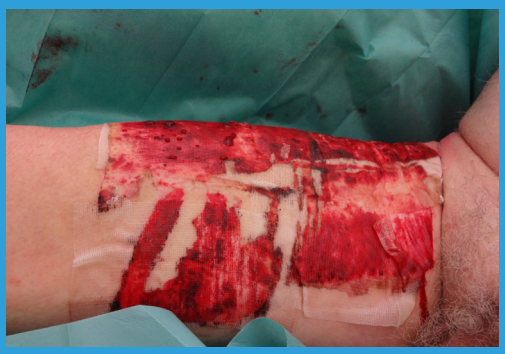
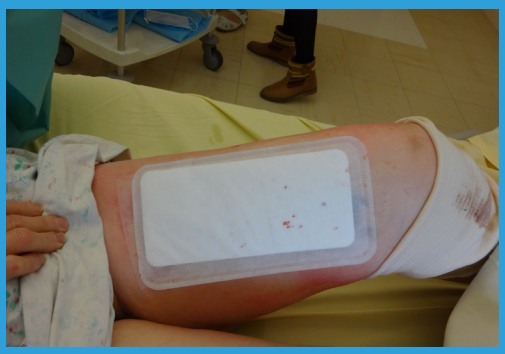
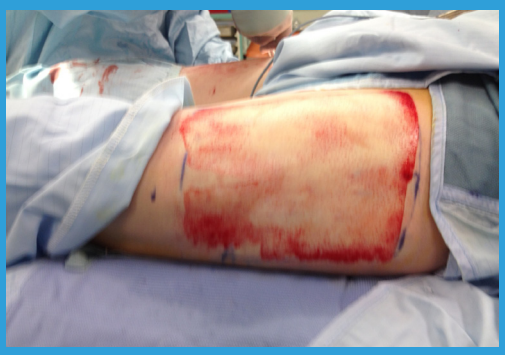
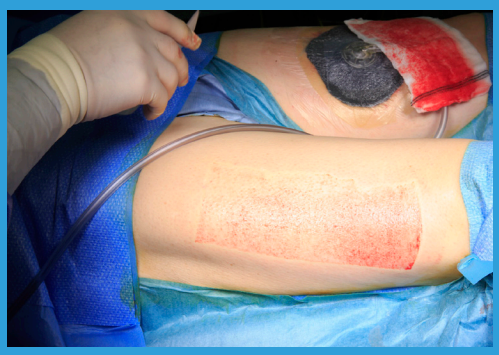
INTERNATIONAL
CASE STUDIES

Case series evaluation:
ADAPTIC TOUCH® in partial-thickness skin graft donor-site wounds

CASE STUDIES SERIES 2014

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Using ADAPTIC TOUCH® in partial-thickness skin graft donor-site wounds

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INTRODUCTION

A skin graft is a section of epidermis and dermis that has been completely separated from its blood supply in one part of the body — the donor site — before being transplanted to the recipient site[1]. These grafts can be full (epidermis plus full thickness of the dermis) or partial (epidermis plus partial thickness of the dermis) thickness. Larger expanses of skin tend to be harvested for partial-thickness donor-site wounds (DSWs).

Although the resulting wound can be considered 'standard'[2] and will generally heal in less than 4 weeks[3], the resulting wound often causes patients pain and discomfort[2]. In addition, patients may be concerned about having a second wound with scar formation[4]. In fact, delayed wound healing in the partial-thickness DSW may 'cause the patient more inconvenience than the skin graft or the condition for which the grafting was indicated'[5].

DRESSING CHOICE IN PARTIAL-THICKNESS SKIN GRAFT DONOR SITES

As a result, patient comfort and reliable, repeatable healing are keys to good outcomes in DSWs. However, "clinical practice shows a large number of dressings and topical agents for DSWs, while the optimum dressing choice for local wound care is unclear"[2]. Practice is therefore highly variable[6–8].

Clinicians must aim to balance patient comfort and efficacious wound-healing in patients with DSWs. After a thorough, holistic assessment of the patient, the clinician should choose the most appropriate primary wound dressing (Box 1). Further dressings should be used to manage exudate levels and to provide compression (e.g. hosiery, bandaging) as necessary, and should be changed or reinforced as needed[9].

