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Prevention
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Development of a Protocol for the Treatment and Resolution of Diabetic Foot Ulcers with Clinical Complications

Purpose: The purpose of this evaluation was to test a novel powder wound dressing in the development of a protocol for the treatment of diabetic foot ulcers with mixed concomitant etiologies.

Methods: Wounds with clinical complications including post-op amputation, underlying osteomyelitis, arterial insufficiency and immunosuppression arising from HIV or HCV were studied to determine if a single primary wound dressing can be applied in a protocol that allowed protection of the wound with 7 or 14 day intervals between dressing changes.

The case study presents wounds ranging from 2 years to 4 months in stasis with closure occurring at an interval of 5-10 weeks vs 8-12 weeks in a similar patient population without the application of the primary powder dressing.

The wounds were treated using the novel powder dressing as the primary dressing in contact with the DFU. The product is applied with a sterile tongue blade. Cadexomer iodine was applied with the powder if the wound had biofilm. The product is used under contact casting with a silicone mesh product used as a secondary dressing between the powder and the cast.

Findings: The case shows that the protocol developed with and without offloading allows the application of the powder dressing on the surface of a diabetic foot ulcer. Data is shown for time to healing and photographs of wound progression with dressing changes at 7 or 14 days is shown through healing for all cases.

1. Fitzgerald, R, Bharara, M, Mills, J, Armstrong, DG (2009); " Use of a Nanoflex powder dressing for wound management following debridement for necrotizing fasciitis in the diabetic foot" *International Wound Journal*, 6(2): 133-139.



Patient Post Left Distal Hallux Amputation



Hallux Amputation Closed at 5 Months



5th Metatarsal Ulcer Arose 4 Months Post Hallux Amputation



Hallux Amputation Closed at 5 Months



Clinical Treatment:

59 year old patient treated for two months in HBO wound care department. Patient received s/p left distal hallux amputation one month after treatment for ingrown toenail. The patient was presented to the ER with a wound consisting of 80% devitalized tissue, 20% exposed bone and underlying osteomyelitis. Patient received an arteriogram to assess arterial status due to TBI on LLE 0.35 suggesting severe micro vessel disease and critical limb ischemia. Patient was referred to ortho service for resection of exposed proximal phalanx of left hallux and Tenoachilles lengthening to provide gait and pressure relief to enhance healing. Patient's offloading was revised due to the onset of a new ulcer prior to surgery at lateral 5th metatarsal head. Post operatively left hallux wounds measured:(1) 0.3x0.6x0.2 cm (2) 0.5x0.9x0.1cm. The 5th MTH measured:0.8x0.7x0.4 cm probing to tendon. The patient was seen every 7-14 days for selective debridement, application of powder dressing, offloading and self-care, and disease management injury and prevention skills. The hallux post operative wounds closed in three months. At month 6, MTH wound was recultured and were positive. The patient was put on oral antibiotics. Cadexomer iodine gel was added to the powder dressing and a second vascular intervention was performed successfully at month 9. The lateral 5th MTH wound closed at month 10.