

Point-of-Care Multimodal Imaging in Mobile Wound Care: Insights from a Case Series

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Introduction

Chronic wounds—including pressure injuries (PIs), diabetic foot ulcers (DFUs), and vascular ulcers (VLUs)—pose unique diagnostic challenges in mobile wound care settings, where access to advanced diagnostics such as vascular studies is limited [1,2]. Multimodal imaging, which combines digital photography, near-infrared spectroscopy (NIRS), and thermography, offers a portable, point-of-care solution. This case series explores the clinical utility of a pocket-sized multimodal imaging device to support decision-making and optimize outcomes in mobile wound care practice.

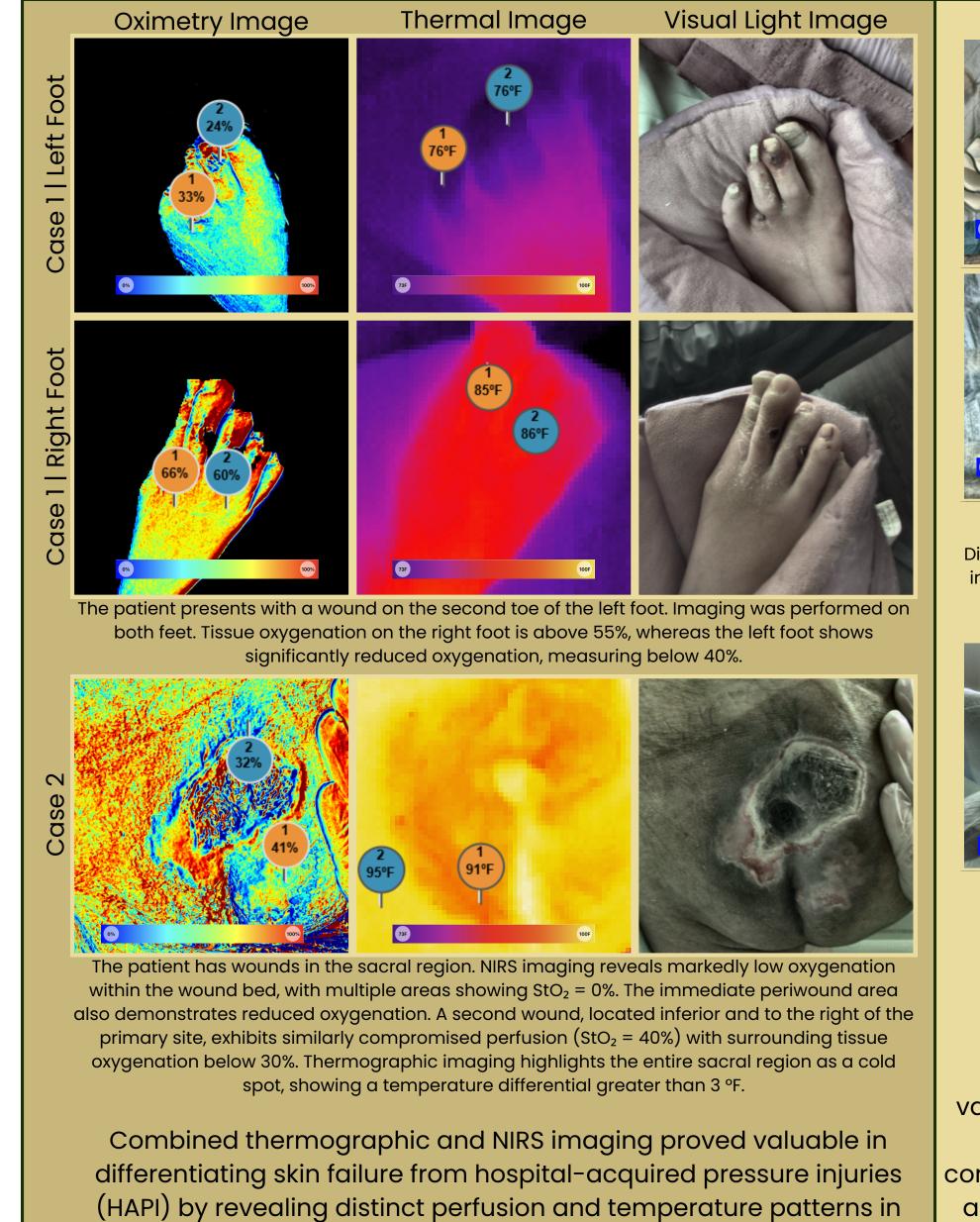
Methods

A case series was conducted involving six patients with chronic wounds managed in mobile care settings. A multimodal imaging device (MIMOSA Pro, MIMOSA Diagnostics Inc., Toronto, ON) was used at the point of care to capture tissue (StO₂) via near-infrared oxygenation (NIRS), skin surface spectroscopy (IR) temperature infrared thermography, and standard visual light images. The imaging data supported clinical assessment and guided treatment planning.

