Self-Adaptive Dressings to Reduce Pain in Inflammatory Wounds, Minimize Painful Debridements, and Heal from the Outside in

FOUR CASES OF ATYPICAL ULCERS ASSOCIATED WITH AUTOIMMUNE DISORDERS

Sandi E. Jiongco, MSN, FNP-C, CWCN-AP, CFCN, WCC, DWC and Steffani Bechina, RN, BSN • Edward Hospital Wound and Hyperbaric Center, Naperville, IL

Case 1: Full epithelization in under 2 months of chronic lower extremity ulcer present for 7 months

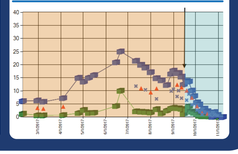
A 77-year-old white female with history of rheumatoid arthritis. Painful ankle ulcer present for 7 months. Past treatment included: enzymatic debriding ointment, steroid cream, silver alginate, iodosorb, silver foam, thick foam, and sorbact.

Day 7.
After 1 week of self-adaptive dressing treatment, wound size was 5cm x 2.7cm x 0.3cm with moderate drainage and no pain. Wound bed was 25% slough/75% pink/red granulation tissue.
Dry peri-wound with induration, erythema was decreased since self-adaptive dressing was started.

Day 18.
By day 18 wound size has decreased to 4cm x 1.4cm x 0.2cm with moderate drainage and no pain. Wound bed started re-epithelializing with 25% slough/50% pink/red granulation/25 % epithelial tissue. Peri-wound remained dry, edematous. Wound edges started contracting, epithelial tissue was present in wound bed

Day 35.
By day 35 wound continued to contract, sizing at 2.9cm x 0.6cm x 0.1cm with minimal drainage and no pain. Wound bed was 25% slough/50% pink/red granulation/25 % epithelial tissue. Peri-wound was healthy with no edema or desiccation.

Day 52.
Wound fully epithelialized in under 2 months.



Case 2: Full resolution of painful lower extremity ulcer present for over a year without debridement

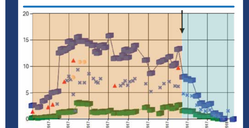
A 74-year-old white female with history of rheumatoid arthritis. Left lateral ankle wound has been open for 12 months. Past treatment included: enzymatic debriding ointment, steroid cream, sorbact, silver alginate, kerramax, iodosorb, drawtex, silver restore, hydrogel, and epifix.

At presentation.
Severely painful wound could not be properly cleansed or debrided. Enzymatic ointment was ineffective. Wound size was 3.2cm x 3.7cm x 0.2cm with copious purulent drainage and pain 5 out of 10. Wound bed was 50% slough/50% pink/red granulation, with macerated peri-wound. Self-adaptive dressing was started.

Day 29.
Within a month of self-adaptive dressing treatment, wound started contracting to 3.2cm x 2.3cm x 0.2cm with minimal drainage. Pain was gone entirely. Wound bed was 25 % slough/ 75% pink/red granulation with moist peri-wound, no maceration. Drastic pain reduction and decreased slough and drainage marked this assessment.

Day 72.
By day 72 wound size has shown drastic reduction to 1cm x 0.8cm x 0.1cm with minimal drainage and no pain. Most of the original open wound bed was re-epithelialized with remaining open area of 75% slough/25% pink granulation.
Peri-wound was dry but healthy.

Day 95.
Follow-up visit - wound remains closed.



PROBLEM

There are three main stages to the wound healing process: inflammation, proliferation and remodeling. Inflammation is generally indicative of healthy, normal healing; however excessive and persistent inflammation can lead to delayed healing, increased pain and scar tissue[1].
Wound bed preparation and removal of nonviable tissue is the cornerstone of chronic wound healing. Although Steed, et al.[5] showed that sharp debridement resulted in increased healing rates, a small percentage of wounds, because of their etiology, debridement may lead to pathergy or chronic, continuous pain. An article by Shanmugan, et al in the Journal of Vascular surgery revealed 20-23% of chronic lower extremity ulcers have an underlying disease process of vasculitis and autoimmune disease[4].
Ulcer pain treatment is critical for effective ulcer management and resolution in patients with underlying systemic inflammatory disease[3]. A medical database synthesis in September 2017 confirmed the wound with inadequately controlled pain leads to loss of sleep, lifestyle restrictions and loss of previous life roles bringing feelings of hopelessness, helplessness, depression and anxiety[2]. The synthesis found selection of dressings and dressing changes are key aspects and provide opportunities for addressing the WHOLE person.
How does a provider address ALL wound "basics" (debridement, pain control, patient involvement, ulcer resolution)?

METHODS

Self-adaptive dressings* were utilized to decrease the need for sharp debridement, allow the patient to "manage" their wound with a "one-step" dressing while decreasing periwound inflammation and ulcer pain.