ADAPTIC TOUCH® (Systagenix, an Acelity company) (Box 2, p2) is a non-adherent, flexible, open-mesh primary wound contact layer composed of cellulose acetate coated with a soft-tack silicone to assist dressing application[10]. The dressings may be used in the treatment of wounds healing by secondary intention, including dry to heavily exuding, partial- and full-thickness wounds.

Adherence of dressing materials to the skin can disrupt the formation of new cells and cause distress to patients, leading to stripping of the epidermal layer[11]. Non-adherent dressings are gentle on the skin. Silicone is chemically inert[12], meaning that ADAPTIC TOUCH is suitable for use in DSWs.

When applied as a primary contact layer, the dressing conforms to the wound and lets exudate pass freely through its advanced mesh design into a secondary dressing[13]. This mesh design

Box 1. Properties of an ideal primary dressing for partial-thickness skin graft donor sites

- Can remain intact and in place until the dressing can be removed without trauma
- Stays in place
- Does not adhere
- Can be used under an appropriate secondary dressing, to facilitate exudate management
- Easy to use and apply
- Minimises patient discomfort

Box 2. Evidence for ADAPTIC TOUCH®

ADAPTIC TOUCH® has been evaluated in a number of *in vivo* and *in vitro* studies and has been shown to:

- Retain its position on the wound bed when the secondary dressing is removed [10,14]
- Have sufficient tack for the dressing to remain in place during application, while still allowing atraumatic removal[14,15]
- Allow free passage of exudate through the mesh to the secondary dressing, thus minimising tissue maceration[13]
- Be easy to handle and apply[16]

minimises the risk of exudate pooling and helps reduce the likelihood of tissue maceration, while ensuring a reduced risk of secondary dressing adherence to the wound.

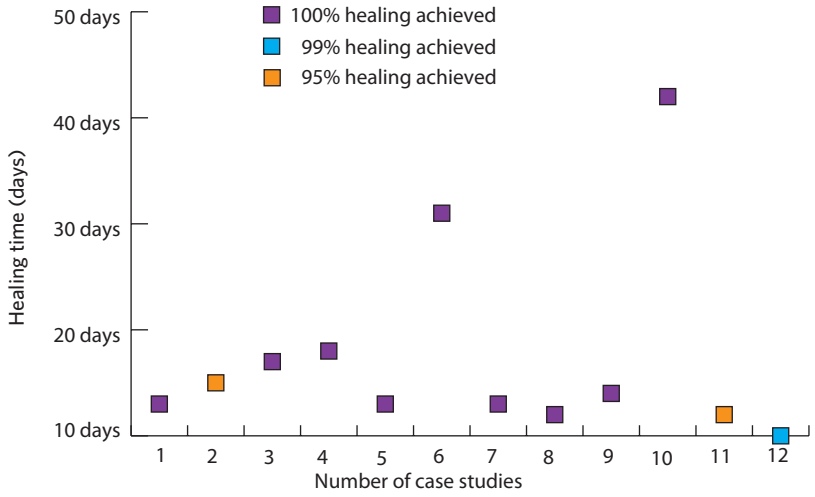
These features let the clinician minimise the number of dressing changes. The slightly 'tacky' nature of the silicone may help maintain dressing position where it is in contact with dry, intact skin, letting it stay in place well during this healing period. Finally, because of its non-adherence, ADAPTIC TOUCH offers atraumatic dressing removal at the end of treatment or when dressing change is required.

ADAPTIC TOUCH IN PRACTICE

In 2013, Andreas Bruhin pioneered a novel approach to managing skin graft DSWs using ADAPTIC TOUCH in two patients[16]. In these original DSW case studies, ADAPTIC TOUCH was chosen for its non-adherent properties, to encourage epithelialisation without the need to disturb the wound bed. And, in both cases, ADAPTIC TOUCH proved an effective wound contact layer, and the wounds progressed towards healing over 14–16 days with only one application.

