

Biodegradable Temporising Matrix (BTM) for the reconstruction of defects following complex wounds: A case series

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Abstract:

Novosorb Biodegradable Temporizing Matrix (BTM; Polynovo, Adelaide, Australia) is a synthetic device useful in management of degloving injuries, pressure ulcers, full thickness burns and necrotizing fascitis. The development of BTM began at the Royal Adelaide Hospital in South Australia in 2004. In this case series we present patients who have complex wounds who undergo a two-stage reconstruction with BTM, a totally synthetic polyurethane dermal substitute and secondary skin grafting, resulting in durable cover with minimal contracture.

When considering management of skin defects there are many aspects that need to be considered including graft failure, length of time to harvest/process, risk of infection, fragility of microstructures and costs. Using skin grafts can lead to contracture of joints while reconstruction using tissue flaps can be bulky with poor contour definitions and healing of both reconstruction and donor site may be compromised by patient comorbidity and instability. The factory-fenestrated BTM allows wound resurfacing and reconstruction prior to grafting ultimately optimising functional and aesthetic outcomes in patients.

BTM is composed of three layers including biodegrading foam, bonding layer, and sealing membrane which acts as an interface for deep burns down to muscle. It provides structural support by allowing fibroblasts and blood vessels to infiltrate and then proliferate over 3 to 4 weeks. While allowing re-epithelialization the dermal matrix prevents wound contraction. This case series of seven patients with complex wounds (with bone and tendon on view) in different anatomical locations shows BTM applied over the wound and after a period of integration, the sealing membrane is removed and a split-thickness skin graft is applied. Final outcomes are illustrated in pictures for each case and both functional and cosmetic outcomes are discussed.

Biography:

I am an unaccredited surgical registrar currently working in Queensland, Australia with a long term goal to become a plastic/reconstructive surgeon one day.

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