Autolytic Debridement and Wound Closure with Novel Self-Adaptive Dressing Technology in Patients with Multiple Comorbidities

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CASE 1: Autolytic debridement and closure of lower extremity traumatic wound

66-year-old male presented with three non-healing trauma wounds located on his right thigh and knee. Patient’s prior medical history included diabetes mellitus, cerebrovascular accident, diabetic peripheral neuropathy, hypertension, alcohol abuse, and follic acid deficiency. Patient is receiving pain management medication.

A. Day 0: At presentation, wounds were covered with slough, yellow eschar and necrotic tissue. Drainage was scant and serous. Wound tissue was pink, dry and intact. Self-adaptive dressings were applied with sterile gauze and tape.

B. Day 10: Pain was reduced to zero and drainage was serous/bloody. Thigh ulcer displayed decreased yellow slough with light tissue present. Blackened dry eschar remained on knee ulcer.

C. Day 28: Wound base was filled with pink, red granulation tissue with decreased yellow and black eschar on knee ulcer. Affected areas were free from bolstering complications. Surrounding tissue was normal and healthy.

D. Week 6: Hypergranulation tissue present on thigh. Wound edges were present. Silver nitrate applied with self-adaptive dressings.

E. Week 7: Thigh wounds reduced in size with bright red granulation tissue and repopulating wound edges. Dry eschar tissue on knee ulcer.

F. Week 14: Thigh wounds were completely epithelialized with thin dry scab tissue on knee. Self-adaptive dressings were discontinued and patient was instructed to apply daily skin cream or vaseline ointment to avoid dryness and increase tensile strength.

BACKGROUND

- Debridement of slough and necrotic tissue is a cornerstone of good wound practice, and critical in reducing bacterial burden within the wound. [1]
- Although autolytic debridement requires additional time to remove devitalized tissue, it is often favored method of debridement in patients with multiple comorbidities due to its safety and selectivity in removing only devitalized tissue. [2]
- Dressings may play a key role in wound healing by promoting autolytic debridement in slough- or necrotic tissue-covered wounds. [3]
- We evaluated effectiveness of a novel, super-absorptive self-adaptive dressing with respect to promotion of autolytic debridement and closure in five wounds.

METHODS

- De-identified data records of patients with wounds that received treatment with self-adaptive wound dressings were retrospectively extracted and analyzed.
- Self-adaptive dressings were applied over wounds with 2 to 3 cm overlap onto intact skin, and adhered with an adhesive or gauze.
- Periwound and wound bed conditions were assessed and documented weekly.

REFERENCE


CASE 2: Closure of trauma ulcer in elderly patient with venous insufficiency

81-year-old female presented with a venous insufficiency leg ulcer that developed secondary to trauma from scratching. Patient’s prior medical history included hypertension, atrial fibrillation on chronic anticoagulation therapy, CKD stage II, depression, gastrointestinal reflux disease, coronary artery disease, peripheral vascular disease, osteoarthritis/osteo-arthropathy. Surgical history includes total abdominal hysterectomy and appendectomy.

A. Day 0: At presentation, wound was dark red with brown and black eschar. Wound was increasing in size and adhered positive for M. morganii and E. faecalis. Drainage was moderate with mild odor. Self-adaptive dressing was placed over the ulcer and surrounding intact skin, and secured with gauze.

B. 12 weeks: Wound base was pink with yellow and grey eschar. Drainage decreased and odor remained foul.

C. 12 weeks: Wound base was pink and red with increased granulation and no exudate. Drainage was moderate with mild odor.

REFERENCE


CASE 3: Slough reduction and closure of chronic venous insufficiency ulcer

Right lower leg venous stasis ulcer in 81-year-old female with multiple chronic conditions.

A. Day 0: At presentation, wound was slough-covered with black eschar. Periwound area was red and inflamed. Self-adaptive dressing was placed over the ulcer and surrounding intact skin, and secured with gauze.

B. 1 week: Slough, eschar and periwound necrosis were considerably reduced and wound edges appeared thicker.

C. 6 weeks: Wound base was mostly red and granulating with minimal exudate.

D. 16 weeks: Wound base was bright, healthy red and edges were flat and contiguous toward the center of the wound.

E. 6 months: Ulcer was re-epithelializing and surrounded by healthy periwound tissue. Wound was fully healed at 6 months.

F. 2 month follow-up: Ulcer remained closed and skin appeared healthy.

REFERENCES