

A PILOT STUDY USING A NEW FRACTIONAL INFRARED LASER SOURCE FOR THE TREATMENT OF POST-SURGICAL AND POST-TRAUMATIC SCARS

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BACKGROUND INFORMATION and OBJECTIVE:

Our ability to treat various clinical morphologic post-surgical and post-traumatic scars varies widely from patient to patient. Numerous modalities have been utilized with different degrees of treatment success, including the pulsed dye laser, Erbium:YAG laser, intralesional steroids, intralesional 5-fluorouracil and topical scar remodeling compounds, including silicons, etc. In this study, a variety of post-traumatic and post-surgical scars were evaluated utilizing a new 1540nm fractional infrared device, the Star Lux™ fractional 1540 (Palomar, Burlington, MA). This device is a coherently filtered infrared laser that produces columns of damage of varying microscopic depth and density in the dermis to stimulate collagen remodeling with contact cooling to maintain an intact epidermis. The purpose of this study was to determine specifically if fractional resurfacing of scars with this particular device could produce clinical improvement in a variety of scar types.

STUDY DESIGN/MATERIALS/METHODS:

Fifteen patients with post-traumatic scars and fifteen patients with post-surgical scars evaluated in this study. Morphologic varieties of scars included erythematous hypertrophic scars, white hypertrophic scars, atrophic splayed scars and hypopigmented scars. Patients received 5 fractional laser treatments to their scars at 3-4 week intervals. Treatments were performed with the 10mm handpiece, utilizing 10ms pulse duration and 35-50mJ/mb. Patient scars were assessed with photographs prior to and at the end of the study. Improvement in scar parameters evaluated included change of height, erythema, induration, and hypo- or hyperpigmentation. Results were graded by an independent observer and patient global satisfaction scores.

RESULTS:

Patients tolerated the procedure extremely well with no complications with the exception of minor crusting in a few treated scars. Mild post-operative pinkness and swelling of scars were noted for 1-3 postoperative days. Patients noted improvement in some parameters, including height of scar and pliability after even 1 treatment session, whereas pigmentary changes were slower to improve and often with progressive changes noted up to and after 5 treatment sessions. Results were graded by both an independent observer and patients 3-6 months after the first treatment session. There was good agreement between blinded observer and patient assessment, with both results in the 40-60% improvement range.

CONCLUSION:

Use of Palomar's fractional 1540 device provides a safe predictable treatment for all varieties of post-traumatic and post-surgical scars.