Background:
We describe a technical advance employed in our unit for split skin grafting of hand burns. This refinement of technique aims to heal the difficult 3D structure of the web space with prevention of contracture and need for complex flap reconstruction. Our protocol aims to identify, debride and sheet graft dorsum of hand burns within 10 days and palmer burns optimised until 3 weeks, then grafting if required. We had previously gained good results from hand grafting but the management of early and late contractures and web creep with therapy, splinting and steroid injections prompted an improved primary reconstruction. Assessment of patterns of contracture and creep, causing both functional and aesthetic concerns, determined bands frequently along edges of graft inset. Blunting of the complex sloping concavity of the web space by graft inset and contracture bands caused a reassessment in concavity wound healing. Research and surgical experience indicated a wound healed into a concavity was frequently by secondary intention, prompting a technical change.

Aim:
To preserve the concavity and the depth of web spaces in hand burn reconstruction

Technique:
Preservation of structure of web space with healing by granulation. Debridement of burn on dorsum of the hand with a Gulian knife preserving dermal appendages in web spaces.

Split thickness sheet grafts are placed in two longitudinal sub units – radial and ulnar rays (Grafts anchored with Skin Glue or staples)

Meticulous inset of graft design spaced 2 cm from web space - encouraging granulation and epithelialization into a concavity.

Grafted hands are dressed with Bactigras, Velband and Easyfix/Coban. All web spaces are packed with dressing to maintain the volume of the web space. All grafts are inspected at D5 post graft and every second day thereafter.

The results of this technique were reviewed by the 6 consultants and 4 occupational and physiotherapists determining an improvement in outcomes for hand burns.

Conclusion:
This novel technique has resulted in excellent cosmetic and functional outcomes. Its implementation has significantly decreased both the workload on therapists and secondary reconstructive procedures. The results of this technique have resulted in a change in practice of the unit for 18 months.

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