Chemical Peels for Facial Rejuvenation

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Chemical peeling is an underutilized but powerful procedure for improving the surface, texture, and color of photoaged skin. Benefits include a long-standing safety and efficacy profile and relative ease to learn and perform. The procedure can be tailored to the problem, and chemical peels are inexpensive in relation to the technological gadgetry popular in contemporary cosmetic surgery. A key component to successful peeling is proper patient and indication selection. Chemical peeling works best for treatment of fine lines, dyschromia, rough texture or actinic keratoses, and superficial acne scarring. Patients with fair complexions and light-colored hair and eyes are generally easier to peel with less risk of pigmentary change. Patients with dark complexion and brown hair and eyes have a greater risk of postoperative hyperpigmentation.

One of the greatest uses of chemical peels is in combination with other procedures such as botulinum toxin or laser resurfacing. While botulinum toxin inhibits movement of specific muscles and softens rhytides, a chemical peel helps to further improve the remaining fine lines or wrinkles (Fig. 163.1a, b). With laser resurfacing I prefer to use an erbium:YAG laser to resurface deeper lines in the periorbital and perioral areas preceded by a medium-depth chemical peel over the rest of the face (always peel *before* laser resurfacing, not after). I use the precision of the laser to reach specific depths while improving milder photoaged changes over the entire face. A combined approach avoids demarcation between laser and non-laser areas.

Some of the pearls that I have found useful in chemical peels:

1. Preoperative treatment with tretinoin. A more even and deeper peel is accomplished, healing is quickened, milia are minimized, and the effects of bleaching agents are augmented. All patients use sunscreen before and after peels, and patients with a higher risk of postoperative hyperpigmentation should use bleaching agents (e.g., hydroquinone). Place all patients on valacyclovir or acyclovir prior to a medium-depth chemical peel to decrease the risk of herpes simplex infection.
2. Avoid patients at higher risk of delayed wound healing or scarring, including patients who received Accutane in the last 12 months. Other higher risk individuals include patients on corticosteroids, immunosuppressed patients, patients with unrealistic expectations, and smokers. Avoid a medium-depth peel over surgically undermined areas (e.g., rhytidectomy) for at least 6 months.
3. Purchase chemical peel supplies from medical supply organizations rather than your local pharmacy to avoid any problems or discrepancy in the concentration of the acids used. (Concentrations are weight-to-volume.)

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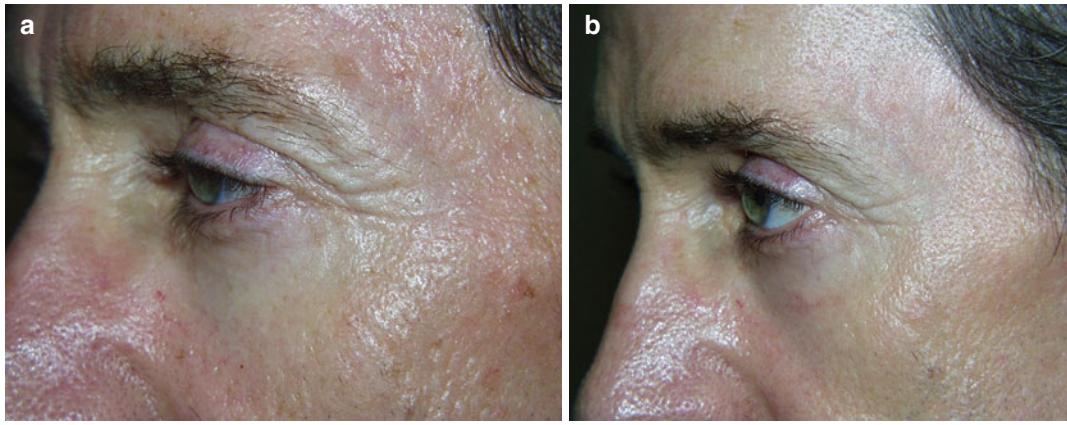

Fig. 163.1 (**a**) Male patient with actinic damage, moderate dyschromia, and coarse periorbital rhytides before treatment. (**b**) Patient after treatment with botulinum toxin to soften periorbital rhytides and medium-depth chemical peel to improve dyschromia, actinic damage, tone, and texture of skin

