

# Toxic Epidermal Necrolysis: Meeting the Complex Needs of an Exfoliative Skin Disorder Using a Simple Single Dressing Approach



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## Introduction

Toxic Epidermal Necrolysis, TEN, is a life-threatening exfoliative skin disorder requiring a comprehensive and coordinated plan of care.<sup>1</sup> Medical management is required to address the etiology with focus on withdrawal of the offending agent that is commonly a precursor to this skin condition.<sup>1</sup> Recognition of the prodromal signs and symptoms is vital to assist in the development of a treatment plan specific to the management of TEN.<sup>1</sup> Specialty care must be provided to manage ophthalmic, pulmonary and infectious complications.<sup>2</sup> Treatment is most appropriately provided in ICU or more specifically, burn centers where management of complex epidermal loss and the associated complications may be managed.<sup>2</sup> Wound care management is based on achieving 4 primary goals.<sup>1</sup>

- Protection of denuded skin surfaces to minimize further damage to viable sub-epidermal tissue
- Prevention of infection
- Minimizing pain before, during and after wound manipulation<sup>3</sup>
- Management of exudate

## Case Study

60 y/o male presented with complaint of headache for two days, pharyngitis and neck stiffness preceded by flu-like symptoms and fevers ranging from 101 to 103 degrees F.

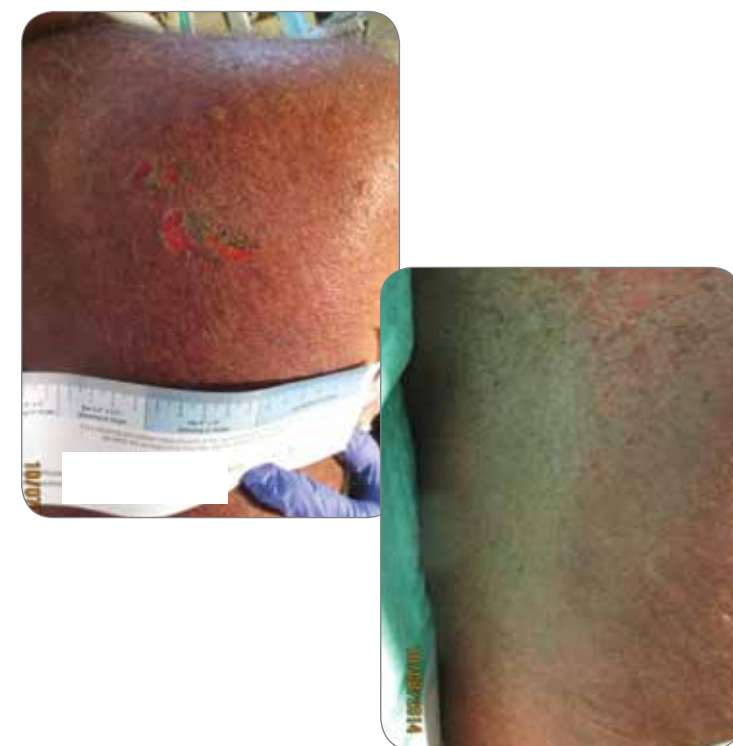
Patient reported completion of a single round of antibiotics, with new anticonvulsant medication initiated prior to admission.

Bone marrow biopsy revealed hemophagocytic lymphohistiocytosis with subsequent chemotherapy treatment. The patient began to have skin symptoms following initiation of chemotherapy.

Admission skin assessment by bedside RN documented rash to buttocks.

## DAY ONE

RN reported attempt to turn patient which resulted in sloughing to the right sub-scapular skin surface. Observed finger imprints which appeared as bright red, moist dermal tissue. Skin to thoracic region appeared ashen gray over bronze skin base with flaking epidermal skin layers. Wound Care Consult revealed positive Nikolsky's sign. SCORTEN/Severity of Illness Score for toxic epidermal necrolysis = 4. This predicted a 62.2% mortality rate based upon admission data.<sup>2,3</sup>



## DAY TWO

Total body surface area affected was greater than 20%; partial sloughing to back, shoulders, posterior thighs, buttocks, neck and upper arms. Turning measures were modified to minimize skin contact and tissue loss. Patient was heavily sedated to manage pain. Patient was not a candidate for transfer to Burn Unit.



