THE EFFECTIVENESS OF SELF-ADAPTIVE WOUND CARE DRESSING* FOR WOUNDS OF VARIOUS ETIOLOGIES

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CASE 1: Healing of post-op incisional dehiscence in a patient with advanced comorbidities

A 72-year-old male with diabetes, hypertension, dyslipidemia, multiple previous foot infections who underwent partial 2nd metatarsal amputation for osteomyelitis. By post-op day 14, the incision had dehisced in the interosseus due to early ambulation. NPWT was applied and then discontinued due to maceration.

BACKGROUND

• Surgical dehiscence after partial ray amputations may result in covasathing complications. A clinician should choose modalities that facilitate rapid wound closure.

• Foreign body can and may lead to an infection due to the introduction of any wound

• Advanced biologic products are indicated for treatment of wounds of varying etiologies in a clinical setting, particularly in a diabetic patient with advanced comorbidities, forefoot ischemia in a patient with non-reconstructive vascular disease, and advanced biologic products are indicated for treatment of diabetic neuropathy.

RATIONALE

• Mobile treatment devices should be considered for various types of wounds, a clinician’s challenge is to identify modalities that would be applicable to various wound conditions and promote faster healing.

• A non-woven synthetic polymer self-adaptive dressing* is now available for treatment of wounds of various etiologies and is indicated for treatment of diabetic neuropathy.

• Self-adhesive dressing technology is based on science of dynamic wound dressing materials with variable wound management functionality, dressing is designed to facilitate moisture balance in wounds through simultaneous absorption of fluid release of vapor.

METHODS AND RESULTS

• The self-adhesive dressings were evaluated in three patients with wounds of different etiologies. With patient consent, their wounds were treated with self-adaptive wound dressings.

• The first patient underwent a partial 2nd ray amputation and was started on self-adaptive dressing after NPWT was discontinued due to maceration of dehisced surgical site. Weekly intravenous dressing applications reduced the exudates and created a healthy wound bed.

• The second patient had severe maceration and performed self-adhesive dressing application for 7 days. With this dressing, the exudates were reduced, and the patient managed the dressing at home with routine dressing changes.

• The third patient underwent amputation of his 4th and 5th toes with residual dorsal aspect and no exposure. A single-dose human dermal substitute was used and self-adhesive dressing placed over it for 7 days. After weekly replications for 5 weeks, the patient was now almost healed.

CONCLUSIONS

• Self-adhesive dressing technology is a single-point dressing treatment was shown successful for various wounds as both a primary wound and secondary dressing.

• It proved to be a gauze product for applications over dermal substitutes when finding the right secondary dressing to help with wound management balance issues can be challenging.

• It was also effective in cases where previous treatment had failed in patients at risk of further complications and amputations.

REFERENCES

1. Rothenberg GM. Self-adhesive dressing technology: A safe and effective method. Wound Repair Regen. 2008 Feb;16(1):22-
2. Poppel PH. All wound closure, medical care systems training, with open care dressings. Wound Repair Regen. 2008 Jan-Feb;
3. Poppel PH. All wound closure, medical care systems training, with open care dressings. Wound Repair Regen. 2008 Jan-Feb;
5. Akinbami AO. Self-adhesive dressing technology: A safe and effective method. Wound Repair Regen. 2008 Feb;16(1):22-

CASE 2: Forefoot ischemia with severe maceration post dry gangrene treatment

A 65-year-old male patient with non-reconstructable vascular disease was offered a below knee amputation after various therapies failed to heal a wound that began with ischemic great toe. Self-adaptive dressings were initially applied daily, then gradually reduced to twice a week.

A. Week 0:
After medical therapies, the patient presented with a full thickness wound without infection to the entire foot, painful and raw, and the entire foot was not swollen. The patient was unable to separate his toes.

B. 8 weeks:
With weekly applications of self-adaptive dressings were gradually reduced to twice weekly. The toes have essentially healed and epithelialized, residual wound to great toe and medial 2nd toe were starting to close.

C. 16 weeks:
Self-adaptive dressing applications were gradually reduced to twice weekly. The toes have essentially healed and epithelialized, residual wound to great toe and medial 2nd toe were starting to close.

D. 20 weeks:
Combined improvement was observed with self-adhesive dressing application. The toes have essentially healed and epithelialized, residual wound to great toe and medial 2nd toe were starting to close.

E. 22 weeks:
At the follow-up appointment it was noted that the wound continues to improve, the surrounding skin appears healthy.

F. 24 weeks:
At a follow-up appointment it was noted that the wound continues to improve, the surrounding skin appears healthy.

CASE 3: Management of dorsal wound with exposed tendons using dermal substitute and self-adaptive dressing over it

A 50-year-old diabetic male patient with an active substance abuse problem was hospitalized for hyperglycemia and burn wound to the right foot. A significant infection to his right foot developed and the patient underwent partial 4th and 5th ray amputations after his 5th toe turned gangrenous. Post-amputation the patient had a dorsal digital defect and exposed tendons for which NPWT was placed. Further treatment included use of a 3-dimensional human dermal substitute combined with self-adaptive dressing.

A. At presentation:
Immediately post-amputation and surgical debridement, NPWT was prescribed and applied to the open ulcer.

B. Week 5:
After weekly NPWT, the dorsal digital defect and exposed tendons were covered with 3-dimensional human dermal substitute and covered with self-adaptive dressing to aid in the healing of this open ulcer.

C. 2 weeks:
After weekly applications of human dermal substitute and self-adaptive dressing placed over it the wound had closed, the wound was now cohealed and the wound bed was now healed.

D. 8 weeks:
After weekly applications of human dermal substitute and self-adaptive dressing placed over it the wound had closed, the wound was now cohealed and the wound bed was now healed.