

# An Experience with a Biodegradable Temporizing Matrix in a Metropolitan Burn Center

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## Introduction

In a large adult and pediatric metropolitan burn center, we are faced with a variety of challenging burn and complex wound cases that require surgical intervention.

With the introduction of a new biodegradable temporizing matrix (BTM) in the US in 2017 (Figure 1), we have introduced into our surgical routine a new option for wound coverage in these complex cases.

This new biodegradable temporizing matrix has allowed us to provide temporary wound closure in critical patients in our burn center undergoing life-saving clinical support while awaiting skin graft closure. Not only is BTM beneficial in acute burn cases, but also in burn reconstructive cases.

We share our experience using BTM in managing complex wounds and burn injuries, as well as reconstructive cases in a series of patients over the past year.

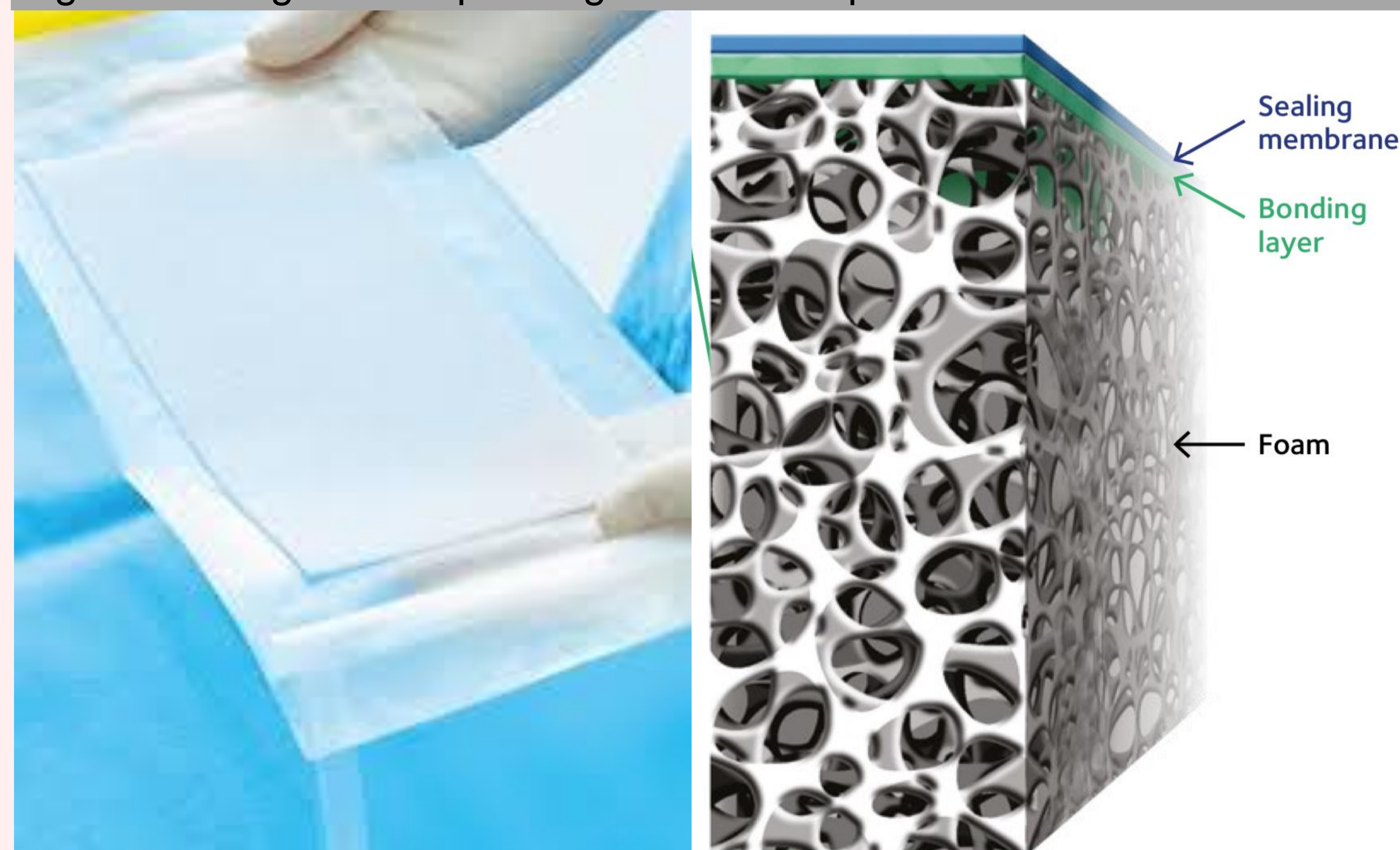
## Methods

A retrospective chart review of patients who were admitted to our burn center who underwent BTM placement and subsequent split thickness skin grafting (STSG) was performed. Acute burn and wound cases were included as well as reconstructive cases. The data reviewed was from February 2018 – August 2019.

An analysis of each patient included (Figure 2):

- Mechanism/TBSA
- Indication for BTM placement
- Post burn day (PBD) placement of BTM
- PBD of STSG
- Total days until closure of wounds
- Objective outcome and surgeon impression

Figure 1: Image of Temporizing Dermal Template<sup>1</sup>



## Results

Figure 2

Mechanism/ TBSA	Indication/ (Acute vs. Reconstruction)	BTM Placement	BTM Removal/ STSG	Total days Until Closure	Objective Outcome/ Surgeon Impression
2% TBSA Hot oil scald burn	Right foot exposed bone and tendon (Acute)	PBD 26	PBD 82	56	Partial loss, Osteomyelitis of calcaneus Good Function/ Poor patient selection
65% TBSA Flame burn	Neck scar contracture (Reconstruction)	PBD 1127	PBD 1153	26	Area of BTM not incorporated 85% graft take/ Good Result
1% TBSA Contact burn	Exposed calvarium (Acute)	PBD 8	PBD 26	44	BTM loss, Hypertrophic granulation tissue
Necrotizing Soft tissue Infection	Left upper extremity complex wound, exposed tendon and vasculature (Acute)	PBD 36	PBD 55	19	100% graft take/ Excellent result
27% TBSA Flame burn	Neck scar contracture (Reconstruction)	PBD 177	PBD 198	21	100% graft take, patient reported additional range of motion/ Excellent Result
60% TBSA Flame burn	Previous back graft site loss to invasive mold infection, loss of donor sites (Acute)	PBD 54	PBD 111	57	100% graft take/ Life saving technique

## Conclusion

The availability of a biodegradable temporizing, polyurethane-based material in our burn center has positively added to our repertoire as surgeons an additional method for temporary wound closure as a dermal template.

What we have learned is that we can improve wound bed preparation for ultimate skin grafting in both acute and reconstructive cases. BTM can become life-saving in critically ill patients with complex wounds and comorbidities.

## References, Funding and Disclosures

1. <https://polynovo.com/btm-for-hcps/>

Funding: None. Disclosures: none.