Treating skin tears with a new antimicrobial foam dressing

As people grow older they become more susceptible to falls and injury. In fact, falls affect one-third of people aged 65 years and above, rising to 40% of those aged 80 and above (Department for Work and Pensions, 2011).

BACKGROUND

There are multiple factors that increase a person's risk of falling, including:

- Impaired cognition or depression
- Weakness/frailty
- Impaired vision
- Balance, gait or mobility problems, including those due to degenerative joint disease and motor disorders such as stroke and Parkinson's disease
- Side-effects from taking multiple medications (particularly for high blood pressure)
- Postural hypotension (Department of Health [DH], 2007).

Combined with this increased risk of falling is the increased risk of damage to the skin and the risk of skin tears. As the skin ages it becomes much more fragile and dry and more susceptible to tearing as a result of friction, shearing or trauma.

THE SKIN

The skin is made up of the epidermis, dermis and hypodermis. All of these layers change with age, losing thickness, elasticity and strength, and reducing the skin's protective function (Stephen-Haynes and Carville, 2011).

A skin tear is a traumatic wound where there is a separation of the layers of the skin (*Figures 1–3*) (Fleck, 2007). The epidermis and dermis are attached at the dermo-epidermal junction by ridges that knit the two layers together. This area flattens with age and the connection becomes less stable. The two layers, which once moved together as one (Fleck, 2007), become much more prone to separation during trauma, leading to partial-thickness wounds where the epidermis separates from the dermis, or more severe full-thickness wounds where both the upper layers separate from the underlying structures (Payne and Martin, 1993).

Skin tears in older people can be complex, particularly if the wound becomes infected or if the person has co-morbidities, which can delay healing. It is important that they are treated effectively to avoid complications.

SKIN TEARS

Skin tears are defined as traumatic wounds that often result from external friction and/or shearing forces that separate the epidermis from the dermis (partial thickness) or separate both the epidermis and dermis from the underlying structures (full thickness).

Payne and Martin (1993) have classified skin tears for consistent identification as:

- Category I: skin tear without tissue loss
- Category II: skin tear with partial tissue loss
- Category III: skin tear with complete tissue loss.

They also emphasis the skin at risk, which is intact but vulnerable and which is to monitored and protected where appropriate.

KENDALL™ AMD ANTIMICROBIAL FOAM DRESSING

Kendall™ AMD antimicrobial foam dressing (Covidien) is an open-cell polyurethane foam dressing. It is impregnated with 0.5% polyhexamethylene biguanide (PHMB) — an antiseptic which is effective against gram positive and gram

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References

DH (2007) *National Service Framework for Older People*. DH, London

Department of Work and Pensions (2011) *A-Z of Medical Conditions: falls*. Available at: http://dwp.gov.uk/publications/specialist-guides/medical-conditions/a-z-of-medical-conditions/falls (Accessed 5 January, 2012)

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Figure 1: Traumatic category III skin tear to healed left radial surgical site following fall onto chair arm (Payne and Martin, 1993).

Figure 2: Category II traumatic skin tear to right inner tibial region following fall from a wheelchair (Payne and Martin, 1993).

Figure 3: Category 1 superficial skin tear following sporting injury (Payne and Martin, 1993).

negative bacteria (including Methicillin-resistant *Staphylococcus aureus* [MRSA], vancomycin-resistant *enterococci* [VRE] and Pseudomonas), fungi and yeast.

PHMB kills bacteria by binding to the outer membrane of the bacteria's cell wall causing cytoplasm to leak out and the cell to collapse and die. PHMB is a safe, stable chemical and is commonly used in products such as baby wipes, contact lens solutions and pool cleaners. It also has the benefit of having no known resistance and a very low toxicity.

Kendall AMD antimicrobial foam dressing provides a moist and bactericidal healing environment. It absorbs fluid, blood, exudate and bacteria and draws them away from the wound. The dressing has a vertical wicking action — this moves fluid into the dense foam core, which retains the exudate. The PHMB binds to the foam material and kills the bacteria. The PHMB protects against bacterial colonisation within the dressing and limits cross-contamination and it has been found to be effective against repeated contamination for up to seven days.

Kendall AMD antimicrobial foam dressing is indicated for use in management of post-surgical incisions, pressure ulcers, venous ulcers, diabetic ulcers, donor sites, abrasions, lacerations, first and second-degree burns, other trauma wounds and, as a secondary dressing for packed wounds. It is an ideal dressing in the local management of exudate, which may occur at surgically induced body exit sites. It is also suitable for the treatment of skin tears in older people.