Twelve more international case studies have been undertaken, this time with the goal of testing the novel approach to DSW management using ADAPTIC TOUCH. The rationale for using ADAPTIC TOUCH was the same, and the results were similarly positive (Figure 1). Nine of 12

Figure 1: Time to heal in 12 case studies of partial-thickness skin graft donor-site wounds.

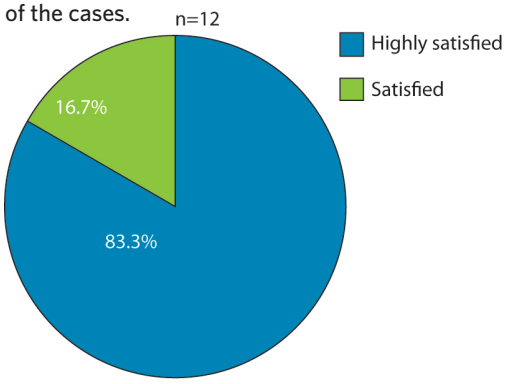


wounds healed completely; one reached 99% by 10 days; and a further two wounds were 95% healed at 12 and 15 days. The longest time to 100% healing was 42 days and the shortest was 12 days. In seven of the 12 cases, BIOSORB™ was used as a secondary dressing for absorption of exudate, so that ADAPTIC TOUCH could be left in place for as long as possible. In six of those seven cases, the clinician reported being satisfied with the performance and use of BIOSORB, although issues were reported with dressing stiffness; in the one instance where the clinician reported being not satisfied with the dressing, it was noted that BIOSORB managed exudate well.

In addition, patient comfort, which is critical to a positive patient experience in skin-grafting procedures, also scored well. In six of the 12 cases, patients experienced no dressing change-related pain throughout the case study experience. And three patients only experienced pain — of 1.5 or 2 — at dressing removal, with no other dressing change-related pain with the regimen.

Five of the 12 case studies are detailed on the following pages. By following practical tips for using ADAPTIC TOUCH (Box 3), the clinicians were able to enact a straightforward, easy-to-replicate procedure that resulted in efficacious, uncomplicated healing that was 'highly satisfactory' in the vast majority of cases (Figure 2). Furthermore, the outcomes have been shown to be consistently repeatable, demonstrating that using a protocol based on ADAPTIC TOUCH for split-thickness DSWs could eliminate variability in this area of practice while minimising patient discomfort during dressing wear and upon dressing removal.

Figure 2: Clinician ratings of performance of ADAPTIC TOUCH® for management of partial-thickness skin graft donor-site wounds. Note: The other performance-ratings were 'neutral' and 'dissatisfied', but these options were not selected in any of the cases.



Box 3. Tips for using ADAPTIC TOUCH®

- Select a size of ADAPTIC TOUCH® that is larger than the wound to ensure the dressing can be applied to intact skin surrounding the wound margins
- If more than one piece of ADAPTIC TOUCH is required, ensure dressings overlap, to avoid secondary dressing adherence to the wound. Overlap should be minimised to prevent occlusion of holes
- Before application, prepare the wound bed according to appropriate wound care protocols
- If need be, cut the dressing to size using sterile scissors before removing the release papers
- Place gently on wound bed
- Cover the dressing with an appropriate secondary dressing according to the wound type, wound position, exudate level and condition of surrounding skin
- Determine dressing change according to exudate levels, and condition of the wound and surrounding skin
- ADAPTIC TOUCH can be left in place for several days, while the secondary dressing can be changed more frequently as required
- If the primary dressing appears dry at dressing change, wet with sterile saline before removing

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CASE 1: LARGE DONOR WOUND IN PATIENT WITH ARTERIAL HYPERTENSION

INTRODUCTION

Mr NG is a 71-year-old male who presented with a partial-thickness burn. He had arterial hypertension, which was being treated with lercanidipine 20mg daily. The burn had been previously treated with silver sulfadiazine.