## DAY THREE

Total body surface area affected was greater than 30%; progressing to the arms, perineum, scrotum, chest wall and face. Bleeding occurred from mucosal skin surfaces of the mouth and rectum. Eyes showed sub-conjunctival hemorrhage. Trauma Services and Ophthalmology were consulted. The patient's condition rapidly progressed to Multi-Organ System Failure. Full-thickness punch biopsies x 3 confirmed diagnosis of TEN.



**“Dedicated to Allison Feldman who inspired this poster; encouraged me to “think outside the box” and supported my ideas for implementing an alternative practice for the treatment of TEN.”**

### REFERENCES:

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2. Abood GJ, Nickoloff BJ, Gamelli RL. Treatment Strategies in Toxic Epidermal Necrolysis Syndrome: Where Are We At? J Burn Care Rehabil. 2008;29:269-276.
3. Widgerow AD. Toxic Epidermal Necrolysis: Management Issues and Treatment Options. Int J Burns Trauma. 2011; 1(1): 42-50.

## Problem

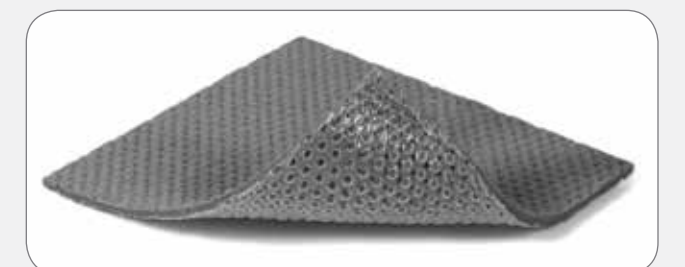
Need for development of a treatment plan to meet the complex needs of a patient with massive tissue loss:

- Protection of the skin from further sup-epidermal tissue loss
- Antimicrobial agent for infection prevention for a highly immune-compromised patient
- Decreased frequency of dressing changes to minimize pain with wound manipulation. Goal: dressing change interval of 7-14 days and PRN
- Exudate management
- Dressing dimensions that would accommodate greater than 30% Total Body Surface Area wound
- Flexible in order to conform to difficult to dress areas
- Dressings must stay securely in place

## Proposal

Utilize a simple dressing approach that can achieve all goals of treatment while providing cost and time savings:

- Soft silicone contact layer that remains in place and allows atraumatic removal of the primary dressing when indicated.
- Silver impregnated primary dressing that provides antimicrobial properties with sustained action for up to 14 days.
- Foam dressing that transfers exudate through the dressing to a secondary absorbent pad that is placed in contact with the primary dressing.
- Soft foam texture that fits and conforms to the natural skin folds and difficult-to-dress areas.
- Dressing that can accommodate large skin surfaces and can be cut to fit specific wound dimensions without altering the integrity of the dressing



## Results and Conclusion

An absorbent soft silicone antimicrobial exudate transfer foam dressing was identified and utilized successfully for 6 days. The single primary dressing was used during this time with secondary absorbent pads replaced BID to absorb drainage. Patient was medicated for dressing removal with no reports of pain while the dressing was in place. The absorbent soft silicone antimicrobial exudate transfer foam dressing demonstrated easy placement and atraumatic removal. Further benefit included autolytic debridement of non-viable sloughing epidermal layers while protecting the moist viable sub-epidermal tissue. While this patient did expire on day six of our treatment plan due to Multi-Organ System Failure, the plan of care allowed us to provide topical wound management that achieved all goals of treatment.