NEW TECHNIQUES IN VITILIGO SURGERY

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Abstract

Medical treatment+ NB-UVB phototherapy is a very important modality in treating vitiligo but the treatment course usually exceeds 1 year. Different corrective surgical methods have evolved during the last four decades. Various techniques of vitiligo surgery have been improvised and modified to achieve better results. Some of these are: mini punch grafting, basal cell layer suspension, Thin Thiersch's graft, epidermal grafting by suction blister, punch grafting, cultured melanocyte grafting, grafting of cultured epidermis, autografting, and PUVA, transplantation of autologous cultured melanocytes, single hair transplant, ultrathin epidermal sheets and mini grafting and NB-UVB. Mini punch grafting (PG) is the easiest, fastest, least aggressive, and a technique with minimal expenses. Suji and Hamada in 1983 used therapeutic spot dermabrasion for stable vitiligo. The technique of spot therapeutic wounding was further extended by using needling, phenol, trichloroacetic acid, cryosurgery, carbon dioxide laser.

Skin ablation with mechanical dermabrasion with 5Fluorouracil (5FU) was introduced to treat vitiligo in 1983. This was modified replacing the mechanical dermabrasion by erbium-YAG (ER:YAG) laser ablation for non-segmental vitiligo, periungual vitiligo, by Dr. Anbar, 2009.

Purpose of the study to develop a new modality for treating vitiligo. Calcineurin inhibitors (tacrolimus, pimecrolimus) are some of the newest topical drugs in dermatology. However, tacrolimus and pimecrolimus are effective only in vitiligo lesions on the head and neck region. The main difficulty with topical calcineurin inhibitors, and one that is probably responsible for lack of efficacy in non-facial vitiligo, is their high molecular weight. This precludes efficient delivery of the drug at the level of the basal cells, since the stratum corneum allows very poor absorption of any molecules over "500Da" in weight. This has recently been proved by an elegant study where greatly enhanced repigmentation with pimecrolimus was achieved by using it after performing microdermabrasion on the lesional skin. So in this study we used Co2 laser, +pimecrolimus on the second day so that can substantially increase their effectiveness bypassing the stratum corneum barrier and delivering these drugs in adequate concentration to the melanocytes and keratinocytes.

Methods: This study included 10 adult patients with a total of 68-paired symmetrical NSV lesions in different body parts. Patients were treated with Co2 laser ablation, followed by pimecrolimus application on the second day twice daily for a maximum period of 3 months.

Results: The overall response to therapy was better using this combination therapy. Seven patients (70%) experienced a moderate-marked repigmentation response for the combination therapy. The response was significantly higher than expected by most patients. The response was significantly higher when using the combination therapy in different body parts, except for hand and feet lesions, which were better but not statistically significant.

Tolerable pain during ablation was reported in all cases.

Conclusion: We concluded that prior use of Co2 laser skin ablation, followed by pimecrolimus application for vitiligo is a safe and tolerable technique and is expected to increase patient compliance.