How silicone wound contact layers promote healing and patient comfort

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With the plethora of wound contact dressings available and the demand for their use in clinical practice, clinicians need to keep abreast of what is new on the market to ensure that they provide their patients with the best treatment options, while also considering the costs involved. Preventing pain to the patient, trauma to the wound or periwound skin, and infection, are key considerations for clinicians at dressing changes (Hollinworth, 2001). With advances in wound care technology, patients should not experience pain due to adherent products causing trauma to the wound and/or ‘skin stripping’. The use of silicone dressings can help to prevent such occurrences from happening and thus promote patient wellbeing and quality of life (Upton, 2011; Yarwood-Ross, 2013). This article looks at the role of primary wound contact layers in wound management, and introduces a new silicone dressing with case reports demonstrating its positive effects in clinical practice.

KEYWORDS:
- Silicone wound contact layer
- Exudate
- Pain
- Periwound skin care

Primary wound contact layer dressings play a vital part in wound management, as they both absorb light volumes of wound fluid and help to remove excess exudate (Wound Union of Wound Healing Societies [WUWHS], 2007), hence protecting the wound bed. They tend to be used in the early stages of healing to promote the growth of granulation and epithelial tissue (Benbow, 2002). As they are thin, non-adherent, inert dressings, they can be used on wounds with fragile periwound skin, which are often found in the elderly (Best Practice Statement, 2012).

As their name implies, wound contact layer dressings are applied directly to the wound bed to protect from trauma, e.g. at dressing changes, and then covered with a secondary dressing of choice to promote a moist wound healing environment.

Wound contact layers are designed for use on a variety of wound types, namely:
- Skin tears
- Traumatic wounds
- Graft fixation
- Skin conditions, particularly blisters
- Granulating wounds
- Primary dressing in pressure ulcers and negative pressure wound therapy (NPWT).

They tend to be perforated or permeable, which enables moderate to high volumes of exudate to pass through into the secondary dressing.

Although wound contact layers can be made from traditional materials such as gauze or polyester, newer, more advanced materials such as soft silicone are now used. Silicone-based dressings are particularly noted for their ability to:
- Conform to the wound
- Be allergy-free
- Prevent pain at dressing change
- Prevent epithelial stripping on removal (White, 2005; Meuleneire et al, 2013).

When caring for patients with wounds, it is vital that clinicians take steps to control exudate, ensure pain-free dressing changes, and keep the periwound skin intact — aspects which all help to promote patient wellbeing.

CHANGING DEMOGRAPHICS

Community nurses are currently experiencing huge demographic changes in the patients that they see on a day-to-day basis, with government initiatives such as the Five Year Forward View driving more patients from secondary care settings such as hospitals into the community (NHS England, 2014). This means that as well as more patients with complex wounds, such as post-surgical wounds, community nurses will begin to see a general increase in the amount of elderly and frail patients in primary care as people are discharged earlier from hospital, either back to their homes or into facilities such as care homes.

Similarly, changes in the health of the general population brought about by medical advances mean that the future will bring an increase in the amount of people in the community with long-term conditions such as diabetes, heart disease and dementia (Carrier, 2015). Not only will this greatly...
increase the chance that community nurses will come across skin tears, pressure injuries, leg ulcers and light trauma injuries that require protection if not hospitalisation (Bianchi, 2012), it also means that wound contact layers will be increasingly in demand as more wounds progress towards healing in primary care using advanced wound care technology such as portable negative pressure wound therapy (NPWT) (Vowden, 2014).

The natural consequence for community nurses of this re-balancing of the healthcare environment will be an increase in their wound care caseload, meaning that it will be increasingly important for them to have access to versatile and widely applicable wound care dressings.

**EXUDATE CONTROL**

While a certain amount of exudate is normal and needed to prevent the wound from drying out, as well as providing clues as to its condition through the colour, quantity, viscosity or smell (WUWHS, 2007), if the volume increases too much this can have detrimental effects, such as maceration of the periwound skin (Beldon, 2014), as well as being indicative of chronicity and the presence of infection or inflammation.

Wound contact layers can help with both the positive and negative aspects of exudate control, as while helping to take excess fluid away from the wound bed into a secondary dressing and thereafter acting as a barrier between the wound bed and the absorbent dressing, they also stop tissue dehydrating and subsequent cell death and help to promote the growth of new blood vessels (angiogenesis).

**MINIMISING PAIN AT DRESSING CHANGE**

It has been demonstrated that dressing removal can cause considerable pain to patients, particularly if the wound has dried out and adherent products have been used (Moffatt et al, 2003). Without doubt, any pain can have a detrimental impact on the patient and adversely influence their patient journey. Thus, it is vital to assess and manage pain. Introducing an additional, non-adherent primary layer before applying other products can lessen this problem (Thomas, 2003).

