Improving patients’ experience of dressing removal in practice

Geraldine Reevell, Tessa Anders, Tracey Morgan

Repeated application/removal of adhesive dressings and tapes can cause skin stripping in and around wounds, resulting in pain, increased wound size, delayed healing, inflammation and increased risk of infection. Adhesive tapes and dressings are also used widely in many care settings to secure tubes, monitors and drains, while the more fragile skin of children and the elderly is at increased risk of epidermal stripping when adhesive dressings are removed. Here, the authors use a series of case studies to demonstrate how Appeel® Sterile Liquid Sachet and Spray applications (CliniMed Ltd), part of the Appeel Sterile Medical Adhesive Remover range, help with adhesive removal, reducing pain and trauma. This article examines how Appeel Sterile removes dressings, tapes and other medical adhesive appliances quickly and easily from both intact and broken skin, resulting in reductions in pain, trauma, use of analgesia, infection risk, cost of dressings and nursing time.

KEYWORDS:
- Skin stripping
- Delayed healing
- Pain
- Periwound skin care

The removal of adherent tapes and dressings can cause skin stripping to the wound and periwound area, particularly in certain vulnerable groups such as children and the elderly whose skin is more fragile. Although there are atraumatic dressings available, many of the products used in everyday community practice still have an adhesive element to them, particularly some wound care dressings and adhesive tapes. When these are changed, they can remove parts of the top layer of the skin, which, as well as causing trauma, can reduce the effectiveness of the skin’s barrier function (Waring et al, 2011).

Repeated application and removal of dressings — which is likely in wounds with a high level of exudate or in chronic wounds that have become static — has been found to strip the stratum corneum and increase transepidermal water loss (Zillmer et al, 2006). This skin stripping can also cause inflammation, soreness and pedema (Tokumura et al, 2005), and leave the periwound skin and wound vulnerable to infection.

Trauma caused by dressing removal can increase the size of the wound as well as increasing the time the wound takes to heal (White and Hollinworth, 2006). The periwound skin can be particularly prone to damage in older people whose skin is more fragile due to ageing, so will be a frequent problem encountered by community nurses.

DRESSING-RELATED PAIN

Dressing removal is considered to be the most painful aspect of wound care (European Wound Management Association [EWMA], 2002) and it is frequently mismanaged (Brown, 2014). Pain caused by dressing removal can delay wound healing because catecholamines (neurotransmitters produced in the adrenal glands and released in response to stress or pain) decrease the activity of white blood cells, thereby reducing the inflammatory response (Joseph, 1997).

Skin stripping

Skin stripping exposes the nerve endings in the outer layers of the skin, causing pain and affecting the blood supply to the wound area through vasoconstriction of small arterioles. This reduces the flow of essential nutrients and oxygen to the wound area and decreases the resistance to infection (Benbow, 2013). This precipitates further delays to healing.

Dressing-related pain needs to be managed to avoid unnecessarily extending wound-healing time (Benbow, 2013). As well as affecting healing time, unresolved pain can have a hugely negative impact on a patient’s quality of life (World Union of Wound Healing Societies [WUWHS], 2004). The WUWHS recommended assessing and documenting pain during and after dressing changes so that action can be taken quickly to stop any unnecessary pain being inflicted on patients. The WUWHS (2004) also urged clinicians to be vigilant about dressing-related pain and to prepare, plan, manage and prevent pain whenever possible.

Ongoing assessment of pain levels and adjusting treatment plans accordingly is essential. Care must be taken when removing adhesive dressings as it is important to try to maintain the integrity of the periwound skin and to avoid trauma, skin stripping and also to reduce the risk of secondary infection (Denyer, 2010).

DRESSING REMOVAL

Rippon et al (2007) examined the characteristics of different dressing adhesives and explained that dressings which use aggressive adhesive systems...
From one cry baby to another

Appeel Sterile medical adhesive remover helps to remove dressings and adhesive appliances from delicate skin easily, whilst reducing pain and skin stripping. So, by using our unique range of applications, now including a single patient multi-use spray, you can make tearful dressing changes history.

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can trauma on a wound site and the periwound skin, which accentuates wound pain and impedes healing. Sterile medical adhesive removers can help provide pain-free removal of various products including adhesive dressings, tapes, skin barriers and other adhesive appliances (Benbow, 2013).

