Utilising Stacked NovoSorb® MTX and BTM for Popliteal Fossa Burn Contracture Release

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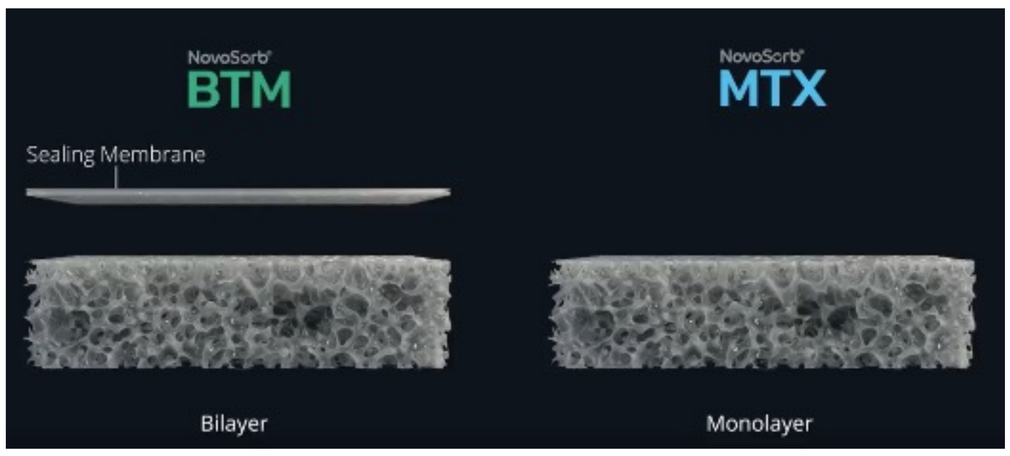
INTRODUCTION

- NovoSorb® MTX and NovoSorb® Biodegradable Temporising Matrix (BTM) are fully synthetic, biodegradable dermal substitutes designed to facilitate dermal regeneration through neodermis formation.
- Both products comprise a porous polyurethane foam scaffold that supports cellular infiltration and vascularisation.
- BTM additionally incorporates a transparent sealing membrane that reduces evaporative moisture loss during integration and is subsequently delaminated prior to definitive coverage with a split-thickness skin graft (STSG).
- While each product has been independently utilised in burn reconstruction, the combined or "stacked" use of MTX and BTM has not been widely reported, particularly for contracture release in anatomically complex regions.



PURPOSE OF STUDY

- The purpose of this study was to describe the surgical technique and early clinical outcomes of using stacked NovoSorb® MTX and BTM for reconstruction following excisional release of popliteal fossa burn scar contractures, with particular focus on restoring knee extension, addressing soft-tissue volume deficit, and optimising contour in a high-mobility anatomical region.

METHODS

- We present two cases of post-burn popliteal fossa scar contractures causing limitation in knee extension and requiring surgical release.
- The first case involved a 14-year-old male refugee who sustained a scald burn in early childhood and had previously undergone surgery, resulting in a dense linear scar band extending from the distal posterior thigh across the popliteal fossa to the proximal calf, limiting knee extension by approximately 20 degrees (presented below).
- The second case involved a 44-year-old male with a history of a childhood flame burn to the left popliteal fossa, with no prior surgical intervention, presenting with a broad mature scar causing a 10-degree limitation in knee extension.
- Both patients underwent excisional scar release followed by reconstruction using stacked NovoSorb® MTX beneath BTM. Negative pressure wound therapy was applied for three weeks to aid integration. At four weeks post-operatively, the BTM sealing membrane was delaminated and the wounds resurfaced with hand-fenestrated STSG.

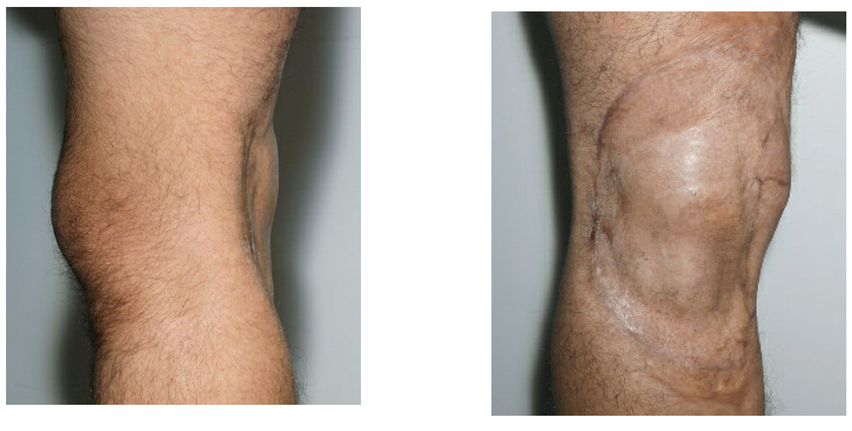
RESULTS

- No postoperative infections or complications were observed.
- In both cases, the stacked dermal substitutes fully integrated within three weeks under negative pressure wound therapy.
- Following STSG application, both patients achieved 100% graft take.
- Complete wound healing was achieved by four weeks post-operatively, with restoration of full knee extension and satisfactory contour without evidence of deformity.

Pre-Operative

Pre-Delamination 3 weeks Post-Op

Post-Delamination + STSG – 5 day Post-Op Graft Check



1 Year Post-Op

CONCLUSION

- To our knowledge, these are the first reported UK cases describing the use of stacked NovoSorb® MTX and BTM for excisional release of burn scar contractures.
- This technique demonstrates a potential advantage in managing deep soft-tissue defects by addressing volume loss and contour irregularity, particularly in functionally demanding areas such as the popliteal fossa.

REFERENCES
Rajaram R, Zhang M, Premaratne G, Ng S. Novosorb® BTM- history, production and application in challenging wounds. Front Bioeng Biotechnol. 2024 Nov 13;12:1450973
PolyNovo Ltd (2025). Novosorb BTM and MTX. Available at: https://polynovo.com/novosorb-btm-int-en/ [Accessed May 2026]