

## Background

- Oxygen is a vital requirement for almost every aspect of the wound healing process.<sup>1</sup>
- In chronic wounds, sustained oxygen deficit (hypoxia) has been shown to have a detrimental effect on healing.<sup>2</sup>
- The aim of topical oxygen therapy (TOT) is to reverse localised hypoxia by increasing oxygen levels at the wound site.<sup>3</sup>
- Topical haemoglobin spray\* is one such TOT. When applied to the wound bed, the haemoglobin binds oxygen from the surrounding air and transports it to the wound bed where it diffuses into the cells.<sup>3</sup>

## Aims

- This e-poster presents a case involving a hard-to-heal leg ulcer.
- It has been compiled to highlight how the decision to introduce topical haemoglobin spray\* to the treatment regime coincided with a dramatic change in wound healing progress.

## Clinical Challenge

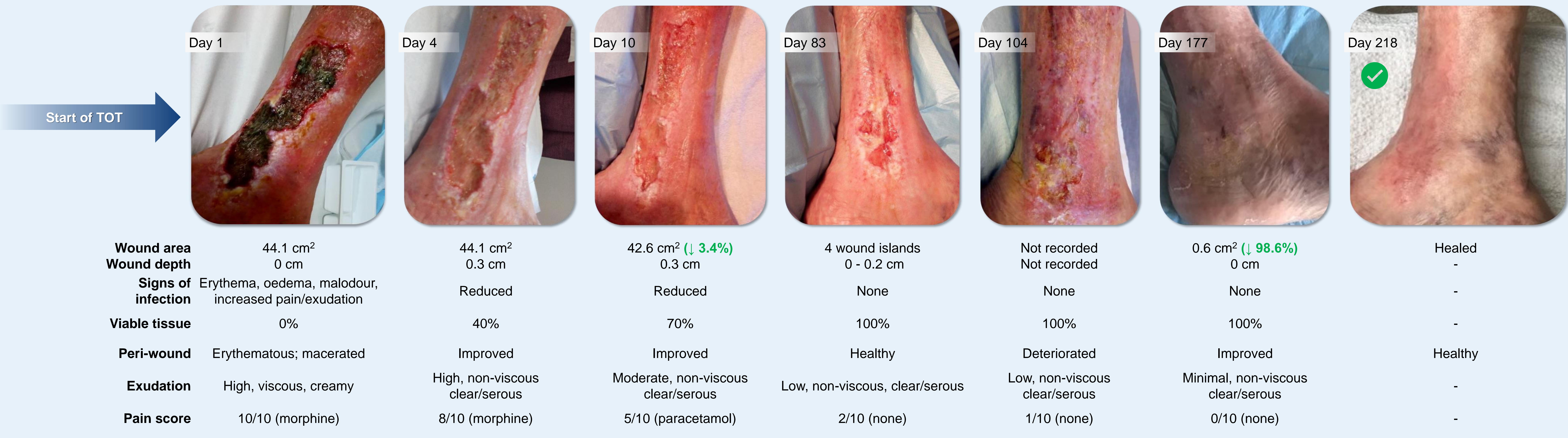
- Reduced vascularity
- Localised hypoxia
- High exudation
- Wound infection

## Patient and Wound History

- 82-year-old male with **medical history** of type 2 diabetes mellitus, peripheral neuropathy, chronic kidney disease, acute coronary disease, cellulitis, varicose eczema and deep vein thrombosis; **surgical history** of left total knee arthroplasty, tibial osteotomy
- Wound located on medial lower left leg, incorporating the malleolus; present for 18 months.
- Peri-wound skin was erythematous and macerated.
- Analgesia administered for pain (10/10 on a scale from 0 = no pain to 10 = worst pain imaginable).
- Previous treatment (10 days before baseline): poly-absorbent fibre dressing with nano-oligosaccharide factor, superabsorbent dressing and compression hosiery.

## Interventions and Wound Progression

- Topical haemoglobin spray\* was chosen for its ability to improve oxygenation of the wound bed to support healing.
- At each visit, the wound was cleansed using an antimicrobial wound irrigation solution.
- The wound was coated with a thin layer of topical haemoglobin spray\* and a barrier cream applied to the peri-wound.
- The wound was dressed with a superabsorbent dressing under wrap compression. After 10 days, the dressing was changed to a self-adherent, soft-silicone-coated foam dressing\*\*.
- Dressings were initially changed 3 times per week; twice weekly in the final 3 months of the case study.



## Patient's Perspective



*The patient was elated with the intervention and thought that the topical haemoglobin spray\* had 'most likely prevented amputation'. He said, "the dedication of my Tissue Viability Nurse together with her use of [the] haemoglobin spray have brought about a remarkable change in a relatively short time. In my opinion, following her method a huge saving could be made in the treatment of leg ulcers across the country."*

## Clinician's perspective



- Approximately 14 months after the wound had healed, another area of skin breakdown occurred to the lower limb; topical haemoglobin spray\* was applied again, and the wound healed within a few weeks.
- Following the positive outcome of this case study, the TVN applied to have topical haemoglobin spray\* put on the formulary for NHS Borders.
- Topical haemoglobin spray\* is considered to be an excellent product for the right wound. Any positive effect is generally observed within 2 weeks of starting treatment, with associated reductions in pain and wound exudate.