TIELLE® Non-Adhesive Hydropolymer Dressing in practice

Karl Guttormsen, Paul Chadwick, Samantha Haycocks

The following case studies test a new, low-profile non-adhesive dressing in practice. The dressing is designed to absorb exudate in low to heavily exuding wounds; available in a range of sizes, including a 5 cm x 5 cm size, which was utilised on a range of small diabetic foot wounds. The patients in the three case studies all found the dressing comfortable and were able to manage their own dressing between clinic appointments. In all cases, the wounds were fully healed or healing well by the end of the case studies.

TIELLE® Non-Adhesive Hydropolymer Dressing (Systagenix) is a new, low-profile dressing, designed to absorb exudate in low to heavily exuding wounds. It can be used as both a primary and secondary dressing, and is suitable for use with compression bandaging.

The dressing helps maintain a moist wound healing environment through the combination of absorbency and moisture vapour transfer, and uses LiquaLock® Advanced Absorption Technology, which is specifically designed to retain fluid under compression bandaging, thus reducing the risk of maceration.

The dressing is composed of three layers (*Figure 1*):

- The LiquaLock wound contact layer locks fluid away to reduce the risk of maceration and leakage
- A superabsorbent layer enhances fluid handling capacity
- A highly breathable polyurethane film backing prevents bacterial ingress

The dressing is available in a range of sizes. The 5cm x 5cm size, which was used in the following case studies, is ideal for small wounds; the lack of bulk allows the dressing to be easily accommodated within the appropriate pressure-relieving devices. The dressing is also cuttable, so can be easily adapted and cut to shape. The dressing can be secured using the most appropriate method for the individual patient (e.g. compression bandaging).

The conformability and non-adherent properties of the dressing mean that it was well tolerated by the patients in the following case studies using TIELLE Non-Adhesive on diabetic foot wounds. The patients also found application and removal simple to manage, which facilitated self-care between clinic appointments.

Evidence for TIELLE Non-Adhesive

In vitro tests have found that TIELLE Non-Adhesive provided the longest wear time (7 days) compared to other foam dressings (Stephens et al, 2015). The dressing successfully managed fluid at both high and low flow rates for the full 7 days without leakage. The dressing also managed fluid under 40 mmHg compression hosiery for

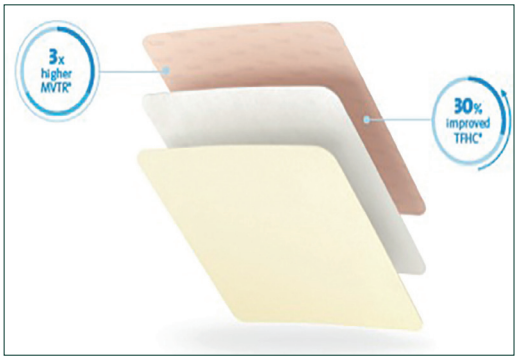

Figure 1. Composition of TIELLE dressing

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Article points

1. A new dressing is available for use on diabetic foot wounds.
2. Patients found the non-adhesive dressing comfortable and easy to manage themselves between clinic appointments.
3. The dressing, designed to have a longer wear time, may mean fewer dressing changes and greater cost effectiveness.

Key words

- Dressing
- Case studies
- Diabetic foot wounds

Declaration: Supported by Systagenix

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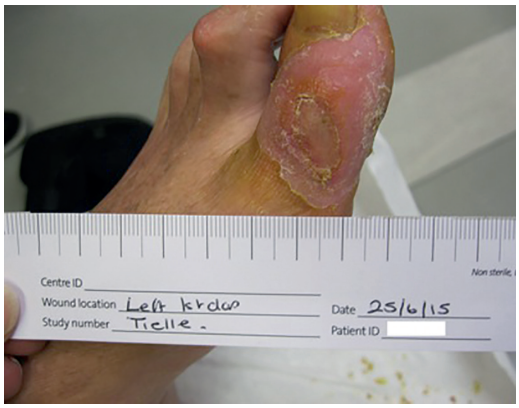

Figure 2. Wound at baseline.