**MAINTAINING PERIWOUND SKIN INTEGRITY**

If excess exudate is allowed to leak onto the periwound skin this can cause maceration and/or excoriation, both of which can result in pain, discomfort and increase the size of the wound. However, skin damage can also be the result of adhesive-bordered dressings being frequently removed and lifting the top layer of the skin (‘skin-stripping’) — triggering pain, oedema and an inflammatory reaction (Langoen and Lawton, 2009). Thus, it is important to meticulously assess the periwound skin as part of holistic wound management and to choose appropriate, atraumatic dressings both to protect the sensitive periwound skin from being exposed to moisture and preserve its integrity at dressing changes.

In order to provide the best care for patients in the community, clinicians need to keep up to date with the new products available and be aware of their benefits in practice. One such dressing that has recently been introduced to the Drug Tariff is ActivHeal® Silicone Wound Contact Layer (Advanced Medical Solutions).

**ACTIVHEAL® SILICONE WOUND CONTACT LAYER**

The ActivHeal Silicone Wound Contact Layer has recently been introduced to the market for use on nil-to-heavily exuding chronic and acute wounds, with an appropriate secondary dressing. The dressings,
which come in a range of sizes (Table 1), are indicated for use on:

- Skin tears
- Surgical incisions
- Second-degree burns
- Partial-thickness skin grafts
- Pressure ulcers
- Venous and arterial ulcers.

The dressings can also be used under compression bandaging and with NPWT.

They are made up of a knitted polyester fabric coated with silicone adhesive on both sides, which, while providing secure adhesion, also prevents the dressing from adhering to the wound and reduces pain at dressing change. It interacts with the secondary dressing of choice by allowing wound fluid to pass vertically into the absorbent dressing. It has also been found to be effective as a protective layer for dressing. It has also been found to interact with wound fluid to pass vertically into the absorbent dressing. It has also been found to be effective as a protective layer for non-exuding wounds such as blisters and fragile skin.

As the dressings can be left in situ up to 14 days, depending on the patient’s health and volume of exudate being produced, this helps to reduce the frequency of dressing changes and disturbance to the wound bed. This, in turn, also helps to main the integrity of the periwound skin.

The author undertook a series of case evaluations with ActivHeal Silicone Wound Contact Layer to assess the dressing’s:

- Efficacy
- Comfort
- Ease of removal
- Ability to minimise pain at dressing change
- Atraumatic nature on fragile skin.

These cases show how the dressing can be used on a variety of wound types, making a positive contribution to reducing pain, promoting healing and protecting the periwound skin and thus improving patient wellbeing.

CONCLUSION

Exudate control, pain management and care of the periwound skin should be paramount when choosing treatment options for patients with wounds. With wound management being increasingly outcomes driven, i.e. clinicians needing to consider and able to tick both the clinical and cost-effective boxes, it is essential that they are aware of new dressings available and their performance indicators in order to provide quality care that also suits NHS budgets.

REFERENCES


Table 1: ActivHeal® Silicone Wound Contact Layer dressing sizes

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<tr>
<th>Product</th>
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Figure 2. Pack shot of ActivHeal® Silicone Wound Contact Layer.
This patient was a 68-year-old man who was being cared for by his GP and general practice nurse. He was a non-smoker who had renal dysfunction, peripheral oedema, Parkinson’s disease and arterial disease. He had a skin tear on his lower limb (left anterior calf). He frequently incurred such skin tears through trauma from itching, or as a result of his increasingly unsteady gait, due to the underlying Parkinson’s disease. He also liked to remain as active as possible and so continued to play golf, which again often resulted in tearing his skin. He gave permission to take part in the evaluation, although he had previously been non-concordant with the primary care team’s dressing choice which he found uncomfortable. This included inadine patches, non-adherent dressings and lightweight conforming bandages, which he did not like to wear as they were visible when he wore shorts. After consultation with the patient, the author decided to use ActivHeal® Silicone Wound Contact Layer, with a basic non-adherent dressing and micropore tape.

At presentation the wound had a slight odour and the patient rated his pain as 5 on a 10-point scale, where 1 was no pain and 10 the worst pain.

At initial presentation, the wound was inflamed with minimal periwound involvement. There was some oozing present which had a slight odour and there were signs of critical colonisation, with a small amount of slough.

After one week of treatment the wound measured 2x2x1cm and was 40% epithelial tissue, 50% granulation and 10% slough. There were signs of critical colonisation and there was a moderate amount of clear, amber, thin exudate and there was a slight odour. The skin surrounding the wound was red, but there were no signs of maceration. The patient rated his pain as 3 on a 10-point scale (where 1 was no pain and 10 was the worst pain). The dressing was being changed twice a week.

After two weeks of treatment there was no longer any slough, epithelial tissue made up 60% of the wound bed and granulation tissue was at 40%. The depth of the wound now measured 0.5cm. There was no longer any sign of critical colonisation and the wound exudate was clear, amber and thin and was now at a low volume. The patient now rated his pain as 1 on the 10-point score.

After three weeks of treatment the wound consisted of 100% epithelial tissue and measured 1x1x0cm, with no signs of critical colonisation or infection and with healthy periwound skin.

