

IMPROVING PATIENT TOLERANCE TO THERAPEUTIC COMPRESSION THERAPY WITH MICROCURRENT ELECTRICAL STIMULATION THERAPY (ACCEL-HEAL SOLO): A CASE STUDY.

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INTRODUCTION

Lipodermatosclerosis is a manifestation of chronic venous insufficiency that presents with constricted skin, pain, induration and hyperpigmentation¹. The patho-mechanism underlying lipodermatosclerosis is venous hypertension, as such compression therapy should be an appropriate adjunct for treatment². However, due to the constriction of the skin, pain is a primary symptom, and the utilisation of compression therapy can exacerbate this³, which can often lead to non-concordance with the treatment regime.

Analgesia can be implemented to attempt to manage pain and promote compliance, but this is not a long-term solution. Opioids continue to be the most effective drugs for acute pain⁴ but prolonged utilisation causes a diminished level of pain control, requiring an increased dose to achieve the same therapeutic level⁵.

Non-pharmacological interventions such as electrical stimulation therapy (EST) (Accel-Heal Solo), which can significantly reduce wound pain^{2,6}, has been reported to enable a reduction in analgesia⁷⁻⁸ with subsequent improved tolerance of gold standard therapeutic compression therapy⁹.

METHOD

A case study was undertaken to determine the benefits of using Accel-Heal-Solo EST, to reduce pain and enable tolerance to therapeutic

compression and kick-start wound healing. Photographs, wound dimensions, descriptions and pain scores were recorded prior to, during and following the therapy, which was implemented for 3 consecutive episodes of 12 days.

RESULTS

Betty, a 43 year old female, presented to the tissue viability team (TVN) with venous leg ulcers to her right medial, lateral and posterior aspects, which had been present for over 4 years. A full holistic and lower limb assessment was undertaken.

Especially in view of her age, the leg ulcers had a huge impact on her quality of life. She had previously worked in a school kitchen, but due to the pain and level of exudate from the wounds, she was now unable to continue working and had become house-bound and socially isolated. Pain was also causing sleep deprivation. She was taking opioids, with minimal effect and was unable to tolerate any compression therapy. Betty was also extremely concerned about the risk of being admitted to hospital with her leg ulcers.

The TVN discussed Accel-Heal Solo with Betty and the decision was taken to apply the therapy with the aim to reduce pain sufficiently to enable application of therapeutic compression therapy. Wound 1 to the medial/posterior wounds measured 300cm² (see figures 1 and 2); wound 2 to the lateral aspect measured 4.8cm² (see figure 3). Pain score was 10 on

visual analogue score (VAS) and she required opiates during dressing changes.

Accel-Heal Solo was commenced on 30/6/23 together with reduced compression (20mmHg at the ankle). During the Accel-Heal Solo therapy, Betty's pain score reduced to 5 (VAS) (50% reduction) and full compression therapy (40mmHg) was initiated.

Following the 36 day (3 consecutive treatments) therapy, on 11/08/23, wound 1 had reduced in size to 168 cm² (44% reduction) (see figures 4 and 5) and wound 2 had reduced in size to 1.5 cm² (69% reduction) (see figure 6), with minimal exudate levels. Betty's pain remained at 5 (VAS) throughout the Accel-Heal Solo therapy, but she managed to discontinue her opiate analgesia.

Reduction in oedema following EST enabled further pain reduction and she tolerated full compression therapy very well. Wound 2 healed on 22/12/23 (see figure 9) and the wounds to medial/posterior aspect continued to improve (see figures 7 and 8).

Betty's quality of life has improved significantly after the application of Accel-Heal Solo. She is no longer housebound and can attend the vascular team for regular reviews. Her day to day activities have improved and she no longer feels socially isolated.

DISCUSSION

Intolerance of compression therapy, due to pain, continues to pose challenges for health care



Figure 1. Day 0. Right leg posterior aspect



Figure 4. Day 36. Right leg posterior aspect



Figure 7. Day 175. Right leg posterior aspect



Figure 2. Day 0. Right leg medial aspect



Figure 5. Day 36. Right leg medial aspect



Figure 8. Day 175. Right leg medial aspect



Figure 3. Day 0. Right leg lateral aspect



Figure 6. Day 36. Right leg lateral aspect



Figure 9. Day 175. Wound healed. Right leg lateral aspect

professionals and patients³, with evidence reporting that up to 40% of healthcare professionals would reduce or remove therapeutic compression therapy⁹, if pain was un-managed. Analgesia is often poorly tolerated and/or ineffective, so alternative non-pharmacological therapies need to be considered to manage chronic pain¹⁰⁻¹¹, as demonstrated using EST in this case.

Application of microcurrent EST as an adjunctive wound care therapy, has been demonstrated to reduce wound pain significantly compared to applying standard care alone¹²⁻¹³.

A recent study of 20 patients⁸ determined significant reduction

in wound pain within the treatment period, using Accel-Heal Solo, which continued to fall throughout the follow-up period, resulting in the need for and number of analgesics being reduced.

CONCLUSION

Betty's case study provides further evidence of the benefits of using Accel-Heal Solo to reduce pain, enable full therapeutic compression therapy and kick start healing, demonstrating a cost effective solution for a non-healing leg ulcer, which had been present for over 4 years. The improvements to her quality of life were significant, with the concerns regarding risks of hospital admission also being diminished.

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DISCLOSURES

Accel-Heal Solo devices used in this study were provided by Accel-Heal Technologies Limited. Writing services were paid for by Accel-Heal Technologies Limited but were carried out independently. Accel-Heal Solo, Accel-Heal Technologies Limited, Hever, Kent, UK