TREATING SKIN TEARS IN OLDER PEOPLE

The following case reports detail the use of Kendall AMD antimicrobial foam dressing to manage skin tears in older people at South Tees Hospitals NHS Foundation Trust.

Case report 1

Background

The patient was an 81-year-old woman who had fallen and hurt her left hand on a table top, seven days previously. She had a history of ischaemic heart disease and had experienced a myocardial infarction in the past.

The malnutrition universal screening tool (MUST) used at the trust (www.bapen.org/uk/pdfs/must)showed that the patient was at high risk of malnutrition and needed to be seen by a dietician.

The de-roofed category III skin tear on her palm (Payne and Martin, 1993) was causing considerable pain and measured 6/10 rising to 8/10 on The McGill Pain Questionaire during dressing changes (Melzack, 1975).

At initial presentation the wound measured 2.8 x 3 x 0.2cm. It was sloughy, with some granulation and had a high level of exudate, needing daily changes of Paranet® gauze dressing (Synergy Health). The wound was noted to be critically colonised rather than infected, and the surrounding skin was macerated, fragile and inflamed. It was decided to treat the wound with Kendall AMD antimicrobial foam dressing covered with Tubigrip® (Mölnlycke), to be changed every 2–3 days.

References

Fleck C (2007) FAQs: Preventing and treating skin tears. *Adv Skin Wound Care* 20(6): 315–21

Melzack R (1975) The McGill Pain Questionaire: major properties and scoring methods. *Pain* 1: 277–99

Results

At the first dressing change, three days after the foam dressing was applied, the wound was no longer sloughy and exhibited moderate exudate. The surrounding skin was no longer macerated and the patient reported less pain (7/10 at dressing change and 3/10 continuous pain). The wound had slightly decreased in length.

After one week of treatment the patient no longer had any pain even during dressing changes, exudate was low and the surrounding skin was no longer inflamed or macerated. Epithelialisation had begun and the size of the wound had reduced to 2.5 x 2.8 x 0.1cm. The wound continued to reduce in size and after four weeks of treatment it measured 1 x 1 x 0.1cm.

Conclusion

The AMD foam dressing was reported to be easy to cut and to fit to the patient's palm and it remained in place underneath the Tubigrip. The practitioner reported no leakage or odour and said that there was less need to change the dressing due to its absorbency. The patient was pleased with the change in dressing regimen, reporting that it was easier to move her hand using the foam dressing. She also reported a reduction in pain during dressing changes.

Case report 2

Background

The patient was a 76-year-old man who had fallen while at home. He presented to the clinic seven days later with a category III de-roofed skin tear (Payne and Martin, 1993) on his right elbow. He was in considerable pain, rating it 9/10 when moving. He had a history of chronic obstructive pulmonary disease (COPD) and had been treated with chemotherapy for cancer of the bladder. He was cachectic and at high risk of malnutrition measured on the MUST scale.

The wound measured 3 x 3 x 0.5cm and had been dressed with Jelonet® (Smith & Nephew), gauze and a crepe bandage, which had been changed daily. The wound was necrotic and sloughy and showed signs of infection with medium levels of exudate. The surrounding skin was macerated, inflamed and dry.

Results

The necrotic tissue was debrided and it was decided to change the regimen to Kendall AMD antimicrobial foam dressing covered with a crepe bandage (as this was preferred by the patient).

After seven days the wound was still infected and the exudate levels had increased, but the pain at dressing changes had reduced considerably to 5/10 and the wound size had also reduced to 2.8 x 2.7 x 0.4cm.

The surrounding skin was still macerated and inflamed. By the third visit, two weeks after commencing the foam dressing, the wound was no longer infected and the exudate levels had returned to medium. The wound was still sloughy but also showed signs of granulation. The surrounding skin was now fragile but was not macerated or inflamed. The patient now reported that the wound was causing him no pain, even at the dressing change. The wound continued to improve and reduce in size. After 35 days of treatment the wound measured 1.5 x 1 x 0.1cm and the patient was discharged.

Conclusion

The nurse found the Kendall AMD antimicrobial foam dressing was less time-consuming to apply than the previous regimen and it stayed in situ over the patient's elbow. It was reported that the dressing needed to be changed less often during a seven-day period. There was no leakage and the foam absorbed lots of fluid. The patient had no problems with the dressing and could move with it in place. The patient's pain levels were swiftly reduced using this treatment regimen.

