Dermal Undermining (Scarification) of Active Rhytids and Scars: Enhancing the Results of CO₂ Laser Skin Resurfacing

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Active and passive rhytids develop as part of the aging process. Active rhytids become more prominent with facial animation. Efficacy of CO₂ laser resurfacing for active rhytids is enhanced by scarifying beneath the active rhytid before resurfacing. Scarification can be performed with a sterile hypodermic needle.

As with other resurfacing techniques, CO₂ laser resurfacing causes a controlled cutaneous injury.¹ As the injury heals, the treated skin contracts, reducing the appearance of rhytids or scars² (Figure 1). Histologic study seems to confirm my personal experience that the results of treatment are related to total energy delivered to tissue.³ Comparable results are obtained whether energy is delivered as multiple passes or as a single pass. Debris from char-free resurfacing does not need to be removed. Erythema, pain, and swelling are decreased if the resurfacing debris is left intact (Figure 2, A).

In areas such as active rhytids or scars, where the skin is tightly attached to the mimetic muscles, the results of resurfacing are less predictable. The technique illustrated here helps to enhance results in these areas.

Technique

With the patient in an upright sitting position, active rhytids (or scars) are marked (Figures 3, A and B, and 4, A and B). After establishment of satisfactory anesthesia, the marked areas are scarified in the subdermal plane with a hypodermic needle (18 to 20 gauge) (Figure 3, C). Typically, scarification is continued until resistance to the needle's passage is reduced. For early active rhytids (or scars), the “1½ pass” technique is applied. The undermined active rhytid is treated with the highest planned energy (Figure 4, C). The full pass treats the entire aesthetic unit. For deeper rhytids, the entire aesthetic unit can be treated in 2 full passes.

I have used a flash scanned system¹ at energies up to 90 J/cm² in a single pass; with up to 105 J/cm² total energy delivered (first pass 45 J/cm²; second pass 30 J/cm²; third pass 30 J/cm²) when treating acne scars (FeatherTouch³, three passes of 30 J/cm² [120 W] or

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This work received no outside funding.

Accepted for publication Dec. 30, 1997.

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199-820X/98/$5.00 + 0

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SilkTouch™, 1 pass of 90 J/cm² [120 W]). The laser resurfacing technique must be tailored to the patient’s needs and the surgeon’s experience.

Results

Scarring enhancement of treated active rhytids and scars (Figure 1). Continued improvement can be observed for 3 to 6 months after treatment (Figure 2). For some patients, retreatment or addition of fill material (fat, collagen, etc.) may be helpful.

The treatment parameters illustrated here are based on the author’s personal experience. Individual patient selection, skin quality, perioperative treatment, and the type of laser equipment used can affect patient results.

References

