Replacing the need for skin grafting in small surgical excision wounds.

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Smart Matrix is a novel fibrin/alginate dermal replacement scaffold developed for the treatment of full thickness wounds without the need for a skin graft. The safety and performance of Smart Matrix in the treatment of surgical excision wounds arising from the excision of NMSCs is currently being assessed in an ongoing clinical investigation.

Recruitment into the trial is complete with 32 patients treated at 4 clinical sites. The average age of the subjects is 75 (range 54-90) and all lesions have been on either the lower leg or scalp. The average excision wound size is 10.5 cm^2 (range 3.7-25.5 cm^2). Patients are assessed for safety parameters, such as infection and seroma and the need for a 'rescue' skin graft. Performance parameters include time to healing and scar quality using POSAS and VSS scar scores. Patients are followed up for 12 months. Surgeon assessment of the device is also recorded.

To date 25 patients have completed the study. All wounds have healed with minimal complications; infection, seroma and haematoma rates are within expected levels for this type of surgery. Importantly, no patients have required a skin graft or any further surgical intervention. Healed wounds show a favourable scar outcome, in particular with reference to contour and contraction. Surgeons report the device simple to use and no specialist training is required. Patient satisfaction is high, with the primary advantages being reported as not having to have a donor site wound and the good cosmetic outcome of the scar. Several patients who have presented with second lesions during the study have asked to be treated with Smart Matrix again, rather than have a skin graft.

In conclusion, Smart Matrix shows a good safety and performance profile in the treatment of NMSC excision wounds without the use of a skin graft. Although healing times are slower that would be expected for a skin-grafted wound, this has not been associated with any increase in wound complications, such as infections, or compromise on scar quality. In fact, Smart Matrix treated wounds result in a good cosmetic and functional outcome that in many cases is better than would be expected for a skin-grafted wound.

Smart Matrix has potential to offer an alternative to skin grafting for surgical excision wounds with consequent benefits to the patient of avoiding a donor site wound and its associated morbidity. It may also have application in small traumatic skin injuries or burns and in non-specialist settings.