TREATMENT

Skin was harvested from the thigh using a pneumatic dermatome under general anaesthesia. The donor-site epidermis was healthy and the resulting 27cm x 16cm wound was cleansed in theatre using chlorhexidine. ADAPTIC TOUCH® (Systagenix, an Acelity company) was applied as a primary wound contact layer, with BIOSORB™ (Systagenix, an Acelity company) placed over it to provide a super-absorbent secondary dressing. A gauze bandage was used to secure the dressings, and dressing changes were scheduled for every 2 to 3 days, depending on exudate levels.

Day 3: Three days after the grafting, BIOSORB was demonstrating good absorption. The patient rated wound-associated pain as a 2 of 10 on the visual analogue scale (VAS) and as a 5 when ADAPTIC TOUCH was changed. ADAPTIC TOUCH was completely free from the wound, without any adhesion. The donor wound site was healthy with some bleeding, free from infection, with no inflammation. Due to the wound's progress, the decision was made to continue with the dressing regimen, unchanged.

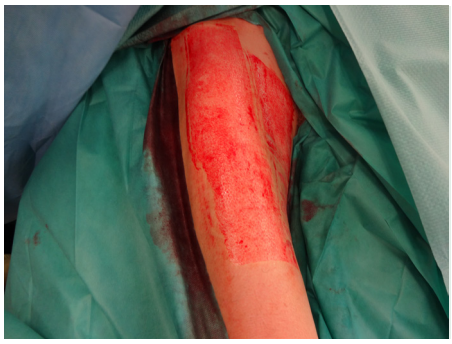


Figure 1: Baseline

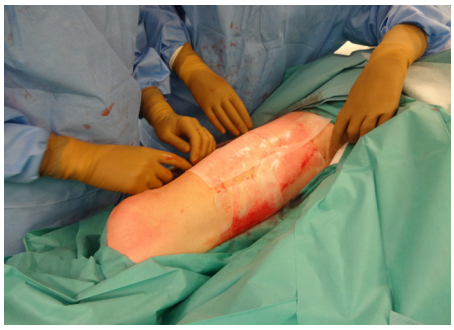


Figure 2: Baseline, with ADAPTIC TOUCH® in place

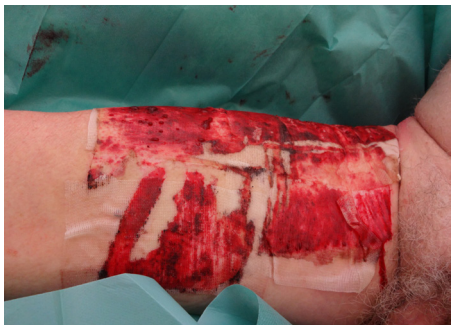


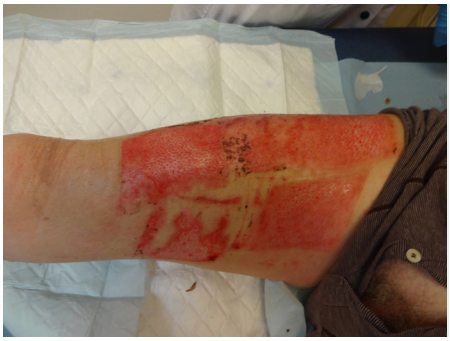
Figure 3: Day 3

Day 6: Six days post-op, there was no strikethrough on the BIOSORB, but there was some difficulty changing the dressing due to its rigidity. ADAPTIC TOUCH did not need to be changed, and the wound tissue underneath looked healthy. The contact layer was left in place, BIOSORB was changed, and the next dressing change was scheduled for 1 week.

Day 13: After nearly 2 weeks, the wound had completely healed, and the patient had no wound-related pain. BIOSORB lifted easily, ADAPTIC TOUCH was removed with no pain. The grafting site and surrounding skin looked healthy.

DISCUSSION

The patient and carer alike expressed a high level of satisfaction with the performance of ADAPTIC TOUCH. The dressing was easy to remove and apply, and stayed in place using the dressing regimen. Pain was minimised for the patient through to healing, which occurred in less than 2 weeks; the dressing did not adhere or cause pain on removal.



