Moisture lesions and associated pressure ulcers: Getting the dressing regimen right

This study aimed to evaluate the efficacy of a combined dressing regimen in the management of moisture lesions and associated pressure ulcer development, with regards to wound healing and pressure ulcer prevention, along with the patient and clinician perspectives. Twenty patients referred to an acute wound care service with a diagnosis of reduced skin integrity due to incontinence, sweat, or wound exudate resulting in erythema, maceration, or combined with pressure ulcer formation were evaluated. Following assessment using a skin integrity tool, all patients underwent a cleansing process using a pH-balancing cleansing foam prior to application of a barrier cream, or barrier spray and soft silicone adhesive foam. The results demonstrated improved healing with no further deterioration of existing pressure ulcers.

KEY WORDS
- Barrier product
- Classification tool
- Wound dressing

Maintenance of good skin integrity is everyone's business and every clinician should be viewed as a skin-care clinician (Bateman et al, 2011). Moisture-associated damage, be it from faeces, urine, sweat and or wound exudate, often results in inflammation, erythema, and skin erosion if not adequately managed (Gray et al, 2011).

Pressure ulcers are a common, often chronic wound, and are described as tissue damage resulting from compressed ischaemic events on bony prominences or from external force, shear and friction (Gorecki et al, 2011). There is a clear link between incontinence, moisture lesions, and an increased risk of developing pressure ulcers (Beldon, 2008). It is therefore imperative that clinicians across all care arenas apply robust assessment, diagnostic and skin-management regimens that are timely and consistent if these risks are to be avoided, and the promotion of the healthy skin integrity is to be maintained.

METHODS

This study was carried out to evaluate patients referred to a large NHS Trust acute senior nurse wound care service that provides a consistent approach and leadership to all facets of wound care for all speciality services and across all age groups in conjunction with senior medical and surgical colleagues. All patients recruited had an initial diagnosis of reduced skin integrity due to incontinence, sweat, or wound exudate.

Skin integrity was assessed using a classification tool for assessment of skin integrity (*Figure 1*) developed by Bateman et al (2011) in line with the European Pressure Ulcer Advisory Panel (EPUAP) position statement (EPUAP, 2005). The tool directs the assessment of the skin, and classifies the patient as either healthy (H), erythemic (E), or as having epidermal damage in regards to lesions (M), and recognises combined reduced skin integrity and pressure ulcer presence (C).

The full tool provides a description of risk assessment and skin management to aid consistency in the care approach across clinical arenas, both community and acute. This tool was used to maintain a consistent approach to assessment, diagnosis, and subsequent management.

Following classification and as appropriate for their skin or wound type, patients were commenced on a management regimen of: (i) a skin-protecting barrier product as the primary layer; overlain by (ii) a soft, silicone-faced polyurethane foam island dressing (*Figure 2*). Patients were monitored over a 4-week period to evaluate the benefits of the regimen.

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Skin Integrity Aide Memoire

South Tees Hospitals NHS
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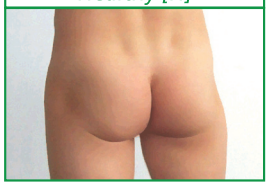
1. Reduced Skin Integrity

2. Classification

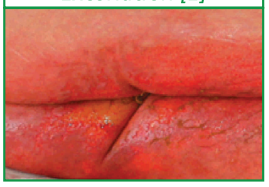
Identified over sacrum, buttocks, groin, thighs and skin folds as a result of incontinence, perspiration, wound exudate, wet skin

Healthy [H]



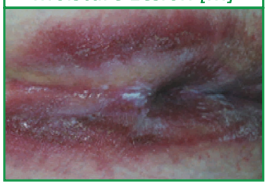
Healthy intact skin
- Not dry, scaly or moist

Excoriation [E]



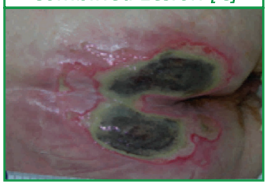
Excoriation
- Erythema / redness
- Diffuse irregular shape
- Skin intact
- Wet / moist

Moisture Lesion [M]



Superficial lesions
- Moisture is present
- Diffuse superficial spots
- 'Kissing' ulcers
- Irregular wound edges
- Partial thickness skin lesion
- Necrosis may be present

Combined Lesion [C]



Combined lesions
- One or more elements of skin damage caused by pressure, moisture or both
- Bony prominences and peri-wound area
- Necrosis may be present
- Distinct edges over bony prominenses, irregular margins to satelite lesions

3. Documentation

Reduced Skin Integrity Identified:
Complete: Wound Care Continuum, Braden, Repositioning Chart, MUST

4. Management

Healthy [H]
- Shower / wash
- Foam cleansing spray
- Barrier cream
- Observation
- Reposition / diet / hydration

Erythema [E] Excoriation
- Shower / clean
- Foam cleansing spray
- Barrier cream
- Blue pad
- If Bristol Stool Type 6 or 7 (ie more than three episodes) consider use of faecal management system
- Reposition / diet / hydration