Dressing removal can be a costly and time-consuming process, involving extensive nurse time and significant expertise and knowledge. Some adherent dressings will need to be soaked before they can be removed, for example, particularly when exudate levels are high, and this kind of wound care task can take up significant time that could be spent on treating other patients.

Products designed to assist with dressing removal can reduce pain, avoid damaging the periwound skin and result in time savings. They can also help to minimise the cost of treating other patients.

The siloxanes (a subgroup of silicones) used in Appeel Sterile have a very low surface energy, which allows them to disrupt the adherence between the dressing and the skin (Cutting, 2006), making the dressing easier to remove. As well as easing the removal of adhesive appliances, Appeel Sterile does not leave any residue, meaning subsequent adhesive application is unaffected. Appeel Sterile has a gentle formula that can be used on sensitive skin and is especially suited to older people, the very young and for patients with conditions such as epidermolysis bullosa. It can be used on all medical adhesive appliances/devices covering any type of wound and on both intact and broken skin, or to prevent potential skin stripping where there is vulnerability. It is particularly useful when treating patients who have a high risk of infection (Cooper, 2010). Appeel Sterile has also been shown to effectively minimise pain when removing adhesive tapes in paediatric intensive care patients (Rodgers, 2013).

Appeel Sterile Liquid Sachet

Appeel Sterile Liquid Sachet is ideal for single use and can be directly applied via its easy-to-use unique delivery system. Appeel Sterile Liquid Sachet uses a no-touch application to remove all types of adhesives and dressings, including smaller dressings and larger products, e.g. those covering pressure damage located in the spinal region or large abdominal wounds.

Appeel Sterile Sachet’s delivery system incorporates a patented 5ml single-use liquid sachet, which makes it ideal for use when risk of cross-infection is a concern.

Appeel Sterile Wipes

One of the benefits of Appeel Sterile Wipes: suitable for the removal of small tapes and dressings.

For single patient multiple use, Appeel Sterile is also available as a 100ml spray suitable for multiple dressing changes and ideal for use in the community.

As adhesive dressings can adhere aggressively to the ulcer or periwound skin and cause trauma/ skin stripping on removal, Appeel Sterile Spray was used to help dressing changes. The clinician said that dressing changes became easier, as there was no longer concern about skin stripping or extending erythema. While the length of time between dressing changes did not lessen, the vulnerable periwound skin significantly improved without any adverse effects. Appeel Sterile is still being regularly used by the patient and his family as part of their self-care regimen.

Older medical adhesive removers are alcohol-based and can sting and dry out the skin, but Appeel Sterile’s silicone formulation avoids this. It is inert and latex-, preservative- and fragrance-free, and does not impact on wound healing (CliniMed, 2010).

CASE STUDY 1

Wheelchair-bound patients are inevitably at increased risk of developing pressure ulcers to their buttocks. This patient was paraplegic and mobilised using a wheelchair, developing a stage 4 pressure ulcer to his right buttock. At initial presentation the patient’s ulcer was being treated with Tegaderm™ Foam Adhesive (3M Health Care), which needed changing seven times per week. The condition of the periwound skin was also poor as it was red and friable. Although his situation was such that dressing changes might have incurred pain, as he had lost all sensation below the waist no pain relief was needed.

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Figure 1. Pressure ulcer of right buttock. Periwound skin area following dressing removal without use of Appeel Sterile Spray.

Figure 2. The patient’s periwound skin improved following dressing removal using Appeel Sterile Spray.
CASE STUDY 2

This middle-aged bed-bound female patient presented with stage 4 pressure ulcers to the sacrum and spine. She had a past medical history of chronic obstructive pulmonary disease (COPD) and was receiving oxygen therapy.

In January 2015 she was treated with DuoDerm® Hydrocolloid (Convatec), with twice-weekly dressing changes. However, due to the fragile nature of the surrounding skin, this was changed to Mepilex® Border (Mölnlycke Health Care) in February 2015. At this stage, the volume of exudate produced necessitated three dressing changes per week.

In September 2015, the treatment regimen was again changed to Tegaderm™ Foam Adhesive (3M Health Care), as the patient had developed sensitivities to the previous dressings used. This dressing was removed and reapplied seven times per week.

