

## Case study: Non-healing Traumatic Wound

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### Key Points

- 76 Days of negative pressure wound therapy (NPWT) was delivered via 3 Avelle™ pumps.
- The Avelle™ NPWT System with its combined negative pressure therapy and the Hydrofiber® Dressing Technology effectively promotes wound bed preparation through autolysis whilst delivering therapeutic negative pressure to promote wound healing as demonstrated by this case study
- Avelle™ NPWT System can effectively manage complex wounds that would otherwise require surgical intervention.

### The Patient

This is a case study of 83-year-old male with cardiovascular disease, history of lower limb cellulitis, and bilateral hip replacements. Following a fall at home, he sustained a large traumatic laceration to his left knee. He did not seek medical attention to manage the wound due to the fear of contracting Covid-19 infection and decided to self-care.

The patient used simple dressings and was changing the dressings twice a day. Despite his best efforts the wound deteriorated and forced him to seek medical attention.

### The Wound

On initial assessment the two-week-old traumatic wound on his left leg was non-healing. There were no evidence of epithelialisation and wound contracture. The wound measured



FIGURE 1 - Wound on Presentation to Clinicians

6cm x 16cm and was described to be a shallow wound. The wound bed was covered with a mixture of thin and thick layer of discoloured slough and 30% pale granulating tissue. The wound edge was slightly rolled-in and although the peri wound skin was intact it appeared fragile and with some degree of oedema. It was described to be moderately exuding with no obvious signs of local infection. (Fig 1)



Fig: 2 Wound - Day 23: 3cm x 10cm  
69% reduction in overall wound size



Fig: 3 Wound - Day 40: 2cm x 8cm  
84% reduction in overall wound size



Fig: 4 Wound - Day 65: 1cm x 4.5cm  
95% reduction in overall wound size

## Management

It was decided by the surgical team with the patient's consent to treat the wound conservatively due to the risks associated with surgery, and that wound closure by secondary intention is the safest option versus performing a split skin graft which would mean managing two wounds with the risk of graft failure.

Following a holistic assessment, a clinical decision was made to use Avelle™ Negative Pressure Wound Therapy System to promote autolysis to address the slough present on the wound bed whilst delivering NPWT to reduce oedema and promote granulation tissue formation. The initial application of Avelle™ NPWT System using a 16cm x 21cm dressing pad, was uncomplicated and the dressing pad size was later reduced to 12cm x 21cm as the wound progressed. The therapy was tolerated well by the patient on both dressing application and removal.

Initially, the Avelle™ was changed twice weekly due to the increase of wound exudate brought on by the reduction of oedema and the process of autolytic debridement and this continued for 8 weeks reducing to weekly for the remaining 3 weeks of the therapy - as the wound showed significant improvement, demonstrated by the increased volume of granulation tissue, wound contracture, and obvious signs of epithelisation (See wound progression Fig 2)

Throughout the therapy the Avelle™ dressing was easily applied and atraumatically removed with no complications reported. (Fig 5)



FIGURE 5 - Avelle™ NPWT System In Situ



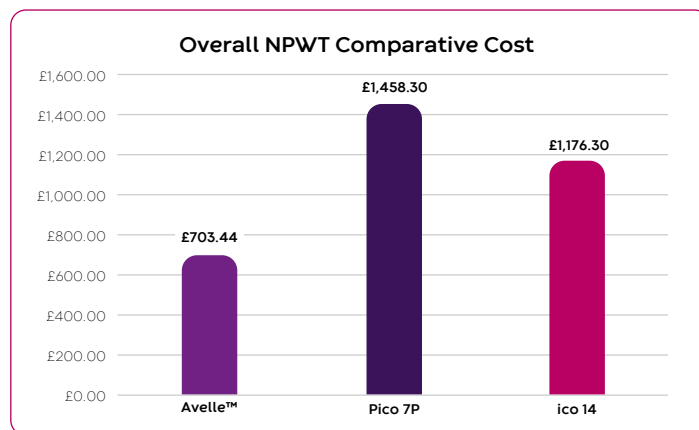
FIGURE 6 - Complete Wound Closure  
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The use of Avelle™ NPWT system achieved 80% wound closure for this case study and totalled 76 days therapy time, therefore only utilising 3 Avelle™ pumps. After this therapy time the small superficial wound was dressed with a simple dressing and achieved full wound closure 11 days later. (Fig 6)

## Discussion

The Avelle™ NPWT System with its combined negative pressure therapy and the Hydrofiber® Technology effectively promotes wound bed preparation through autolysis whilst delivering therapeutic negative pressure to promote wound healing as demonstrated by this case study. This occurs by maintaining a moist wound environment, the ability of the Hydrofiber® Technology to micro contour thereby promoting autolytic debridement of nonviable tissues whilst enhancing angiogenesis through the reduction of oedema and increased perfusion.

Avelle™ NPWT therapy is a cost-effective therapy over 30 days when compared to alternative 7- or 14-day devices.



Based on 76 days of NPWT treatment and a total of 18 dressing changes.\*\*

\*\*Compiled using Drug Tariff pricing, correct Sept 2021.

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