Moisture lesion [M]
- Shower / clean
- Foam cleansing spray / barrier spray / lollipop applicator
- Mepilex border to moisture lesion
- If Bristol Stool Type 6 or 7 (ie more than three episodes) consider use of faecal management system
- Reposition / diet / hydration

Combined [C] E or/and M
- Shower / clean
- Foam cleansing spray / barrier spray / lollipop applicator
- Mepilex border to moisture lesion
- If Bristol Stool Type 6 or 7 (ie more than three episodes) consider use of faecal management system
- Reposition / diet / hydration

5. Reporting & Recording

a. **Complete:** Datix form
b. **Report:** to Acute Wound Care Service
c. **Refer:** to Community Tissue Viability Nurse if appropriate
d. **Request Medical Photography of Grades 3 & 4 Pressure Ulcers / Combined (Policy G119)**

6. Reassess

As clinical condition dictates

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Figure 1. Classification tool aide memoire for assessment of skin integrity (Bateman et al, 2011).

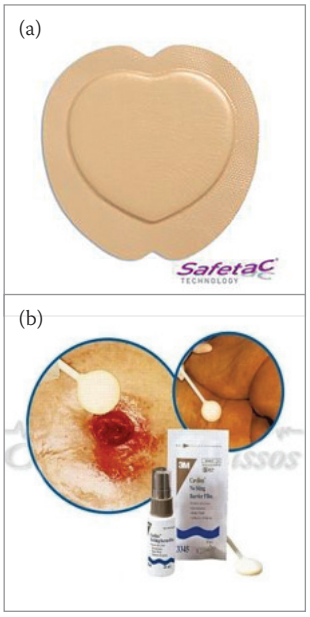

Figure 2. The dressing regimen products used were (a) a soft silicone-faced polyurethane foam island dressing, and (b) barrier product.

Table 1. Patient characteristics and ulcer status

Male : female (*n*)	12:8
Age range (years)	38–86
Classification of skin damage* (*n*)	
Erythema (E)	3
Moisture lesion (M)	10
Combined lesion (C)	7
Skin damage location (*n*)	
Buttock	8
Sacrum	7
Thigh	2
Abdomen	2
Anus	1
Pre-study ulcer duration range (days)	2–28

*Skin integrity classification according to Bateman et al (2011).

Evaluated outcomes were: level of pain according to the McGill pain score (Melzack, 1975), duration of therapy, and skin outcome (designated as healed, healing, static, or deteriorating). The deterioration or development of further pressure ulcers within this patient group was also a key point for evaluation, because of the increased risk of pressure ulcer formation in those patients already presenting with incontinence-associated dermatitis (Fletcher, 2012).

RESULTS

Twenty patents were recruited (*Table 1*). All patients were deemed at either medium or high risk with regards to skin integrity and nutrition status via local assessment tools – Braden scale (Bergstrom et al, 1987) and Malnutrition Universal Screening Tool (NICE, 2006). Patient characteristics are shown in *Table 1*.

All 20 patients had various cleansing, dressing, and management regimens in place prior to the study commencing, including soap and water, sterile saline, non-irritant foam cleansers, incontinence pads, and various non-adhesive and adhesive sacral foams. Barrier spray or cream was being used in a minority of cases.

Evaluation of the dressing regimen

Following diagnosis and assessment using the skin integrity tool (*Figure 1*), all patients underwent a cleansing process using a pH-balancing cleansing foam prior to application of a barrier cream (those classified as E), or barrier spray and soft silicone adhesive foam (those classified as M or C).

Beeckman et al (2011) recognise that an increase in pH because of faeces, urine, or wound exudate increases stratum corneum swelling and alters lipid rigidity, increasing the permeability of the skin and thus reducing its barrier function. Furthermore, an alkaline pH increases bacterial burden, which can lead to cutaneous infection. Barrier products have been highlighted by Williams (2001) as reducing skin irritation and epidermal damage by forming a protective barrier against pH-increasing contaminants such as faeces, urine, and wound exudate.

Box 1. Summary of products deployed

- Non-stick, non-tacky dispersing barrier spray.
- Excellent absorption capabilities of foam.
- Atraumatic adhesion properties.
- Protective outer covering in regards to body fluids.
- Barrier protection on patient repositioning without creasing.
- Reapplication of both products with no detriment to wound surfaces.

In the present cases, Safetac® (Mölnlycke Health Care) soft silicone adhesive foam dressings, in either a sacral or square shape, were used as the secondary dressing (*Figure 2*). This dressing type was selected for its ability to minimises pain and wound bed trauma, and seal the area, thus ensuring exudate is contained and outside contaminants excluded (White, 2005). These key elements of the regimen were essential prior to the evaluation commencing because of the skin fragility and high pain scores in the patients involved (*Box 1*).