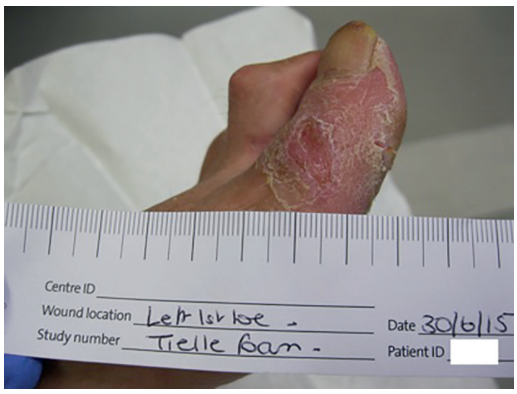

Figure 3. Week 1.

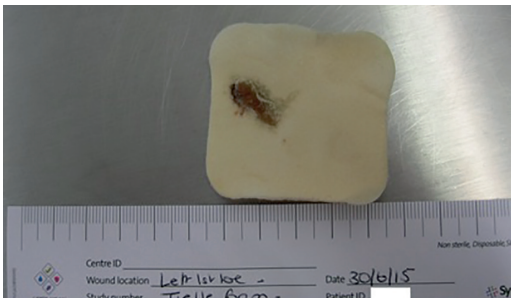

Figure 4. Evidence of exudate held in the dressing, with no evidence of lateral wick, which might otherwise have increased the risk of damage and maceration to the periwound skin.

7 days with no leakage. This longer wear time may result in fewer dressing changes, reduced risk of maceration, and contribute to cost effectiveness.

The testing showed clear practical advantages to using TIELLE Non-Adhesive. Testing showed that the composition of the dressing means it is able to match or exceed the performance of thicker dressings (Stephens et al, 2015). In practice, this means that the dressing is much more comfortable and easy for patients to use, while managing wound exudate as effectively as other bulkier dressings.

The dressing's thin, highly breathable polyurethane film means an increase in moisture vapour transmission and an overall increase of 30% in the total fluid handling capacity versus alternative available dressings (Stephens et al, 2015).

Case 1

Background

Patient 1 is a 66-year-old female with a past medical history of type 2 diabetes and neuropathy. Her relevant medications include insulin, atorvastatin, atenolol and aspirin.

Clinical assessment and treatment

The patient presented in the acute outpatient department with a diabetic foot wound of uncertain origin on the dorsum of the left 1st toe. The wound had been present for 2 weeks, measuring 20 mm x 8 mm, with a depth of 1 mm (*Figure 2*).

The wound had a slightly sloughy base, with no infection or maceration present. Exudate levels were low and the exudate serous. Prior to treatment with TIELLE, the patient was using another foam dressing with dressing change on alternate days, and using a derby sandal for offloading. The wound was not painful (due to peripheral neuropathy).

It was decided to switch to TIELLE dressing, in order to continue promoting a moist wound healing environment while reducing the profile of the dressing to facilitate greater comfort in offloading footwear. Dressing change was planned initially every 2 days (with the patient able to undertake dressing change herself). Review was planned for the next week, with debridement as necessary and the patient advised to contact the clinician if there were any problems before the next visit.

Week 1

By week 1, the wound had healed, although the skin was still fragile. The wound bed was 100% epithelialising. Treatment was able to be discontinued (*Figure 3*).

Discussion

The dressing was easy to apply, and the patient was able to manage dressing changes herself. Patient comfort was found to be excellent and the patient

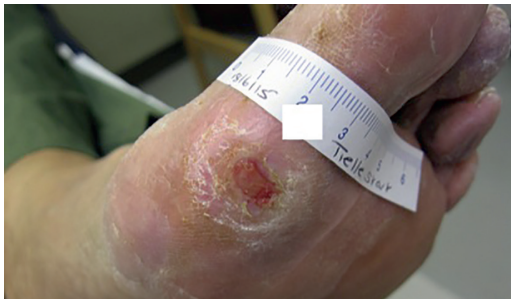

Figure 5. Wound at baseline.

