

Unveiling the Therapeutic Potential of Placental-Derived Grafts

Through Mobile Multispectral Near-Infrared Spectroscopy – A Case Series



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Introduction

Chronic wounds pose a significant global healthcare challenge, affecting millions of patients and straining resources. Optimal care for intricate surgical wounds, burns, and challenging-to-heal injuries is essential, necessitating advanced and specialized treatments. Placental-derived allografts have been extensively studied for their benefits². This study explores the potential of skin substitutes using mobile multispectral near-infrared spectroscopy (NIRS), with a focus on the placental extracellular matrix grafts.

Methods

A non-contact FDA-cleared handheld mobile multispectral near-infrared imaging device with thermal capabilities* was employed for measuring temperature and tissue oximetry (StO₂). The case series evaluates the effectiveness of an FDA-cleared skin substitute product**. Patients were longitudinally tracked, and data, including demographics, clinical characteristics, and NIRS findings, were collected and analyzed.

Results

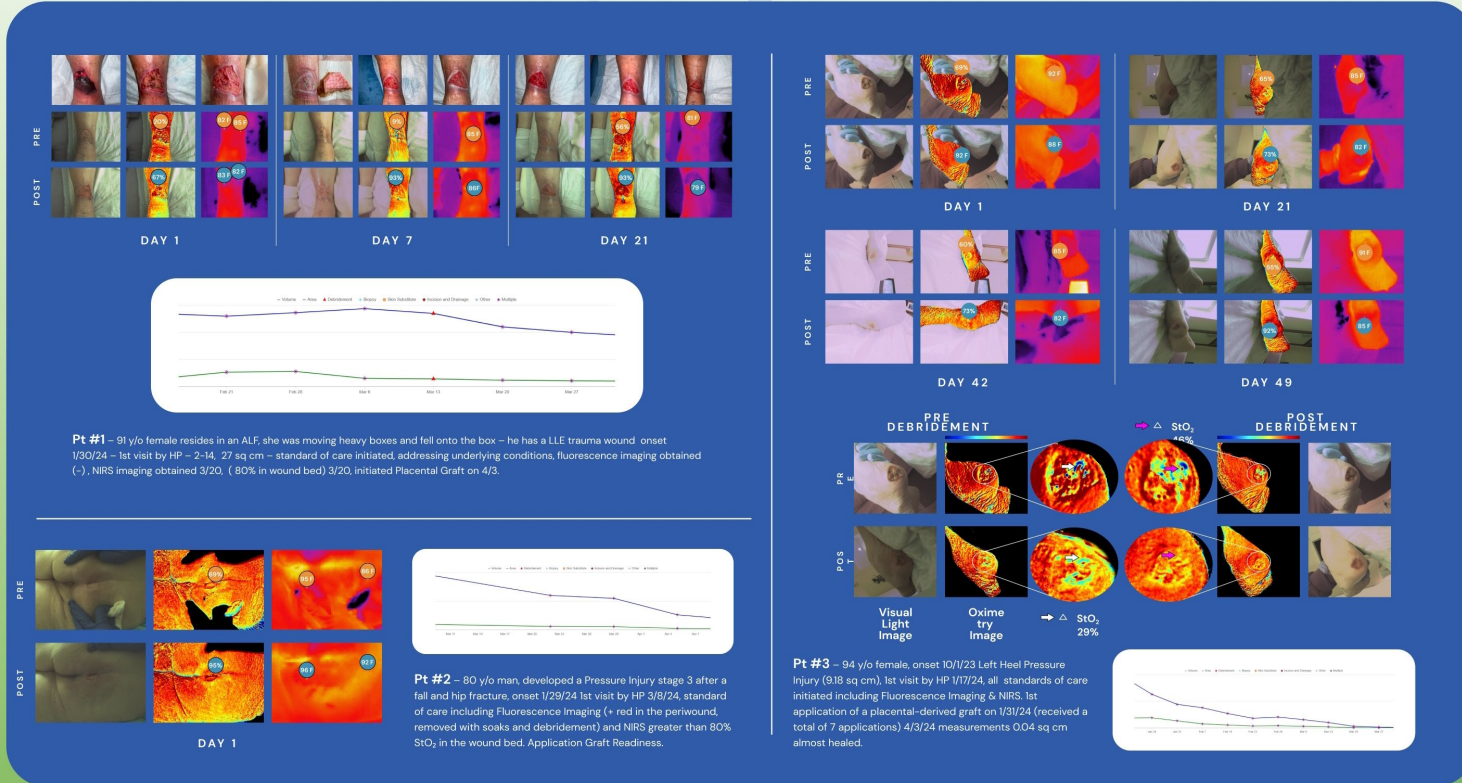
NIRS imaging offered a comprehensive view of the healing trajectory, capturing variations in tissue oximetry and temperature after applying the skin substitute. It proved to be an efficient method, not only indicating the current state of the wound but also assisting in determining its progress towards normal healing. Thermal imaging added valuable insights, detecting early-stage inflammatory reactions via temperature elevation at the wound site.

Discussion

Placental-derived grafts signify a groundbreaking advancement in the treatment of acute, traumatic, and challenging wounds. These grafts demonstrate versatility in addressing traumatic lacerations, dehisced incisional wounds, pressure and venous ulcers, post-Mohs surgical wounds, post-surgical incisions, and diabetic ulcers. The integration of NIRS played a critical role in accurately quantifying the healing trajectory, assessing progress, and pinpointing post-application complications of skin substitutes. This pivotal tool provides healthcare professionals with invaluable insights. In summary, this case series underscores the therapeutic potential of placental-derived grafts in wound management, with NIRS acting as a crucial instrument for precise monitoring and assessment, thereby contributing valuable insights to the diagnosis and treatment strategies for chronic wounds.

References

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- * MIMOSA Pro; MIMOSA Diagnostics Inc., Toronto, ON.
- ** InnovaMatrix, Convatec Triad Life Sciences, Memphis, Tennessee.



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