When asked about the dressing, the clinician rated it as very easy to use, apply and remove and said it was atraumatic to both the wound and periwound skin. Furthermore, the patient reported no pain both on application and removal, with no analgesia being needed. The dressing had also conformed well to the wound.

The clinician reported that the patient had been concordant with the treatment and found the dressing comfortable and that it met his needs. The dressing had provided a moist healing environment and as the patient was concordant due to his comfort, the outcome was positive. She said she would recommend that the dressing be added to the formulary.

When asked to comment on the dressing, the patient said he liked the dressing as it was light, comfortable and malleable. He rated it very comfortable and he was very satisfied with his treatment. Pain at the wound site varied and decreased over the four-week evaluation period (ranging from 5, 3, 1, 0).
Case 2

The patient in this case was a 45-year-old woman with broken lesions on her neck due to having had shingles. She was a non-smoker and before being recruited to the evaluation had received no treatment.

At presentation there were multiple oozing rash sites, measuring 5x6cm and consisting of 15% epithelial tissue, 71% granulation tissue and 10% sloughy tissue (Figure 6). There were signs of critical colonisation and spreading local infection and the skin around the rash was red. At this stage, the patient rated the pain that she was experiencing from the rash as 6, on a scale where 1=no pain and 10=worst pain. It was decided to apply ActivHeal Silicone Wound Contact Layer (Figure 7). The patient immediately commented on how comfortable and secure the dressing felt, as it moulded to the curvature of her neck.

When the patient visited clinic the following week, the condition of her rash had improved considerably. There was now 85% epithelial tissue and 15% granulation tissue and the lesions had reduced in size. There was no longer any sign of infection and the skin condition around the rash was healthy — the patient now gave a pain score of 3 (where 1=no pain and 10=worst pain).

After two weeks’ treatment with the non-adherent silicone dressing, with weekly dressing changes, the lesions and surrounding skin areas had completely healed. The clinician attributed this to the dressing providing a moist wound healing environment, while also offering protection to the infected skin. When asked about its ease of use, she rated this as 1 on a scale where 1 was very easy and 5 very difficult. Using the same scale she scored ease of application as 1 and removal as 2, and also found the dressing to be atraumatic (giving it a score of 4, where 1=traumatic and 5=atraumatic). The dressing also conformed very well to this anatomical location and remained in place, with the patient experiencing no pain on application or removal.

The patient expressed similar views, finding the dressing comfortable and effective as it provided a light covering to the rash. She rated her satisfaction as 1 on a scale where 1=very satisfied and 5=dissatisfied.

At initial presentation, the patient expressed a feeling of exhaustion and general malaise due to recent illness, and the sores were causing discomfort and pruritus. She also said that her general mood was affected due to change in body image from the visible presence of the sore area. However, the dressing offered comfort and assisted the healing process, which was shorter than expected and no further dressings were needed.
Case 3

This female patient was 70 years old and had a surgical incision as a result of having her fourth toe on the left foot amputated. She was a non-smoker. Before being seen by the author she had two post-surgery follow-up appointments with hospital nurses.

The dressings used immediately after surgery were chosen to support the foot/wound site. However, the surgical site itself was uncomfortable, requiring the patient to take regular analgesia. The patient also found the supportive boot unsightly and, while she was concordant with treatment, as she understood the need for support and protection post surgical intention, due to the nature of the surgery and the boot she expressed some negative feelings around body image, a reaction often related to amputation.

When the patient first presented at the author’s clinic one week after surgery, the surgical incision measured 4x1cm and was epithelialising with a small area of sloughy tissue.

Slight critical colonisation was noted but the periwound skin was healthy and only a low volume of thin, yellow-coloured exudate was being produced. There was no odour and the patient rated her pain level as 3 on a scale where 1 was no pain and 10 the worst pain. Thus, the author decided to apply ActivHeal Silicone Wound Contact Layer, after discussion and agreement with the patient, as it was felt that this was an appropriate choice for this post-surgical wound to promote an ongoing healing environment. Furthermore, being a thin dressing it allowed her to wear normal footwear. During the first week the dressing was changed twice. This was done to check that the wound was healing effectively, as had the wound not been making good progress, referral to the surgical team would have been needed.

At week 2, the tissue types present in the wound bed were epithelial and granulation, and the surrounding skin remained healthy. The patient now rated her pain as 0 on a score where 1 was no pain and 1 the worst pain.

Throughout this two-week evaluation the author found the dressing easy to use, apply and remove (rating all domains 1 on a score where 1=very easy and 5=very difficult). It remained in situ, which in the author’s clinical experience, can be an issue when dressing toes and feet. The author also found the dressing atraumatic both to the wound bed and periwound skin, again giving this domain the highest score. Similarly, the patient felt no pain on dressing application or removal and no analgesia was needed.

Although the patient rated her pain as 3 over the evaluation period (where 1=no pain and 5=very painful), she gave the dressing the highest scores for comfort and patient satisfaction. She found the dressing lightweight, and said that it was comfortable and soothing to the site on application, as it conformed well to the wound area without pulling on surrounding tissue.
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