Figures 4a–b: Day 6, without and with ADAPTIC TOUCH in place

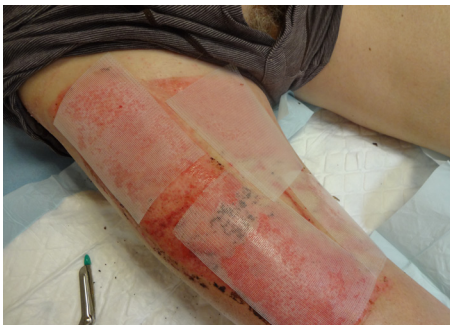


Figure 4b

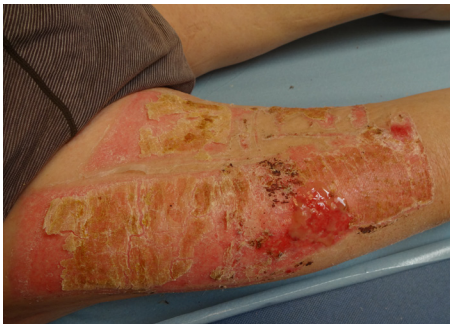


Figure 5: Day 13

CASE 2: DONOR WOUND IN PATIENT TAKING ANTICOAGULANTS

INTRODUCTION

Ms GT is a 47-year-old female with paraplegia who was on tropatépine and zolpidem and anticoagulation therapy due to her limited mobility. She presented with a partial-thickness water-scald burn. The wound had previously been treated with a paraffin gauze dressing.

TREATMENT

Skin was harvested from the donor site using a pneumatic dermatome under general anaesthesia. The donor-site epidermis was healthy. The resulting 8cm x 5cm wound was cleansed in theatre using chlorhexidine, and ADAPTIC TOUCH® (Systagenix, an Acelity company) was applied as a primary wound contact layer to let the site heal, with BIOSORB™ (Systagenix, an Acelity company) to provide a super-absorbent secondary dressing. A gauze bandage was used to secure the dressings. ADAPTIC TOUCH was scheduled for change 4 days later, and BIOSORB as needed due to exudate levels.

Day 4: BIOSORB was changed once between reviews and lifted away easily both times. The dressing had reached absorbent capacity, possibly due to anticoagulant therapy. The patient rated wound-related pain as 1 out of 10 on the visual analogue scale (VAS), and as a 1 when ADAPTIC TOUCH was changed. The dressing did not adhere to the wound, which appeared healthy, with no inflammation or bleeding. The dressing regimen was continued unchanged, with dressing change scheduled for 11 days later to allow healing to occur.

Day 15: BIOSORB needed to be changed only two times during this period. It managed exudate well, but was stiff and did not lift away easily. Wound-related pain and dressing-change pain were both rated 1 on the VAS. ADAPTIC TOUCH did not adhere on removal, which revealed over 45% healing of the wound. Because the wound had made adequate healing progress, the dressing regimen was discontinued, and simple dressings were used going forward.

DISCUSSION

The performance and speed of healing with this treatment combination was highly satisfactory. The dressing was easy to remove and apply, stayed in place, and did not cause pain for the patient during wear or on removal.

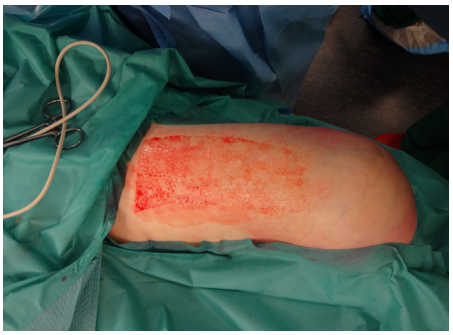
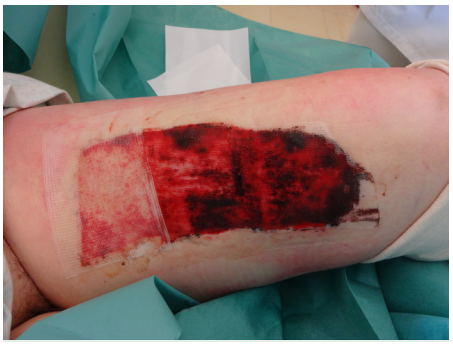


