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Resurfacing of Different Types of Facial Acne Scar With Short-Pulsed, Variable-Pulsed, and Dual-Mode Er:YAG Laser

Sang-Hyuk Woo, MD^{*}, Jae-Hong Park, MD^{*}, and Young-Chul Kye, MD^{*}

^{*} Department of Dermatology, Korea University Anam Hospital, Seoul, Korea

Address correspondence and reprint requests to: Young-Chul Kye, MD, Department of Dermatology, Korea University Anam Hospital, #126-1, 5-Ka, Anam-dong, Sungbuk-ku, Seoul, 136-705, Korea, or e-mail:

yckye@korea.ac.kr.

ABSTRACT

Background. Laser skin resurfacing has become a popular therapeutic modality for the correction of acne scars, but it is not always effective in all types of acne scars.

Objective. To evaluate the clinical effects of resurfacing with the short-pulsed Er:YAG laser, the variable-pulsed Er:YAG laser, and the dual-mode Er:YAG laser for each type of facial acne scars.

Methods. One hundred fifty-eight patients with facial acne scars were included in this study. Eighty three patients (18 deep boxcar scars, 8 ice-pick scars, 11 rolling scars, and 46 shallow boxcars) were treated with the 350- μ s short-pulsed Er:YAG laser at the setting of 12.5 to 15%/cm². Thirty-five patients (8 deep boxcar scars, 4 ice-pick scars, 12 rolling scars, and 11 shallow boxcars) were treated with the variable-pulsed Er:YAG laser at the setting of 7.0 to 7.5%/cm² and 7-ms pulse duration. Forty patients (8 deep boxcar scars, 4 ice-pick scars, 17 rolling scars, and 11 shallow boxcars) were treated with the dual-mode Er:YAG laser with 350- μ ablation mode at 17.5%/cm² and 8-ms coagulation mode at 3.15%/cm². Facial photographs were obtained at baseline and at 2- to 4-week intervals postoperatively. Acne scars were classified into four types, and clinical improvements of facial acne scars were evaluated.

Results. Resurfacing with the short-pulsed Er:YAG laser shows good to excellent results for ice-pick and shallow boxcar scars, fair to good for deep boxcar scars, and poor to fair for rolling scars. Resurfacing with the variable-pulsed laser shows good to excellent results for ice-pick and shallow boxcar scars, fair to good for deep boxcar scars, and good for rolling scars. Resurfacing with the dual-mode laser shows good to excellent results for ice-pick, shallow, and rolling scars and produced good results on deep boxcar scars.

Conclusion. Shallow boxcar and ice-pick scars can be treated successfully using any types of Er:YAG laser. In cases of rolling and deep boxcar scars, however, Er:YAG laser with a long-pulse duration for a thermal effect is needed for successful treatment.
