboratory testing University of Florida. Data on file.
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4. Independent testing performed by Augustine Scientific. Data on file.

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