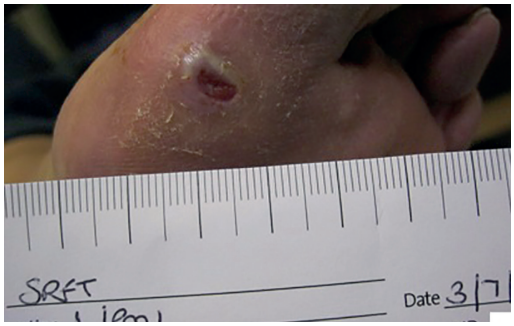

Figure 6. Week 2.

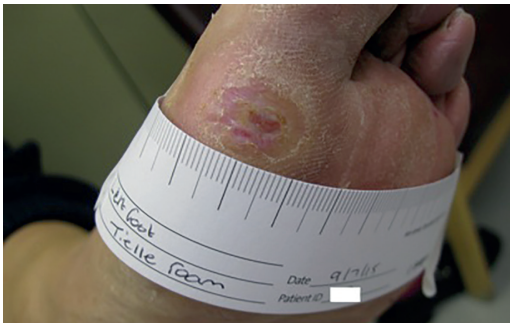

Figure 7. Week 3.

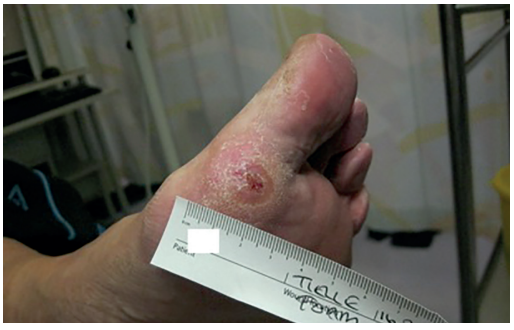

Figure 8. Week 4.

had no problems with using the dressing with a derby sandal. The dressing held the exudate with no lateral wick (*Figure 4*), and the patient experienced no problems. The dressing was discontinued as the wound had healed.

Case 2

Background

Patient 2 is a 70-year-old male with type 2 diabetes, neuropathy, chronic obstructive pulmonary disease (COPD) and asthma. Other comorbidities include obesity and the patient is on multiple medications.

Clinical assessment and treatment

The patient presented at acute outpatients with spontaneous blistering to the left plantar metatarsal head area. The wound had been present for 12 weeks and measured 7 mm x 5 mm, with a depth of 2 mm. The wound was 100% granulating with the surrounding skin healthy and intact, with no signs of infection and moderate levels of serous exudate. The wound was not painful as the patient had profound neuropathy.

The patient was in an ROM walker as he also had a fracture to his right first toe. Previously an iodine-impregnated dressing was being used, which required a daily dressing change. Following a decision to use TIELLE Non Adhesive, the patient would now change the dressing himself every 2 days, with podiatry review in 1 week (*Figure 5*).

Week 1

At Week 1, the wound had reduced in size (to 6mm x 4 mm, depth 1 mm). The wound bed was healthy and granulating and exudate levels had reduced. The patient was starting to slowly step down from the ROM walker into a surgical shoe with a total contact inlay (TCI). He found the dressing easy to use, with no problems at dressing change. Exudate was easily managed and held within the dressing. The decision was made to continue with TIELLE, with the patient changing the dressing himself twice per week.