If adhesive dressings are repeatedly applied and removed, this can cause skin stripping both to the wound bed and surrounding skin and, at this stage, the patient’s periwound skin was red, dry, fragile and broken, and dressing changes were causing her considerable pain and distress. Indeed, on a pain scale ranging from 0–10 (where 0=least pain and 10=greatest pain), the patient rated her pain score as 10, despite being given morphine to manage the pain.

The decision was thus taken to introduce Appeel® Sterile Spray (CliniMed) to help alleviate the distress that the patient was experiencing at dressing changes. An immediate reduction was seen in the patient’s pain score — she now rated it as 2 on removal of the adhesive dressing. The clinician also stated that the dressing was easier to remove and that incorporating Appeel Sterile Spray into the removal process was both effective and easy. The condition of the periwound skin improved and dressing changes for the pressure ulcer to the spine reduced to every two days.

Although the sacral pressure ulcer deteriorated with the volume of exudate increasing, due to Appeel Sterile Spray the tissue viability team had the opportunity to introduce a stronger adhesive and more absorbent dressings, which were better able to manage the wound fluid and would previously not have been considered due to the risk of epidermal stripping.

The patient no longer required morphine at dressing changes and the clinician commented that she found the procedures far less stressful and no longer dreaded them. Her family continued to ensure that Appeel Sterile was used at each dressing change to maintain pain-free and atraumatic dressing removal for the remainder of her life.

Removing adhesive dressings can result in extensive stripping of epidermal tissue due to the fragile nature of the skin’s integrity. This case shows how introducing a sterile medical adhesive remover into the treatment regimen not only made dressing removal easier for the clinician, but also reduced the pain that the patient was experiencing at dressing changes and did not cause any further irritation to compromised skin integrity. This, in turn, lessened the patient’s anxiety and stress and also improved the skin’s condition.

Sterile Spray is patient comfort as there is no cold sensation when it is sprayed onto the skin due to the bag-on-valve (BoV) spray technology. This technology means that, unlike normal aerosol sprays, a propellant is not required (the rapid evaporation of this propellant is what causes the coldness on the skin with aerosols).

Appeel Sterile Spray is ideal for use in the community for single patient, multiple use. It can be used on all dressings and medical adhesives, e.g. in chronic leg ulcers or the removal of urinary sheaths. Appeel Sterile Spray delivers the following benefits:
- No cold sensation on application
- Can be sprayed at any angle
- The contents of the spray remain sterile for the life of the product (until expiry)
- One hundred percent delivery of product; no wastage
- Large 100ml can provides extended use.

What are the benefits of using Appeel Sterile?
Appeel Sterile helps to reduce the
CASE STUDY 3

This 80+ year-old female patient with a medical history of Parkinson’s disease, dementia and poor mobility developed a pressure ulcer to her coccyx, classified as stage 3. The wound was initially treated with Tegaderm™ Foam Adhesive before Nanova™ (KCI) negative pressure wound therapy (NPWT) was introduced. When the foam adhesive dressing was used alone, it needed to be changed seven times a week. However, this reduced to twice-weekly dressing changes after starting NPWT.

However, at each dressing change, buprenorphine patches and morphine were needed due to the level of pain experienced by the patient. The periwound skin was damaged and friable, which contributed to the patient’s distress at dressing changes. When asked to rate her pain on a scale of 0–10, it needed to be changed seven times a week. However, this reduced to twice-weekly dressing changes after starting NPWT.

Figure 1. Periwound area of a pressure ulcer to the coccyx before the use of Appeel Sterile Liquid Sachet for dressing removal.

(where 0=no pain and 10=greater pain), the patient chose the highest level of 10.

Appeel Sterile Liquid Sachet was introduced to the care management plan to help alleviate the patient’s distress at dressing changes. This had an almost instant positive effect in that the patient’s pain score fell to 1 on the same numerical scale, and the periwound skin also improved, as there was no longer any evidence of the skin stripping previously seen. The clinician recommended to the patient that she would cry out during dressing change. However, the clinician reported that the patient was now far happier and allowed the dressing to be changed quietly without the anxiety previously experienced.

It also cuts down on the amount of time spent dealing with the distress of a difficult dressing change and avoids trauma, pain and skin damage. Pain-free dressing changes do not interrupt the healing process and as the skin remains undamaged, the wound is not extended and the periwound skin will be less prone to infection (Cooper, 2010).