Those patients who had combined lesions with pressure ulcers had appropriate formulary cavity-packing products deployed prior to the study regimen being implemented. In the first week the dressing regimen was applied to all patients every 48 hours, reducing to 72 hours thereafter unless incontinence contaminated the dressing products, in which case redressing

Table 2. Summary of findings

Risk assessment – Braden scale (*n*)*	
Medium risk	17
High risk	3
Risk assessment – Malnutrition Universal Screening Tool (*n*)†	
Medium risk	7
High risk	13
Pain rating (range)	
Pre-intervention	2/10–8/10
Post-intervention	0/10–1/10
Healed (*n*)	16
Healing (*n*)	4
Study duration range (days)	3–28

*Braden risk assessment tool for skin integrity (Bergstrom et al, 1987).
†MUST assessment tool for nutrition status (NICE, 2006)

Box 2. Annie's story

My name is Annie and I am a 72-year-old woman who cares for my disabled husband, John, aged 74, at our warden-controlled home. Before I went into hospital I already had a sore on my bottom, which I had had for several months following a fall at home. The district nurses had been coming to dress it three times a week, but it was not really getting any better, to be honest.

It was when I was admitted to hospital with my unstable blood glucose that I became quite poorly and weak and developed a water works infection, which made me wet myself before I could get to the toilet. I am very independent, and didn't like to bother the nurses if I thought I could make it on my own, but sometimes I didn't get there in time. This made my skin on my bottom very sore and painful, and no matter what the nurses did, it was getting worse; the smell was horrible and I couldn't wear my own clothes in case I spoilt them.

I had different types of dressings and creams that made my skin soggy, and sometimes my skin rubbed onto the bed sheets. I don't think anyone really knew just what to do with me. The senior wound care nurse came and suggested a new plan that she felt may help. I was ready for trying anything so I agreed. The nurses showered me gently and sprayed an invisible cooling liquid onto my bottom after they had packed my bed sore. I then had a round beige dressing put on, covering all my sore skin.

I was a bit worried at first as all the other dressings I had put on either leaked or come away when I moved, so I took it easy at first. After a good night's sleep it was all still in place the next day and so I tried walking about and getting on with things, which was what I needed to do if I was going back home to look after my husband. The dressing and spray was comfortable, and the nurses only needed to change it when I went in the shower. It didn't hurt when they took it off like the other dressings, and the nurses reassured me that my sore skin was getting better each day.

After several days I only needed my pressure sore dressing, as my skin had healed over, which was great. It pleased me that even that was getting better, so we kept using the beige dressings for my sore after I left the ward to go home.

"I dreaded the removal of my dressings more than my being incontinent, the pain was unbearable; these new dressings that the nurse has used made a big difference to my pain, they are very comfy." Annie.

"Having an aide memoire and a simple dressing plan has made the caring for these type of patients much easier; the dressings and spray are familiar to me and very easy to use." Healthcare assistant band 3.

was immediate. The packing products were not changed, so the only change was the washing foam, barrier spray and secondary dressing. This was to reduce any variables which could have contained the exudate. The changes reduced the need for dressing change frequency as a positive outcome.

From the clinical perspective, the dressing regimen had a positive wound care healing outcome, patient experience and reduced dressing input resources.

Within the wound care arena the patients' perceptions and experience of their wound care journey and the clinical input they receive is becoming equally valued from a national government drive. Patient satisfaction as a marker for quality within the NHS is quickly gathering pace with financial implications for healthcare budgets and business planning agendas becoming a priority (Blakemore, 2010). Within the evaluations, the patient's story was documented alongside the clinical outcomes to provide a patient perspective to complement the success of the dressing regimens.

Annie's story (*Box 2*) is a powerful adjunct to the clinical element of the evaluation in that it provides the reader with her personal experience, her priorities and needs which enables the clinician to gain a true insight into her expectations. Prompts such as this can enable more accurate care planning, need for change and improvement in the goal of achieving a positive patient wound care journey.

DISCUSSION

This evaluation of 20 patients of various ages with clinically assessed medium or high risk factors, a variety of wound types and stages of healing, demonstrated improved healing status outcomes alongside no further deterioration of present pressure ulcers or development of others (*Table 2*).

Of note were the reduced pain scores, maintenance of a protected wound bed from outside contaminants, and reduced number of dressing changes providing a more consistent dressing regimen, which impacted positively upon both nursing and financial resources. The patient experience is vital to the holistic wound care process, and this evaluation has demonstrated a positive wound care journey from both the patient and clinician perspective.

"It is essential to continue to consistently implement the use of formulary products that have a good evidence base for their effectiveness, and robust assessment tools and care plans."

CONCLUSION

The introduction and use of a formulary barrier cream or spray alongside a soft silicone foam adherent island dressing in management of the moisture lesions or pressure ulcers in this study demonstrates a positive wound care healing outcome, patient experience and clinician perspective.

As part of the management of reduced skin integrity, and pressure ulcer deterioration, it is essential to continue to consistently implement the use of formulary products that have a good evidence base for their effectiveness, and robust assessment tools and care plans. This should be in conjunction with fundamental care needs such as hygiene, nutrition, hydration and mobility if excellent standards of care are to be maintained.

In healthcare we are witnessing a significant shift towards patients who are of increased age and bariatric status with complex co-morbidities, alongside stringent corporate targets, reduced bed availability and a focus on reducing the length of bed stay.

As clinicians we must continue to explore new and innovative methods for managing our patients using current wound care formulary products, and to develop streamlined assessment and management tools to ensure that we are providing the best practice standards for our patients and their carers. WUK

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