

Clinical Assessment of sNPWT in the Management of a Non-Healing Venous Leg Ulcer

Abstract

NPWT has emerged as an established therapeutic approach to the treatment of complex acute and chronic wounds in multiple care settings¹. Application of both traditional NPWT (“tNPWT”) and single-use NPWT (“sNPWT”) has previously been detailed in literature², with sNPWT therapy being used for up to 7 days³. An added benefit of sNPWT is its ability to help with patient quality-of-life attributes through its smaller, lighter, and portable designs.

This case study highlights the use of a sNPWT system, the MicroDoc® from Pensar Medical™ with an integrated, adaptive dressing (Fig. 1). It shows how the system supports the continuum of care for successful wound healing outcomes while providing being patient-centric in comfort and use.

Aims

To visibly improve wound healing by identifying epithelization and reducing hypergranulation with further prevention of infection and skin breakdown through the use of sNPWT system. An additional aim was to ensure patient experience and comfort was optimized during the continuum of care.



Fig. 1: Pensar Medical MicroDoc®, sNPWT System

Patient Profile

Patient was a 62-year-old male with multiple comorbidities who engaged in daily tobacco use. Patient was diagnosed with Peripheral Arterial Disease (PAD), Type 1 Diabetes (using an insulin pump) and Hepatic Cirrhosis.

Clinical Problem

The patient had a non-healing venous leg ulcer with exposed bone. He also had a stent placement following vascular intervention and was five months post-op. Initial wound measurements on Day 1 were 10.5 cm x 6.0 cm x 0.5 cm (Fig. 2).



Fig. 2: Non-healing venous leg ulcer (Day 1)

Treatment

MicroDoc® sNPWT therapy was ordered with an integrated adaptive dressing (Fig. 3). The initial order was for a period of 7 days with a pressure setting of -50 mmHg. Initial dressing change frequency was upon strikethrough reaching the dressing edges, and then changed to weekly as drainage decreased.

Outcomes

On Day 7 dressing change (Fig. 4), the clinician assessed a reduction in wound depth leading to a more uniform appearance (see Figure 6). She noted epithelialization starting to occur and migrate at the wound edges, and that the wound bed was becoming flatter aligning with the edges, indicating ongoing healing processes. The hypergranulated tissue also showed improvement and was resolving (Fig. 5). No wound odor was detected during dressing change, and the patient stated a notable decrease in discomfort with the lower pressure setting of -50 mmHg⁴ as noted with the patient rating a 1 on a pain scale of (1-10).

Conclusion

This case study demonstrates the successful application of sNPWT using the MicroDoc® system with an integrated, adaptive dressing in helping heal a complex wound.

The patient, who had multiple co-morbidities, exhibited measurable wound healing, including reduced wound depth, improved tissue quality, and epithelialization at the wound edges. This case exemplifies the ability of the MicroDoc® sNPWT system to effectively manage difficult wounds, demonstrating its value in diverse medical and patient settings while supporting the patient's lifestyle through portability. According to patient reports, the treatment effectively reduced pain.



Fig.3: Integrated adaptive dressing



Fig. 4: Improved wound healing (Day 7)



Fig. 5: Healthy granulating tissue (Day 9)

References

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4. Shizhao Ji, et. al., Consensus on the application of negative pressure wound therapy of diabetic foot wounds, Burns & Trauma, Volume 9, 2021, tkab018

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