RESULTS

Four illustrative examples of autoimmune/inflammatory ulcers demonstrate an optimized wound bed with granulation and subjective patient reports of reduction in pain.

CONCLUSIONS

Inflammatory, vasculitic, and comorbid autoimmune processes demand wound providers to think out of the box in dressing selection. The cases demonstrate that self-adaptive dressings* can take the place of painful sharp debridement, decrease inflammation, and facilitate wound resolution.

GRAPH LEGEND

Volume Area ▲ Debridement × Other

References
1. Can Inflammation During Wound Healing Be Dangerous? (2014, October 07). Retrieved September 20, 2017, from https://www.advancedtissue.com/can-inflammation-wound-healing-dangerous/
2. Fearns, N., Heller-Murphy, S., Kelly, J., & Harbour, J. (2017). Placing the patient at the centre of chronic wound care: A qualitative evidence synthesis. Journal Of Tissue Viability, doi:10.1016/j.jtv.2017.09.002
3. Giuggioli, D., Manfredi, A., Lumetti, F., Sebastiani, M., & Ferri, C. (2015). Cryoglobulinemic vasculitis and skin ulcers. Our therapeutic strategy and review of the literature. Seminars In Arthritis And Rheumatism, 44(5), 518-526. doi:10.1016/j.semarthrit.2014.10.004
4. Shanmugam, V. K., Angra, D., Rahimi, H., & McNish, S. (2017). Vasculitic and autoimmune wounds. Journal Of Vascular Surgery. Venous And Lymphatic Disorders, 5(2), 280-292. doi:10.1016/j.jvsv.2016.09.006
5. Steed, D. L., Donohoe, D., Webster, M. W., & Lindsley, L. (1996). Effect of extensive debridement and treatment on the healing of diabetic foot ulcers. Diabetic Ulcer Study Group. Journal Of The American College Of Surgeons, 183(1), 61-64.

Self-Adaptive Advanced Wound Dressing
OSNovative Systems, Inc., Santa Clara, CA • www.AnyWound.com

Case 3: Decreased opioid use and elimination of need for topical analgesia in chronic rheumatoid lower extremity ulcer

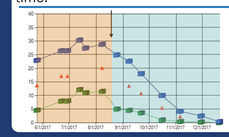
A 49-year-old white female with long history of rheumatoid arthritis. Bilateral lower extremity wounds present for 8 months. Past treatment included: enzymatic debriding ointment, hydroconductive dressing, steroid cream, topical analgesic and systemic pain medication.

At presentation.
Post EVLT treatment the patient has been unsuccessfully using enzymatic ointment along with topical pain medication. Wound size was 6cm x 4.8cm x 0.4cm with moderate drainage. Wound bed was75% slough/25% pink granulation. Moist edematous peri-wound with blisters. Self-adaptive dressing was started.

Day 30.
After 30 days of daily self-adaptive dressing changes wound size decreased to 5.8cm x 3.9cm x 0.2cm with moderate drainage. Wound bed was 25% slough/75% pink/red granulation.
Edematous peri-wound was dry without blisters, pain was 3 out of 10. Overall condition of the wound was improved and pain reduced.

Day 58.
By day 58 wound size decreased drastically to 3cm x 1.4cm x 0cm with minimal drainage. Patient was able to stop topical analgesic. Wound bed was 50% slough/50% pink/red granulation. Peri-wound remained moist and edematous. Self-adaptive dressing changes continued daily per patient's request.

Day 128.
Wound healed within 5 months' time.



Case 4: Resolution without debridement in severely painful cryovascular wound

A 60-year-old white male with cryoglobulinemia. The wound on the left medial ankle present for approximately 1 year, its condition deteriorating. Past treatment included: enzymatic debriding ointment, silver alginate, Vashe wet to dry, honey, and steroid creams as well as pain medication.

At presentation.
Wound was severely painful, sized 16.1cm x 4cm x 0cm with copious drainage. Peri-wound was moist, edematous. Wound bed was 50% slough/25% red/pink granulation/25% epithelialization. Severe pain would not allow for debridement. Prior use of enzymatic ointment did not reduce pain or non-viable tissue.
Self-adaptive dressing was started.

Day 46.
By day 46 wound size decreased to 11.1cm x 2.6cm x 0cm.
Peri-wound was dry. Drainage was reduced, pain went down to 3 out of 10. Wound bed had no slough and was 75% pink/red granulation/25% epithelial tissue. Small secondary wounds have been uncovered and resolved within the next 2 weeks.

Day 84.
By day 84 wound size decreased drastically to 2.6cm x 1.3cm x 0.1cm. Drainage was moderate, pain 4 out of 10. Wound bed was 25% slough/50% pink/red granulation/25% epithelial tissue.
Peri-wound was edematous.
Despite a slight setback in wound condition, it continued to contract.

Day 147.
Wound fully closed in just under 5 months.