Similarly, using Appeel Sterile means there are no extra costs involved in dealing with the effects of skin stripping that results from more complicated or problematic dressing removal. This improves the potential for quicker healing rates, cutting down on the overall cost of treatment. In one study of 155 patients, it was found that 90% of nurses found it significantly easier to remove dressings when using Appeel Sterile compared with their usual method, while 87% of them found it performed better overall than their current method of dressing removal (CliniMed, 2010). This improved performance could add up to savings in health costs, despite the initial investment.

Table 1: Key benefits of Appeel Sterile Medical Adhesive Remover range

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<tr>
<th>Benefit</th>
<th>Details</th>
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<tr>
<td>Reduces periwound trauma</td>
<td>Repeated adhesive dressing removal may impact upon the barrier function of the skin, resulting in skin breakdown which may in turn expose the nerve endings in the superficial skin layers, causing pain. By maintaining integrity of the skin, pain, trauma and secondary risk of infection are reduced (Denyer, 2010)</td>
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<td>Reduces or prevents pain</td>
<td>It is gentle, assisting pain reduction in sensitive and fragile skin, such as that of babies and the elderly, or in blistering conditions like epidermolysis bullosa</td>
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<tr>
<td>Gentle/atraumatic removal</td>
<td>Maintaining skin integrity on product removal reduces risk of infection</td>
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<td></td>
<td>Appeel Sterile’s single-use applications can remove adhesive dressings in wounds where cross-infection risk is a concern</td>
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<td></td>
<td>Traditional alcohol-based adhesive removers can sting and dry the skin. Appeel Sterile contains healthcare-grade silicones that do not sting, and dry without leaving any residue</td>
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<td></td>
<td>Prevents skin stripping</td>
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<tr>
<td>Saves nursing time</td>
<td>In a study of 155 patients (CliniMed, 2010), 90% of nurses found it easier to remove dressings when using Appeel Sterile compared to their usual method, while in the case studies featured in this article, clinicians found ease of use saved nurse time through quicker dressing changes</td>
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CASE REPORTS

The cases featured in this article focus on a series of patients with pressure ulcers, all of whom experienced problems related to their wound dressing regimens, including dry and fragile skin, pain, skin stripping, and anxiety around dressing changes. In all of the cases outlined, the use of Appeel Sterile helped to facilitate smoother dressing change, reducing pain and contributing to the patient’s skin integrity.
CASE STUDY 4

This elderly female patient (80+ years) had a chronic wound to her left buttock. Her past medical history included heart failure and poor mobility. At presentation the wound was being treated with Tegaderm™ Foam Adhesive and needed changing seven times a week. The condition of the periwound skin was also poor, being red, fragile and breaking down. She was being given paracetamol at dressing changes to help with the pain, which she rated as 7 on a scale where 10=greatest pain and 0=no pain at all.

To help relieve the patient’s discomfort at the frequent dressing changes, it was decided to use Appeel Sterile Liquid Sachet. This had immediate results with the patient now giving the pain she felt at dressing removal a score of 2 (on the same scale as above). The same wound dressing continued to be used, with dressing changes of the same frequency.

However, the periwound skin’s condition improved and the patient generally felt happier and less anxious about dressing-related procedures with Appeel Sterile making them far more comfortable. The clinician also stated that dressing changes in previously friable skin were easier after introducing the medical adhesive remover into the treatment regimen, as this not only ensured pain-free dressing removal for the patient, but also prevented any further damage to the surrounding skin which was no longer macerated or at risk of skin stripping.

CONCLUSION

Appeel Sterile is a valid option for community nurses concerned about the periwound skin of patients, with benefits highlighted by the featured case studies, including ease of adhesive removal in a range of wounds, reduced pain and trauma to the skin, and reduced dressing changes.

The different applications of Appeel Sterile such as Spray and Liquid Sachet also facilitate ease of use by community nurses. The case studies featured here demonstrate how the use of Appeel Sterile Spray has overall benefits in practice for both nurses and patients, improving the patients’ quality of life, and saving time for busy community nurses.

The views expressed are those of the authors and do not necessarily reflect the view of CliniMed Ltd. Consent has been received for use of all clinical pictures and names have been removed to preserve anonymity.

REFERENCES


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