Week 2

The wound had again reduced in size slightly (to 6mm x 3mm, depth 1mm; *Figure 6*). Exudate levels remained low and the dressing handled the exudate with no problems. The patient continued

to find the dressing comfortable and easy to use. He found that the dressing conformed to the foot and was accommodated well in his surgical shoe and TCI, which he was wearing more as his fractured toe healed. Treatment was continued, with the dressing change managed by the patient twice a week, and due to the absorbency profile of TIELLE Non-Adhesive, the dressing change frequency was decreased without any negative impact.

Week 3

The patient continued to use the dressing well. The wound size again reduced slightly and become shallower (to 6 mm x 2 mm, depth 1 mm; *Figure 7*). The patient continued to offload using the surgical shoe. The wound bed was healthy and granulating and exudate levels still low. The decision was made to continue with TIELLE, with the patient redressing the wound on Mondays, and podiatry on Thursdays.

Week 4

By Week 4, the wound was close to healing, with surrounding skin intact and healthy (*Figure 8*). Dressing with TIELLE was continued for one more week to allow full epithelialisation, with a dressing change in 3 days, and then reviewed in 7 days in podiatry, by which time the wound was fully healed.

Case 3

Background

Patient 3 is a 63-year-old female with multiple comorbidities, including Type 2 diabetes, ischaemia (awaiting bypass surgery to left leg), neuropathy, osteomyelitis, obesity, and angioedema. She is taking multiple medications, including metformin.

Clinical assessment and treatment

The patient presented to the multidisciplinary foot clinic with a wound to the left fifth toe joint caused by a fall/slip almost 6 months previously. The wound was shallow and small (8 mm x 4 mm, depth 2 mm) but 100% slough and with dry/flaky surrounding skin and low levels of serous exudate. There were no clinical signs of infection and the wound was not painful (due to neuropathy).

The patient was using a sandal for offloading, and using another foam dressing that was changed three times per week. The decision was made to switch to TIELLE, with an initial daily dressing change and the patient instructed to contact the clinic out of hours with any problems if necessary, particularly due to the patient's significant issues concerning blood supply.

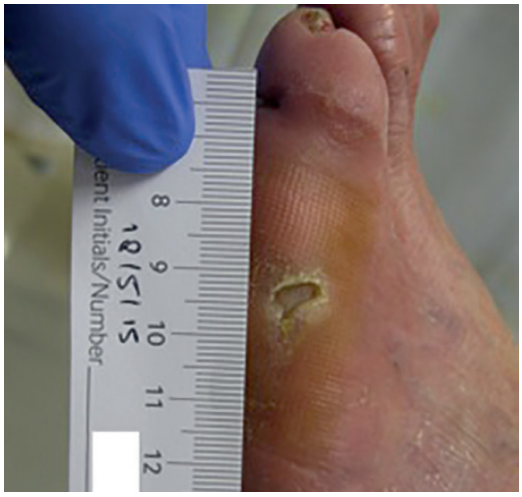

Figure 9. Week 1.

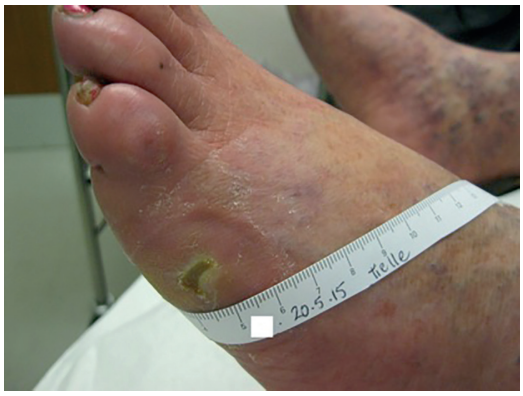

Figure 10. Week 2.