Figure 1: Baseline



Figures 2a–b: Day 4, without and with ADAPTIC TOUCH® in place

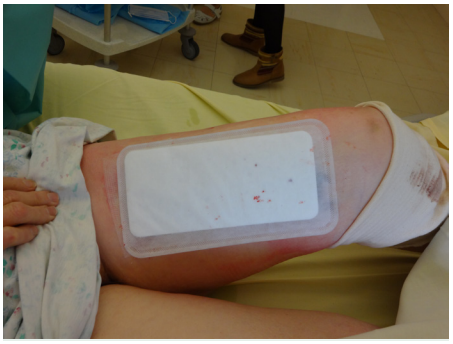


Figure 2b

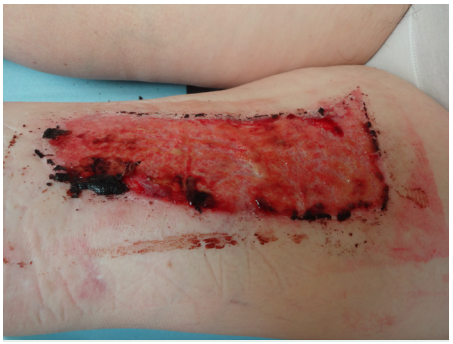


Figure 3: Day 15

CASE 3: LARGE DONOR-SITE WOUND IN PATIENT WITH HYPOTHYROIDISM

INTRODUCTION

Mr DB is a 42-year-old male who presented with a full-thickness burn in need of grafting. He had hypothyroidism, for which he was on levothyroxine, and issues with alcohol consumption. The burn had previously been treated with a paraffin gauze dressing.

TREATMENT

An 18cm x 17cm area of skin was harvested from the donor thigh using a pneumatic dermatome. The donor-site epidermis was in good condition. The wound was cleansed in theatre using an antiseptic solution, the skin graft was performed, and ADAPTIC TOUCH® (Systagenix, an Acelity company) was applied as a primary wound contact layer to allow no-touch healing with BIOSORB™ (Systagenix, an Acelity company) as a secondary dressing for its absorbent abilities. The dressings were secured with gauze and crepe, and dressing change was scheduled as often as management of exudate required.

Day 11: At the first review, BIOSORB was found to have effectively managed exudate, and was easy to lift, although there was slight slippage, probably due to the minimally adherent nature of the dressing. ADAPTIC TOUCH did not need to be changed at this time. The wound can be visualised through the dressing, and large areas of re-epithelialisation were present. Although there were still low levels of exudate and slight inflammation present, the wound was free of signs of infection and appeared generally healthy. New BIOSORB was applied, and the next dressing review was scheduled for 3 days later.

Day 14: After 2 weeks, the BIOSORB dressing had been changed 5 times. It was still satisfactorily managing exudate and was easy to separate from the primary dressing. ADAPTIC TOUCH was changed for the first time — there was slight bleeding from four small areas, due to scabbing, all less than 1cm^2; the dressing was otherwise easy to remove. The wound was healthy and not fragile, with low exudate levels and no signs of infection. Because the wound had adequately healed, the decision was made to discontinue the dressing regimen.

DISCUSSION

When the patient returned for a follow-up appointment 1 week after discontinuation of ADAPTIC TOUCH, the wound had healed fully and there was no further exudate. The clinician was satisfied with the performance and ease of use of both dressings, as well as the speed with which the wound healed.

