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TITLE **Evaluating the use of BTM and MTX for non-ischaemic diabetic foot wounds- a retrospective cohort study**

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ABSTRACT (maximum 450 words. Please use the following or similar headings: Background/Methods/Results/Conclusions)

Background

The management of diabetic foot wounds, particularly following toe amputations, presents significant challenges due to a combination of issues, including but not limited to poor vascularization, high infection risk, and impaired healing capacity. In recent years, advanced wound care technologies have shown promise in improving outcomes in these difficult cases, with the use of Biodegradable Temporizing Matrix (BTM) and synthetic wound matrix (MTX) having gained traction as part of a staged reconstructive strategy. The aim of this study was to evaluate the efficacy of using BTM and MTX in the reconstruction of challenging diabetic foot wounds.

Methods

Deriving data from the Australasian Vascular Audit, an observational study was conducted using a prospectively maintained institutional database to identify patients who underwent BTM and MTX applications operatively over a 12 month period, between June 2023 to June 2024. Patients underwent surgical debridement followed by application of either BTM or MTX based on wound characteristics and clinical progress. Data collected included patient demographics, wound aetiology, rate of epithelialisation, requirement for secondary procedures, infection rates, and healing outcomes.

Results

22 patients were included in this study, of which 21 received BTM and 1 received MTX. Mean patient age was 67.2 years old, with a median wound duration of 4 weeks prior to intervention. No case required a major limb amputation, and there were no wound-related infections. 14 cases required planned staged split-thickness skin grafts (STSG) as a secondary procedure.

Conclusion

BTM and MTX are effective adjuncts in the management of non-ischaemic diabetic foot wounds, facilitating wound bed preparation and enhancing healing. The majority of cases in our single-centre retrospective study required staged elective STSG procedures. Further prospective studies are warranted to define optimal patient selection and compare long-term outcomes across different dermal substitutes.