Case report 3

Background

The patient, a 72-year-old woman, had a fall at night while on a hospital ward. Her wound was assessed six hours later and presented as a blistered category I skin tear on her right knee (Payne and Martin, 1993) with an intact roof. The wound measured 6 x 2.8 x 0.4cm and was causing the patient a low level of pain, which she rated as 4/10 during the dressing application. The surrounding skin was macerated, fragile and inflamed. There was a high level of exudate and the wound was sloughy. The woman was cachectic and had a history of COPD.

Results

The wound was cleaned using saline irrigation and then Kendall AMD

References

Payne RL, Martin ML (1993) Defining and classifying skin tears: need for a common language. *Ostomy Wound Manage* 39(5): 16–20

antimicrobial foam dressing was applied, covered by a crepe bandage. The dressing was changed every two days. After two days the patient reported no pain during dressing change, the wound had slightly reduced in size and the exudate levels had reduced to medium.

By the third dressing change, epithelialisation had begun and the exudate levels were described as low. The depth of wound was especially reduced and the wound measured 5.7 x 2.6 x 0.1cm. After six days of treatment the patient was transferred to another hospital with the wound measuring 5.7 x 2.5 x 0.1cm.

Conclusion

The Kendall AMD antimicrobial foam dressing appears to have been a suitable dressing for this wound. The patient reported liking the feel of the dressing as it was soft on her skin. She also commented that it did not hurt when it was removed. The nurse noted that it did not stick to the patient's wet wound.

Case report 4

Background

The patient was a 71-year-old man with a history of type 2 diabetes which was stable, he was also at high risk of malnutrition according to the MUST scale. He had fallen on the stairs in his home one week earlier and presented with a de-roofed category III skin tear (Payne and Martin, 1993) to his left shin.

The wound measured 7.2 x 3.5 x 0.3cm. It was necrotic and sloughy and had a high level of exudate. The surrounding skin was inflamed, macerated and blistered. The patient reported a continuous pain level of 3/10 which increased to 8/10 during dressing changes.

The wound had been treated with Mepitel® Safetac (Mölnlycke Health Care) and covered with Allevyn® Foam Adhesive (Smith & Nephew). The wound had been changed daily and cleansed with saline. It was decided to change the regimen to Kendall AMD antimicrobial foam dressing covered with a crepe bandage changed every three days.

Results

At the second dressing change the patient's reported pain levels decreased to 5/10. The wound no longer exhibited necrotic tissue and was sloughy with medium levels of exudate. The surrounding skin remained inflamed and fragile. The wound size had decreased slightly to 7 x 3.4 x 0.3cm.

At the next dressing change three days later the wound showed signs of granulation and there was no reported pain. The wound had decreased in size to 6.8 x 3x 0.1cm. At the final dressing change 12 days after switching to Kendall AMD antimicrobial foam dressing, epithelialisation had begun, exudate levels were low and the wound measured 6.5 x 3 x 0cm. Treatment was continued in primary care.

Conclusion

The patient had been worried by his wound and thought that the black necrotic tissue would spread to affect his whole leg. He was pleased with the dressing and reported that it did not hurt when applied or removed.

The nurse reported that the dressing was a good alternative to the silver or honey dressings that had were often used for similar wounds.

CONCLUSION

Skin tears are a common problem in older people because of the increasing fragility of the skin and the increased risk of falls.

These four cases show that Kendall AMD antimicrobial foam dressing can be an effective dressing to use with skin tears. It is easy to apply to awkward areas and it has an effective anti-bacterial action.

The patients it was used on reported that it was comfortable and in all cases pain scores decreased with its use, suggesting that it is easy to apply and remove. The deep foam layer is able to absorb high levels of exudate and its use resulted in a need for less frequent dressing changes.

The PHMB within the dressing kills bacteria and allows the wound to have an optimal moist healing environment (without the risk of cross-contamination for up to seven days).

Skin tear injuries in older people can result in complications and it is important to treat the wounds with an appropriate dressing, such as Kendall AMD antimicrobial foam. WUK

KEY POINTS

- Skin tears are common in older people because of the increasing fragility of the skin and the increased risk of falls.
- This new antimicrobial foam dressing is easy to apply to awkward areas.
- It also has an antibacterial action.
- The PHMB in the dressing kills bacteria and allows the wound to have an optimal moist healing environment.
- Skin tear injuries in older people can result in complications and it is important to treat the wounds with an appropriate dressing.

References

Stephen-Haynes J, Carville K (2011) *Skin Tears Made Easy*. Available at: http://www.woundsinternational.com/made-easys/skin-tears-made-easy (accessed 1 February, 2011)