Week 1

At Week 1, the wound was smaller (7 mm x 4 mm, 1 mm depth but had a thin layer of yellow slough [100%]). The patient found the dressing comfortable and easy to apply. The dressing fitted easily under the patient's specialist footwear. The exudate level was now rated as moderate, but the clinician noted that the exudate remained locked in the dressing and the surrounding skin was now improving and healthy. It was decided to continue dressing with TIELLE, with dressing change three times per week (*Figure 9*). The goal of therapy was

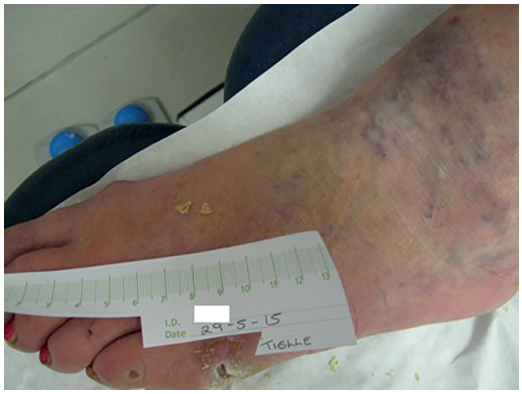

Figure 11. Week 3.

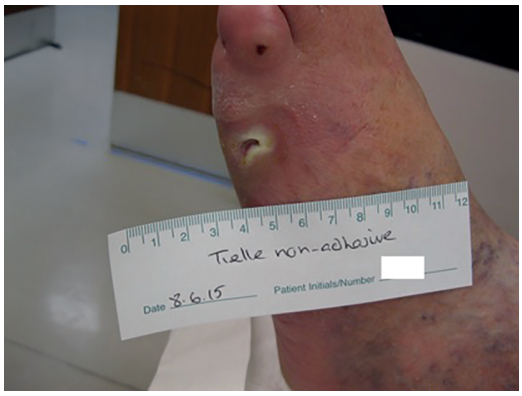

Figure 12. Week 4.

to protect from deterioration of the wound and potential complications due to blood supply issues.

Week 2

The wound was improving with slow progress, measuring 7mm x 3mm, depth 1mm. The wound was noted to be less sloughy – 80% slough, 20% granulation tissue (*Figure 10*). Exudate levels were low and well managed by the dressing. The surrounding skin was in good condition; a small amount of callous was debrided. The dressing was comfortable and fitted well – the patient was now using a sandal with padding, but could not wear 'normal' footwear with ulceration present. Dressing change was painless and simple, with no sticking to the wound on removal. The decision was made to continue with TIELLE, with dressing change three times per week and pressure relief.

Week 3

The wound had reduced in size slightly (6mm x 3mm, 1mm depth). The wound bed remained 80% sloughy, with 20% granulation tissue (*Figure 11*). Exudate levels remained low and well managed, with healthy surrounding skin and no signs of maceration. The decision was made to continue with TIELLE, with the patient changing her own dressing three times per week.

"The dressing was comfortable and fitted well – the patient was now using a sandal with padding, but could not wear 'normal' footwear with ulceration present. Dressing change was painless and simple, with no sticking to the wound on removal."

Week 4

The wound had decreased in size, measuring 5mm x 2mm, 1mm depth. The sloughy central area had reduced to 70%, with 30% granulating tissue at the edges. The surrounding skin continued to be healthy and exudate managed well. Considering the patient was at high risk of complication and awaiting surgery, this was a remarkably good outcome. The patient found the dressing very comfortable and easy to use, so the decision was made to continue with TIELLE, with the patient changing the dressing herself three times per week, as wound healing continued (*Figure 12*).

Conclusions

In vitro testing shows that TIELLE Non-Adhesive dressings, when subjected to pressure, are able to show a significantly higher fluid retention than other dressings – testing showed that TIELLE Non-Adhesive had an effective wear time of up to 7 days, thus requiring fewer dressing changes.

The case studies demonstrate that this dressing is comfortable and easy to use in practice. Also, all of the patients were able to manage their dressings themselves without difficulty between clinic appointments. ■

Stephens S, Macauley N, Hill C et al (2015) Evaluation of the performance of a non-adhesive foam dressing for the management of wound exudate. Poster presentation.

Systagenix, data on file.