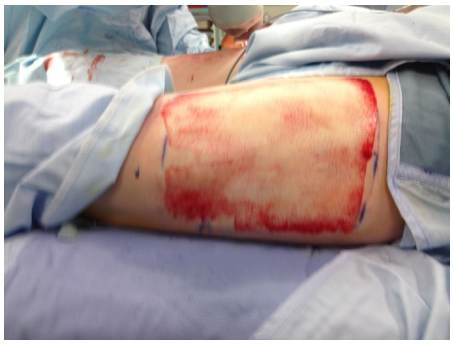


Figure 1: Baseline

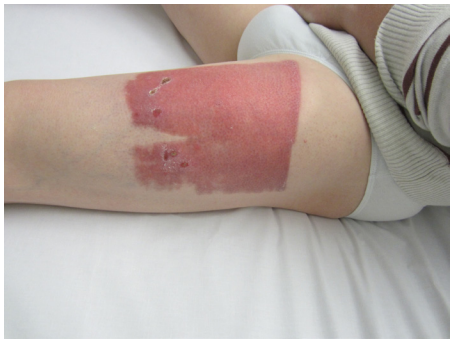


Figure 2a–b: Day 14

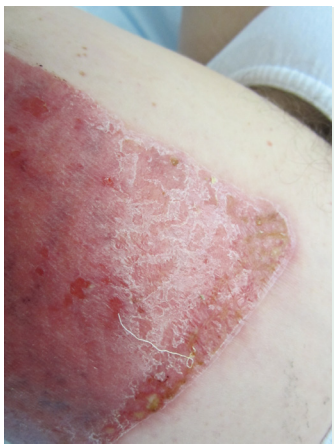


Figure 2b

CASE 4: DONOR SITE GRAFT AFTER SHEARING INJURY

INTRODUCTION

Mr SA is a 67-year-old male who experienced a shearing injury of the upper leg by a machine at his workplace. The wound extended vertically along the left femoral area. After necrosis in the wound was debrided using negative pressure wound therapy, it was decided to proceed with a skin graft to bring the wound to healing.

TREATMENT

A 12cm x 5cm area of skin was harvested from the right thigh using a 0.12mm thickness dermatome. The donor site was cleansed in theatre with an antiseptic solution, and covered with ADAPTIC TOUCH® (Systagenix, an Acelity company) as a primary wound contact layer, then gauze moistened with saline as a wet-to-dry dressing, and BIOSORB™ (Systagenix, an Acelity company) for absorbency abilities. BIOSORB scheduled for change every 48 hours and ADAPTIC TOUCH every 4 days.

Day 1: At the first review, BIOSORB was found to have effectively managed exudate. It was easy to lift away from the wound area. ADAPTIC TOUCH did not need to be changed at this time. Wound-associated pain was rated 1 of 10 on the visual analogue scale (VAS), and the removal and reapplication of BIOSORB caused the patient no pain. Periwound skin was not inflamed and showed no signs of infection. The decision was to continue with the dressing regimen, with change scheduled for 2 days later.

Days 3–5: BIOSORB was still satisfactorily managing exudate and was easy to separate from the moist gauze and ADAPTIC TOUCH (which did not need to be changed). The patient had no pain. The dressing regimen was continued for 2 to 3 more days, depending on exudate levels. BIOSORB was changed on day 5, but ADAPTIC TOUCH still did not need to be changed. The patient was discharged from hospital, with dressing reviews scheduled weekly.

Day 42: On weekly review, the patient was progressing as expected, with no indicents, so the dressings were left in place. Six weeks after the grafting had been performed, the BIOSORB and ADAPTIC TOUCH were removed. The patient reported pain as 1 on the VAS. BIOSORB lifted away easily, and ADAPTIC TOUCH was easily removed by making the wound surface wet. The donor site had healed completely.

DISCUSSION

Both ADAPTIC TOUCH and BIOSORB were found to be conformable and easy to use. Both patient and clinician were 'highly satisfied' with dressing performance and effectiveness, and the patient was highly satisfied with the comfort and lack of pain.

