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Results From Application of an Absorbable Synthetic Membrane to Superficial and Deep Second Degree Wounds

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Introduction: The care of 2nd^o burns remains challenging because of pain during daily dressing changes and unpredictability of healing time and scarring. Temporary coverage solutions have been studied in the past (xenograft, allograft, amniotic membrane, Biobrane®, Transcyte®, Mepithel® etc.), in an attempt to limit the amount of painful dressings and accelerate healing. Infection and integration into the healing wounds have been the major drawbacks and there are minimal final outcome reports. The ideal treatment of 2nd^o burns would 1-decrease pain, 2-limit dressing changes, 3-allow assessment of healing progress, 4-prevent infection, 5-accelerate healing, 6-improve long term outcome, 7-save treatment cost. This new dressing material seems to fulfill 6 out of the 7 above mentioned requirements.

Methods: In 18 months we treated 130 patients with 2nd^o burns (superficial and deep) with Suprathel®, a porous synthetic copolymer membrane made of DL-lactide. It is biodegradable and creates a wound PH of 4-6 during degradation. In this physiologic skin PH environment most microorganisms do not thrive. Patients were taken to the operating room. Wound bed preparation was achieved by dermabrasion or hydrodissection or thin Weck blade excision. Suprathel® was applied after hemostasis and an outer dressing of fatty gauze, bridal veil, absorptive gauze and ace wrap was applied. The outer dressing was removed on day one. The wound bed was followed through the translucent Suprathel® and fat gauze layers. The dressing separated spontaneously after epithelialization was complete.

Results: All wounds in this series healed without grafting. Our infection rate was <1%. Time to epithelialization was accelerated compared to similar wounds that received daily dressing changes and wounds that were placed in Biobrane® or allograft (some in the same patient). No integration into wound beds was noted. It appears that repigmentation of the healed burn occurs accelerated. The only complication was severe itching in one adolescent patient.

Conclusions: The application of Suprathel® to 2nd^o wounds offers a new simple option of treatment with potential for better outcomes and less pain. Cost was not calculated, but considering less frequent dressing changes, less pain medication and lower infection rate it can be predicted that cost will be at least equivalent to current standard of care.

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