

## Case Report

# An interplay between nursing's skills and new technologies in the home care: a case report of a complex ulcer

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## Background and aim

The increase in the phenomenon of chronicity and polypathologies, together with an organizational analysis of post-pandemic COVID-19 healthcare companies, has confirmed that the center of care is the home care sector. The phenomenon of chronic ulcers affects over two million people cared for with tracking difficulties, which is often a submerged phenomenon. Furthermore, more than 80% of all ulcers present show critical colonization, with organized biofilm colonies that are resistant to most treatments.

The gold standard for chronic ulcer treatment is as follows:

1. Standardized management with defined clinical skills
2. Use of evidence-based treatments<sup>1</sup>
3. Use of new technologies in the context of home care<sup>2</sup>

## Clinical Case – Clinical Pathway

A 71-year-old woman with a heavily exuding stage III pressure ulcer in the left ischial region.

She had a history of paraplegia caused by a car accident, and had reconstructive plastic surgery at the hospital two years prior to the evaluation.

She developed weight loss 6 months after admission. A nutritional assessment was then conducted, and dietary monitoring performed, with the introduction of protein supports, essential amino acids, arginine, glutamine, and multivitamins.

After about 2 months, a new ulcer developed in the same area with full thickness loss, 1.5 x 1.5 cm and 2 cm from 360° undermined and partially covered by a non-vital area. There were high levels of exudate.

A multi-professional evaluation was carried out and a home treatment plan was planned in line with the patient's will. The community nursing team, together with network wound care specialists, established a treatment plan using advanced dressings of different technologies according to the TIME-WBP evaluation, with a

frequency of three times per week.

After 20 days of treatment, the wound was considered hard to heal due to its increase in surface and absolute depth, despite different types of treatment and multidisciplinary reassessment.

The new plan included treatment with negative pressure wound therapy with controlled saline instillation (NPWTi) to clean the wound bed and stimulate tissue repair. Treatment was possible after definition of the clinical pathway, selection of a caregiver, training, and coaching by the wound care nurse specialist on how to manage NPWTi. Application of NPWTi resulted in a higher rate of granulation tissue reconstruction (43%,  $p < 0.05$ ) than treatment with standard NPWT. Normal saline solution was instilled with a 5-minute exposure, followed by 2 hour negative pressure wound therapy at  $-125 \text{ mmHg}$ .<sup>3</sup>

Most of the wound debridement was performed after the first week of NPWTi application. Granulation tissue was observed after two weeks. After 21 days of NPWTi, treatment was switched to advanced dressings and silver hydrofiber dressings in combination with polyurethane dressings applied with a 2-weekly change for the first 20 days. Subsequently, treatment with advanced drugs continued according to TIME-WBP-BWAT assessment and clinical pathway.

### Discussion and conclusion

This case report highlights how the right path of clinical management of a chronic wound found its right destination in the home context<sup>4</sup>. Therefore, promoting an organizational model, clinical and relational skills, and new technologies for the treatment of chronic skin lesions is really possible<sup>5</sup>.

It is clear that the basic requirement must be an organizational model with defined skills and the availability of new technologies that can be used directly at home.

This case report shows how, with the patient's wishes and the additional skills of the caregiver, it was possible to achieve such a complex treatment at home.

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Figure 1: Wound baseline



Figure 2: Wound at twenty days



Figure 3: Wound at forty days



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## References

1. Lessing C, Slack P, Hong KZ, Kilpadi D, McNulty A. Negative pressure wound therapy with controlled saline instillation (NPWTi): dressing properties and granulation response in vivo. *Wounds* 2011 October 1;23(10):309-19.
2. McKanna M, Geraci J, Hall J et al (2016) Clinician panel recommendations for use of negative pressure wound therapy with instillation. *Ostomy Wound Manage* 62 (4):S1-S14.
3. Horch RE, Braumann C, Dissemond J, Lehner B, Hirche C, Woeste G, Wozniak G, Wetzel-Roth W, Willy C. Use of negative pressure wound therapy with instillation and Dwell time for wound treatment – Results of an expert Consensus Conference. *Zentralbl Chir.* 2018.
4. Gupta S, Gabriel A, Lantis J, Tèot L (2015) Clinical recommendations and practical guide for negative pressure wound therapy with instillation. *Int Wound J* 13(2):159-74.
5. Murphy C, Atkin L, Swanson T, Tachi M, Tan YK, Vega de Ceniga M, Weir D, Wolcott R. International consensus document. Defying hard-to-heal wounds with an early antibiofilm intervention strategy: wound hygiene. *J Wound Care* 2020; 29(Suppl 3b):S1–28.