

Cadexomer Iodine Enhances Extracellular Matrix in the Management of a Complicated Surgical Wound

Stacy Wilson RN, BSN, CHRN, Debra Peterson, CCRN, MSN, ACNP-BC, Jeffrey A. Niezgoda, MD, FACHM, FAPWCA, FACEP

Aurora Health Care, St. Luke's Medical Center and Hyperbaric and Wound Care Associates, Milwaukee, WI

Introduction

In the proliferative phase of wound healing the production of the collagen matrix allows for successful epithelialization. Often the lack of progression through the inflammatory and proliferative phase of wound healing can be due to ineffective matrix formation and excessive bioburden, leading to non-healing wounds. Tunneling wounds commonly stagnate due to lack of matrix production. These wounds can be stimulated with the application of an extracellular matrix (ECM), but still remain at high risk for infection. Cadexomer iodine (Iodosorb®, Smith and Nephew, Largo, FL) is a slow-release elemental iodine product that absorbs wound exudate forming a gel that is non-occlusive and non-adherent with broad spectrum antimicrobial activity that has been found to be effective against common skin and soft tissue specific bacteria (1). This case will demonstrate enhanced effectiveness of ECM with the combined use of Iodosorb® in the management of a non-healing surgical wound with significant tunneling following a below the knee amputation.

Case Report

An 81 year-old female initially presented for evaluation and management of a Wagner Grade IV diabetic foot ulcer. Comorbidities included end stage peripheral vascular disease, severe peripheral neuropathy and end-stage renal disease requiring hemodialysis. Despite aggressive wound care therapy with advanced modalities, the patient developed progressive lower extremity gangrene and subsequently required a below knee amputation. The post-operative course was complicated by purulent drainage, stump cellulitis and partial incisional dehiscence.

1. Apelqvist J, Ragnarson R, and Tenvall G. Cavity foot ulcers in diabetic patients: a comparative study of cadexomer iodine ointment and standard treatment. An economic analysis alongside a clinical trial. Acta Derm Venereol 76(3):231-235, 1996.

Treatment

The patient underwent debridement of the involved portion of the incision. This was accompanied by antibiotic therapy, aggressive wound care and hyperbaric oxygen treatments. After 2 weeks the wound base was clean and granular without evidence of infection (figure 1). Wound care efforts were continued and consisted of moist gauze packings of diluted Dakins (0.125%) solution for a total of 66 days. During this time the wound showed contraction on the surface, but a tunnel of 2cm persisted. The wound healing trajectory was flat. The stalled healing was presumed to be secondary to ineffective matrix formation combined with excess bioburden (figure 2). The treatment plan was modified to correct these deficiencies. The wound bed was prepared using ultrasonic assisted wound therapy (UAW). Extracellular Matrix (Oasis®) was then implanted into the tunnel after being impregnated with a mixture of Iodosorb® (to control bioburden) and Silvadene® (to provide moisture). The ECM combined with Iodosorb® and Silvadene® was repeated weekly for 3 weeks, in which during this time the wound showed rapid progression to closure (figure3).



Figure 1 (02/23/06)



Figure 2 (05/11/06)



Figure 32 (07/27/06)

Conclusion

We illustrated the enhanced effectiveness of ECM when combined with Iodosorb® in the safe and effective management of a tunneling wound compromised by bioburden. This novel management strategy was designed to address the factors compromising wound healing, the lack of ECM and excessive bioburden.