

Case study: Dehisced surgical wound

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KEY POINTS

- ▶ 29 days of negative pressure wound therapy (NPWT) were delivered from 1 Avelle™ Pump
- ▶ Hydrofiber® dressings were utilised to manage exudate throughout the treatment of the wound. When exudate level had reduced sufficiently, a light Foam dressing protected the wound as it healed completely
- ▶ During NPWT, the Hydrofiber® Avelle™ dressing interface offered peace of mind when the Avelle™ pump was disconnected, continuing to manage exudate and protect the peri-wound skin

THE PATIENT

A 67 year-old male with type 2 diabetes and peripheral neuropathy was admitted to hospital with sepsis following a penetrating injury to the plantar aspect of his right first toe. MRI revealed a drainable collection of infected tissue fluid/pus, and osteomyelitis of the proximal phalanx. He was reviewed by the surgical team who proceeded to drain the site of injury and amputate the right hallux with primary closure of the surgical site.

THE WOUND

4 days later at the first post-op dressing change, the wound had partially dehisced and the skin flap was cyanosed. At two weeks post-op the wound had totally dehisced, the flap was non-viable and subsequently debrided, leaving a large heavily exuding, predominantly sloughy, deep wound with a cavity (Figure 1).



FIGURE 1

MANAGEMENT

As the wound was heavily exuding and presented with a cavity it was initially dressed with AQUACEL® Extra™ dressing layered into the wound as a primary dressing and AQUACEL® Foam as a secondary dressing. As the wound edges showed evidence of maceration, Sensi-Care® Protective Barrier product* was applied to help protect the peri-wound skin. The dressing was changed three times a week.



FIGURE 2

On day 41 post-surgery, the exudate reduced to moderate levels (Figure 2), and a clinical decision was taken to use the Avelle™ NPWT System to promote wound closure as quickly as possible. The wound measured 3cm x 2.2cm. A 12 x 21cm Avelle™ Dressing was used (Figure 3) and dressing changes were completed twice weekly.



FIGURE 3

By day 70 the wound had reduced to 1.2cm x 0.4cm and the periwound skin was healthy. Low levels of exudate and had progressed sufficiently to step down to a traditional dressing regime of AQUACEL® Foam dressing (Figure 4).



FIGURE 4

The wound continued to make good progress, to a point where minimal exudate was evident so AQUACEL® Foam dressing was then replaced by FoamLite™ ConvaTec dressing which was applied until complete wound closure (Figure 5).



FIGURE 5

DISCUSSION

This case presented the department's first experience using this type of negative pressure wound therapy device, so at each dressing change techniques and learnings were observed.

The foot can present as a challenging area to dress due to anatomical features. Although it was noted at the time of the first dressing change that the seal by the second toe had been lost, the Hydrofiber® wound contact layer of the Avelle™ Dressing had effectively contained and managed the wound exudate.

At the next application the loss of seal was easily rectified by altering the position of the dressing, ensuring a good seal before applying the fixation strips, which were reported by the Author to be easier to apply with no gloves on.

By the third dressing change application of Avelle™ NPWT System for this patient became routine and completed within a normal wound care dressing appointment.

The patient described the dressing as “feels very comfortable”.

At 29 days of NPWT, a decision was made to discontinue use of Avelle™ NPWT system. This was partly because the exudate levels had reduced but also due to the imminent expiry of the 30 day pump. It was debatable that a 2nd pump could have continued NPWT for longer and possibly reduced the overall healing time. There is also growing evidence to support the notion that application of NPWT at the time of surgery may have prevented dehiscence of the surgical wound site.¹

WOUND PROGRESSION

Day 1	3cm x 2.2cm
2 weeks post-surgery	Dehisced flap debrided
Day 41	2.2cm x 1.3cm Avelle™ System commenced
Day 70	1.2cm x 0.4cm Step down from Avelle™ System after 29 days of NPWT
Day 120	Wound healed

1. Stannard JP, Gabriel A, Lehner B. Use of negative pressure wound therapy over clean, closed surgical incisions. Int Wound J 2012; 9 (Suppl. 1):32–39.

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The Avelle™ Pump is battery powered. Each pump is provided with 2 sets of AAA batteries to power the pump for the duration of its lifespan.

The Avelle™ Pump and Dressings were provided free of charge for this case study.

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