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Er:YAG Laser Resurfacing Using Combined Ablation and Coagulation Modes

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ABSTRACT

Background. The two main laser types used in resurfacing, the CO₂ and the Er:YAG lasers, have their supporters and detractors, and each system has clear advantages and disadvantages.

Objective. The Er:YAG laser can be used in the usual efficient ablative mode, followed by reprogramming to achieve nonablative deeper dermal coagulation associated with the CO₂ laser, thereby achieving the main advantages of both laser types.

Patients and methods. Twenty-three female patients, ages 42–72 yrs, skin types I–IV, were treated. The epidermis was first removed in the ablative settings in a single pass with 50% overlap. The Er:YAG laser was reprogrammed for the subablative mode, and several passes produced controlled residual thermal damage (RTD) without further ablation.

Results. At 2 months postresurfacing the results were assessed. Thirteen patients were rated "very good," eight as "good," and two as "fair."

Conclusion. The dual mode Er:YAG laser can first be used in the ablative mode to remove the epidermis with minimal RTD, following which, in the subablative mode, the same laser induces a controlled layer of dermal RTD, stimulating the dermis to achieve collagenesis and collagen remodeling and giving good long-term results.