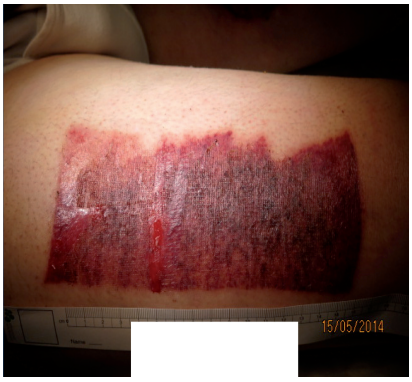


Figure 1: Baseline

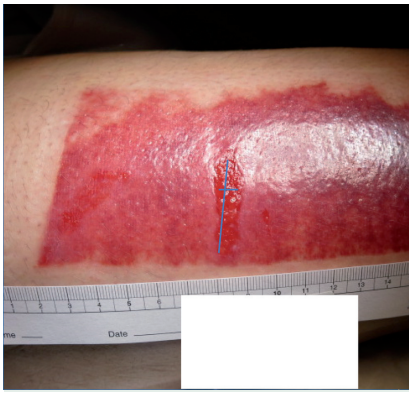


Figure 2: At first weekly review

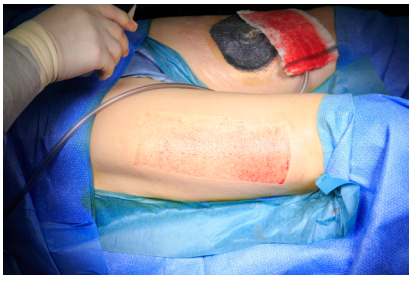


Figure 3: Day 42

CASE 5: NINETY-FIVE PERCENT HEALING IN 12 DAYS OF LARGE GRAFT SITE

INTRODUCTION

Mr JE is a 20-year-old male who presented with deep dermal burns after ignition of petrol on a rubbish fire. For the burn-associated pain, he was taking 1g paracetemol 4 times daily, 400mg ibuprofen 3 times daily and 30–60mg codeine 4 times daily. The burn had previously been treated with a paraffin gauze dressing and daily showers for 8 days. He had no comorbid conditions.

TREATMENT

After infiltration with 1x106 adrenaline/saline and chlorhexidine skin prep, 25cm x 25cm area of skin was harvested from the anterior portion of the donor thigh using an air dermatome. The donor-site epidermis was in good condition. The skin graft was performed, and ADAPTIC TOUCH® (Systagenix, an Acelity company) was applied as a primary wound contact layer, with BIOSORB™ (Systagenix, an Acelity company) as a secondary dressing. Change of the wound contact layer was scheduled for 2 weeks later.

Day 3: At the first review, BIOSORB was found to have acceptably managed exudate. It was easy to lift away and both patient and carer were satisfied with the dressing performance. ADAPTIC TOUCH did not need to be changed at this time. The skin surrounding the dressing appeared healthy, and the decision was made to continue with the dressing regimen. The next dressing change was scheduled as indicated by strikethrough on the BIOSORB dressing.

Day 12: Between reviews, the BIOSORB dressing had been changed once. The clinician found that it had managed low exudate levels well, and was easy to remove. ADAPTIC TOUCH was easily removed, with no adherence, and both wound- and dressing-related pain were rated as 1.5 out of 10 on the visual analogue scale. The wound site was 95% healed, with healthy periwound skin. As a result, the decision was made to discontinue the dressing regimen and use only simple dressings for the remainder of healing.

DISCUSSION

Both patient and clinician were highly satisfied with the performance, comfort and ease of use of both dressings, and the speed with which the wound healed.

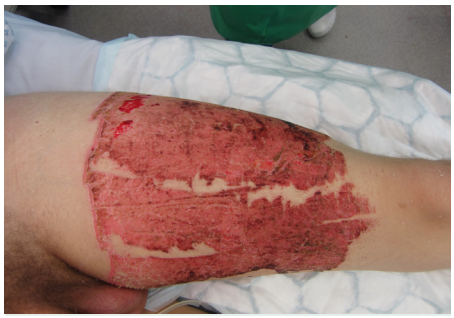


Figure 1: Baseline

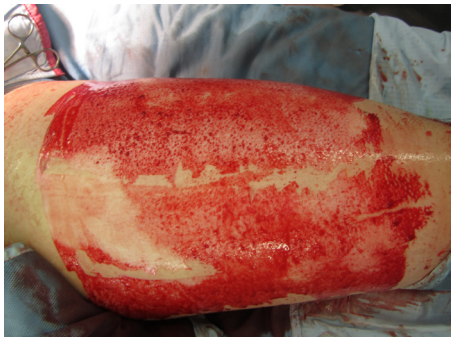


Figure 2: Day 12

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