

# Surgical Reconstruction of Stage 3 and 4 Pressure Injuries with ECM Technology: A Proposed Algorithm

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## INTRODUCTION

The burden of pressure injuries (PI) remains a substantial problem with over 1 in 10 adults patients admitted to hospitals affected with PIs [1]. As of 2011 it was estimated that the cost of treating a stage IV PI and its related complications was \$129,248. Additionally, the average 6 month post operative healing rates for a stage IV PI is 31-34% and the post operative complication rate after flap reconstruction is reported to be 58.7% [2]. Approaches to the surgical closure of late-stage PIs are varied and suffer from relatively high complication rates. Additionally, while the utilization of advanced technologies, namely biologics and negative-pressure wound therapy (NPWT), is widespread there is no consistency in their deployment as part of the surgical intervention of late-stage PIs. The absence of a robust algorithm defining the surgical intervention of late-stage PIs led to the convening of an interdisciplinary panel to review the current state of the art and propose a treatment algorithm for the reconstructive and non-reconstructive intervention for late-stage PIs[3]. This abstract presents ongoing research from the interdisciplinary panel, including the Surgical Algorithm and four worked clinical case examples utilizing the algorithm along with a biologic graft as part of surgical reconstruction of these challenging soft tissue defects.

## METHODS

Development of the Surgical Algorithm has previously been reported as developed by an inter-disciplinary clinical panel[3]. In cases utilizing the algorithm, a biologic graft comprising ovine forestomach matrix\* (OFM) was included as part of the surgical intervention. Closed incision NPWT or traditional NPWT were used for the reconstructive and non-reconstructive cases, respectively. Patients were followed until closure and monitored for complications such as surgical wound dehiscence, hematoma, seroma, flap necrosis or infection. Data was collected retrospectively.

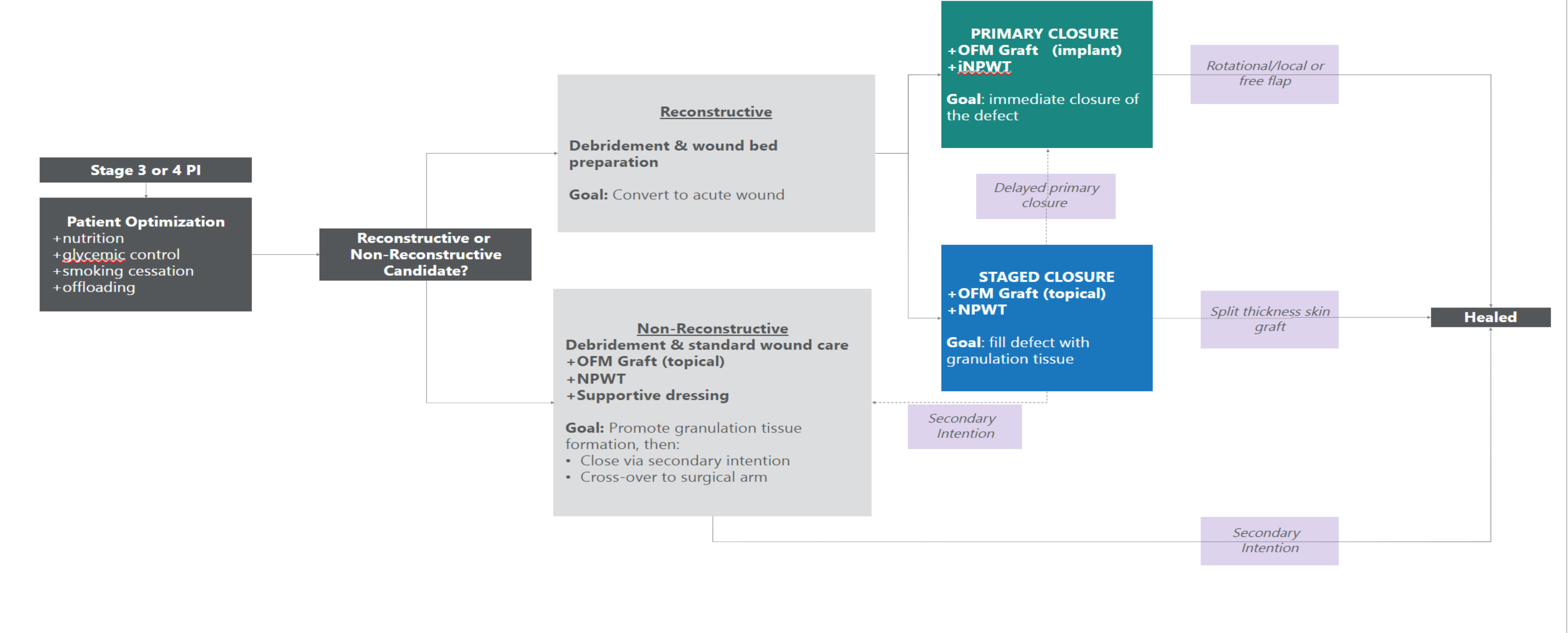
## RESULTS

The surgical algorithm previously developed by the interdisciplinary panel has been put into practice across several US institutions. In the four cases included here-in to exemplify the approach, all patients healed, with no post operative complications.

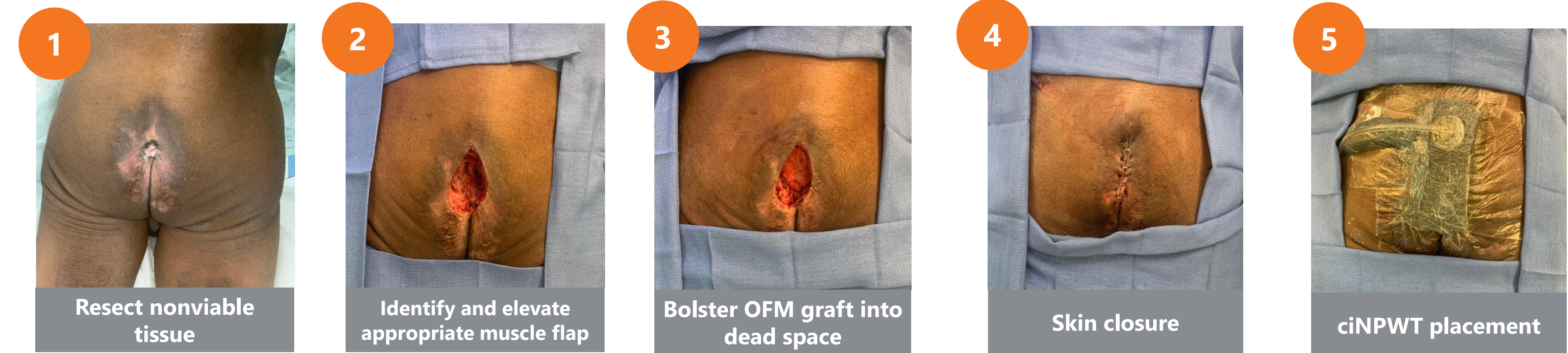
## CONCLUSION

A reproducible surgical algorithm utilizing advanced biologic technology, such as OFM, may assist in the accelerated healing of PIs and lower the post-operative complication rates. Further studies are on-going across the interdisciplinary panel to validate the inclusion of OFM-based graft in the Surgical Algorithm for late-stage PIs.

## Published Treat Algorithm



## Surgical Approach



## REFERENCES AND DISCLOSURES

Myriad Matrix™ (Aroa Biosurgery, LTD, Auckland, NZ)

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