By Daniel J. Leeman, M.D.

DETAILS

Nonsurgical Periorbital Rejuvenation

A combination of fractional CO_2 laser resurfacing and botulinum toxin injections can lift sagging lids and improve fine lines without incisions.

These combined modalities produce outstanding results with minimal downtime of three to five days.

Using state-of-the-art fractional CO_2 resurfacing technology in combination with botulinum toxin injections, I have been able to offer eyelid rejuvenation that produces a refreshed periorbital complex without surgery. These combined modalities produce outstanding results with minimal downtime of three to five days.

For this procedure, I use the Smartxide DOT CO_2 laser (DEKA Medical, dottherapy.com). This particular device allows me to vary the power, dwell time, spacing and dot pattern of ablation to meet each patient's individual needs. The DOT laser features an advanced computer pattern generator to produce microablative zones in a dot pattern with untreated skin interspersed to speed healing. Users can vary the depth of the microablative zones by increasing or decreasing the dwell time and power. Spacing between the microablative zones can also be adjusted based on the patient's skin type and condition. The laser offers up to 30 watts of power with a cleaver handpiece. Buttons on the handpiece allow me to change the dot pattern—rectangle, triangle, hexagon, parallelogram or line—dot size and ratio on the fly without recalibration. The spot size is 350μ and maximal scanning area is 20mm x 20mm.

The depth of penetration of the microablative zones is 60μ to 330μ. The depth of penetration for the microthermal zones is 90μ to 950μ. This variability allows me to effectively customize each procedure to the needs of the patient. The untreated areas and lack of confluent epidermal thermal damage, enables the unaffected hair follicle stem cells and fibroblasts to aid in rapid post-procedure healing and collagen remolding.

Patient Selection

Ideal candidates for this procedure are middle-aged men and women with moderate brow ptosis, minimal dermatochalasis of the lids and minimal to moderate crow's feet. Fitzpatrick skin types I-IV can be safely treated. Patients with more severe eyelid aging who do not want to undergo surgery are also excellent candidates for this procedure provided realistic expectations are managed during the initial consultation. Unlike fully ablative CO_2 resurfacing, it is not necessary to pretreat the skin with hydroquinone or Retin-A.

Procedure Protocol

Dysport (Medicis Aesthetics, dysportusa.com) is the recently FDA-approved abobotulinumtoxinA for glabellar liners and cervical dystonia. It is used in nonsurgical periorbital

rejuvenation to soften the crow's feet area and produce brow elevation. I typically use between 50 units and 70 units of Dysport to achieve excellent aesthetic results. I reconstitute the Dysport with 3cc of preservative-free saline. For the brow elevation I perform two injections per side—one in the tail of the brow, the second I place by identifying the lateral limbus and following that straight up, placing the Dysport at the inferior margin of the brow hairs. Treatment of the crow's feet involves placing four to five injections of five units of Dysport per injection. These injections are all performed prior to fractional CO_2 laser resurfacing.

diazepam (Valium) for sedation. During the procedure, I use the Zimmer chiller (zimmerchillers.com) to maximize comfort. No nerve blocks are necessary. I prep the skin by cleansing the face to remove any unabsorbed topical numbing cream. I also use acetone to help dehydrate and degrease the skin to ensure maximal absorption of the CO_2 laser energy.

Following the procedure the patient's skin is cooled with wet towels that have been soaking in an ice bath. I hand the patient the Zimmer chiller to hold so she can direct the cold air wherever she feels she needs it most. It takes about 10 minutes to 20 minutes for the patient to cool down enough to apply post-treatment ointment. I use Procyte CU_3 Intensive Tissue Repair Creme (procyte.com). I also recommend that the patient continue post-procedure skin care with Neocutis Bio-Serum (neocutis.com) starting two days after treatment. The patient is given a prescription for Medrol Dose Pack to help reduce eyelid swelling (which occurs in less than 50% of these cases). Most patients are able to apply makeup by post-op day three and have complete resolution of redness by day five. I schedule follow-up appointments in the office at one week, four weeks and three months post procedure. One of the most exciting aspects of this procedure is the continued improvement we see over the next three months.

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Following the injections, I perform the Smartxide DOT fractional resurfacing. The typical settings are 25 watts with a dwell time of 1200 microseconds and spacing of 400μ. I will vary these settings depending on the depth of the crow's feet and amount of dermatochalasis. The patient wears laser-safe contact lenses so I can treat the entire periorbital area including the upper and lower lids right up to the eyelashes. I also cover the entire crow's feet area until I reach the temporal hair. I use the rectangular dot pattern and will often make a second pass right on the crow's feet using the parallelogram-shaped dot pattern.

Pain Management and Post-Procedure Care

Patients tolerate this procedure very well and are extremely satisfied with the results and the rapid recovery. To ensure patient comfort I apply 4% lidocaine topical cream 30 minutes prior to the procedure and administer

Adverse Events

I have not experienced any permanent complications with this procedure. Risks include infection, scarring and pigmentation changes. I did have one case of hyperpigmentation in a checkerboard pattern in the crow's feet area that required topical hydroquinone to resolve and two cases of prolonged erythema that lasted 10 days.

The combination of fractional CO_2 resurfacing and botulinum toxin injections addresses brow ptosis, dermatochalasis and mild to moderate crow's feet.

In summary, if you are looking for a nonsurgical, in-office procedure to rejuvenate the periorbital area, this is my procedure of choice due to excellent, predictable results; high patient satisfaction; short treatment time; and minimal down time.

Daniel Leeman, MD, is the medical director of New U Plastic Surgery in Austin, Texas. He is board certified by the American Board of Facial Plastic & Reconstructive Surgery and the American Board of Otolaryngology/Head & Neck Surgery.