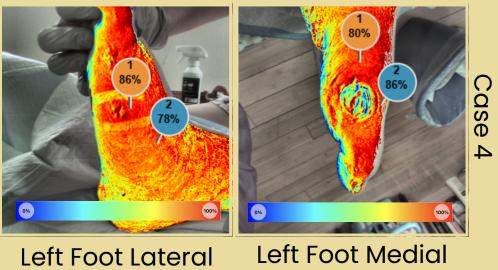
Results

Capture an image



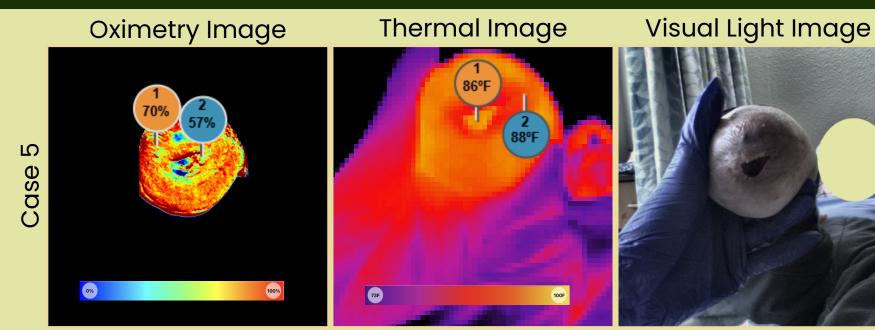


Oximetry Image Oximetry Image Case 3 | Right Case 3 | Left Diabetic patient concerned about debridement. NIRS imaging confirmed adequate perfusion, supporting safe procedure planning.

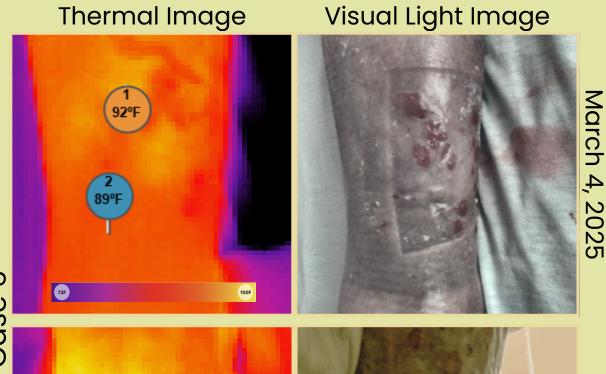


Patient with arterial disease, status post femoralfemoral bypass and partial left foot amputation. Vascular follow-up is pending to assess revascularization, but debridement proceeded

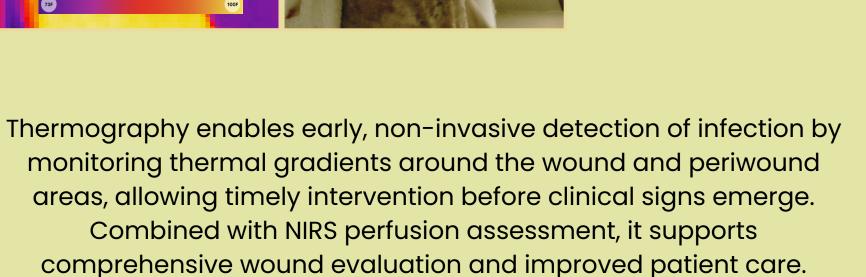
In mobile care settings with limited vascular testing, confirming perfusion is essential for safe debridement and compression therapy. NIRS imaging offers a practical, point-of-care tool to guide these decisions.



The periwound appeared dusky, with oximetry values between 17-30% in affected areas, while the remainder showed normal readings. Perfusion was assessed using NIRS. Thermography suggested possible infection, leading to initiation of antibiotics.



Thermography served as an early marker and surrogate indicator of infection. In March, an nitial thermal gradient was observed in the periwound area, which intensified by May. Infection was subsequently confirmed, and antibiotics were prescribed.



Discussion

Track patient progress

In mobile wound care settings, where access to vascular testing is limited, multimodal imaging with near-infrared spectroscopy (NIRS) and thermography offers a practical, point-of-care solution for assessing tissue perfusion and detecting early signs of infection. NIRS reliably evaluates perfusion status, guiding safe decisions on debridement and/or compression therapy, while thermography identifies thermal gradient changes that may indicate early infection or inflammation, enabling timely intervention. Together, these complementary imaging modalities enhance clinical decision-making, strengthen documentation, and support improved patient outcomes in resource-limited environments.

- 1. Kane H, Calalang R. Mobile Wound Care: Understanding a Changing Paradigm. In: Wound Source [Internet]. 29 Jan 2024 [cited 27 May 2025]. Available: https://www.woundsource.com/blog/mobile-wound-care-understanding-changing-paradigm
- 2. Bai X, Zhang H, Jiao Y, Yuan C, Ma Y, Han L. Digital Health Interventions for Chronic Wound Management: A Systematic Review and Meta-Analysis. J Med Internet Res. 2024;26: e47904.
- 3. Ayello EA, Levine JM, Langemo D, Kennedy-Evans KL, Brennan MR, Gary Sibbald R. Reexamining the Literature on Terminal Ulcers, SCALE, Skin Failure, and Unavoidable Pressure Injuries. Adv Skin Wound Care. 2019;32: 109–121.

pressure-prone areas [3].