4. Medium-depth chemical peels are usually accomplished using a combination of Jessner's solution or glycolic acid followed by 35 % trichloroacetic acid (TCA). Concentrations of TCA greater than 40 % have an unpredictable risk of delayed wound healing or scarring. Cleanse and degrease the skin with acetone before applying a single coat of Jessner's solution with gauze pads. After the Jessner's solution is dried, 35 % trichloroacetic acid is applied with cotton-tip applicators or gauze pads to give an even, light frost. When using glycolic acid apply 50–70 % glycolic acid and leave on for 2 min. If the patient complains of significant burning, shorten the application time and neutralize the glycolic acid with tap water. After neutralization at 2 min or less, the area is toweled dry and 35 % TCA is applied for an even frost. For deeper rhytides or areas with greater sun damage apply additional TCA to get a deeper, whiter frost. Cool, wet compresses and a hand-held fan are used to comfort the patient after the TCA has dried and frost appeared.
5. Many patients could tolerate the procedure without any anesthesia, but most patients will receive Vicodin and possibly Valium 30 min preoperatively.
6. Edema of the treated area is common for the first 48 h and can be minimized by head elevation and nonsteroidal anti-inflammatory drugs. Wound care consists of skin hydration via liberal application of water to the treated areas. Acetic acid compresses (one tablespoon to one pint lukewarm water) twice daily help decrease the risk of bacterial infection. Once peeling of the skin begins, a bland ointment, such as Aquaphor, is applied several times daily to keep the area moist and speed reepithelialization. Remember, to speed healing keep the area clean and moist! Once healed, the patient starts a noncomedogenic sunscreen and sun-protective measures and may restart tretinoin and hydroquinone.
7. Patients are seen frequently in the postoperative period and are instructed to return for any symptoms suggestive of an infection, delayed wound healing, scarring, or pigmentary problem. An early sign of herpes simplex infection is increasing pain beginning a few days after a peel. One of the earliest signs of a scar is persistent erythema and pruritus. It is much easier to treat complications of chemical peeling at an early stage.
8. I frequently use medium and superficial chemical peels. A series of superficial peels (e.g., glycolic, salicylic, Jessner's, or low-concentration TCA) is well suited for younger patients with fine lines and dyschromia. Medium-depth peels work best for older patients with more extensive actinic damage. For severe actinic damage and deep

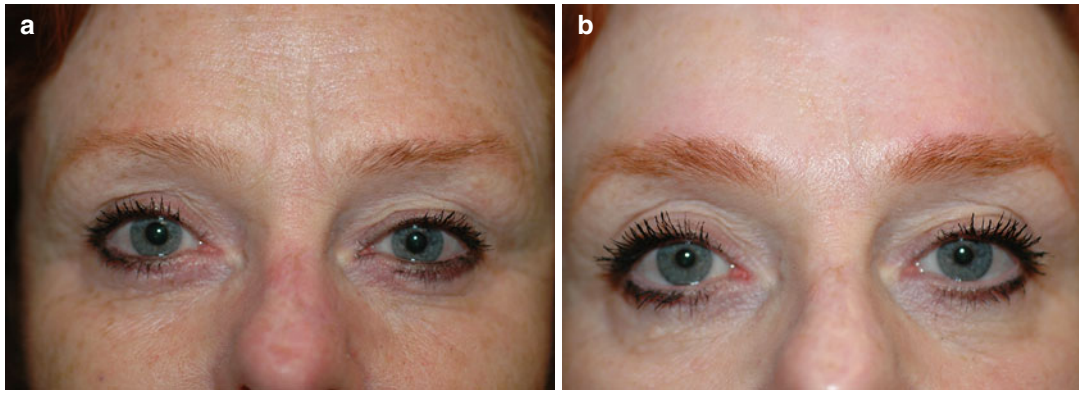

Fig. 163.2 (**a**) Female patient with Fitzpatrick type I skin (fair skin, hair, eye color that sunburns with sun exposure) before treatment of lentigines with medium-depth peel. (**b**) Significant improvement in lentigines and actinic damage following medium-depth chemical peel

rhytides, I prefer to use a laser rather than deep or phenol peels. While one can cause permanent hypopigmentation with a resurfacing laser (especially carbon dioxide lasers), I feel that I have better control over the depth of injury using a resurfacing laser (i.e., erbium:YAG laser).

9. One final pearl is to start out with more superficial peels and ideal patients (blond or red hair, blue eyes, light complexion) (Fig. 163.2a, b). Develop a sense of comfort and build upon your experience before performing deeper peels or dealing with patients at greater risk of pigmentary alteration.