

60 Trichloroacetic Acid Peel

Rod J. Rohrich and Erez Dayan

Abstract

Trichloroacetic acid (TCA) is a versatile agent, efficacious in treating a spectrum of facial rhytides and dyschromias at varying concentrations. TCA is commonly used in a 30 to 35% concentration to achieve a medium-depth peel into the upper reticular dermis. The addition of Jessner's solution before the TCA peel application leads to partial removal of epidermis, allowing for deeper penetration of the TCA. This combination is beneficial, as lower concentrations of TCA can be used for the same depth of peel, minimizing complications such as scarring.

Keywords: Chemical peel, TCA, trichloroacetic acid, Jessner's, skin resurfacing

Key Points

- Addition of Jessner's solution to 35% trichloroacetic acid (TCA) improves quality and consistency of the peel while allowing for less TCA to be used for a given effect.
- Preprocedure skin prep is important to avoid complications and optimize results.
- Always ring out gauze or cotton-tip applicators with TCA on it to prevent adverse events.
- Number of passes and pressure are both related to depth of peel.
- Continuously assess color changes to determine depth and efficacy of peel.

60.1 Preoperative Steps

- Consultation with the patient should be used to establish realistic goals and expectations as well as to educate the patient on important perioperative care instructions for optimal results. A careful history and physical examination allow the clinician to determine the patients' candidacy (► Table 60.1).
- Our preference is to pretreat all patients for 4 to 6 weeks before chemical peeling. This regimen includes topical tretinoin (0.05–0.1%), hydroquinone (2–4%), sunscreen, and alpha hydroxyl acid (4–10%). Pretreatment improves skin tolerance, regulates fibroblast and melanocyte function, improves dermal circulation, and allows for the treated skin to heal 3 to 4 days faster due to increased cellular division and new collagen formation. Modifications to this preprocedure regimen (dosages and application intervals) are made as needed based on tolerance and skin types. A week before peel, patients are started on a cleansing and toning protocol and are encouraged to maintain adequate hydration and moisture of the skin.
- Acyclovir is initiated 2 days before chemical peel and continued 5 days after the peel in patients with prior history of herpetic lesions.

- Setup is clearly labeled glasses ordered from left to right in the appropriate sequence of usage. The glasses are filled by the practitioner with: (1) 70% ethyl alcohol, (2) acetone, (3) Jessner's solution, and (4) 35% TCA solution.
- In our practice the Jessner's solution is premixed by a pharmacist and contains 100 mg of 95% ethanol, 14 g of resorcinol, 14 g of salicylic acid, and 14 mL of lactic acid. Also, available on this table are 2 × 2 gauze and cotton-tip applicators.

60.2 Operative Steps

- The patient's skin is anesthetized approximately 40 to 60 minutes preprocedure with topical anesthetic (lidocaine/prilocaine cream).
- The procedure begins with cleansing of the skin using a 2 × 2 gauze soaked in 70% ethyl alcohol. Next, acetone is applied in a similar manner as a degreasing agent.
- Jessner's solution is then applied after the skin is air dry to exfoliate and peel the stratum corneum of the epidermis. The depth of the Jessner's peel is controlled by the number of applications. One to four layers of Jessner's solution is applied to the face with the endpoint being uniform areas of erythema with slight areas of frost.
- After the Jessner application is complete, 35% TCA solution is applied. The application of Jessner's solution and TCA is similar, 2 × 2 gauze is saturated and wrung out to avoid any dripping. A three-finger technique is used to allow for a wide and consistent surface area to be covered. A cotton-tip applicator wrung with TCA is used to treat rhytides in the periorbital and perioral region. The skin in these areas is stretched to allow for the peel to reach the bottom of the rhytides. The wooden end of the cotton-tip applicator can be used for selective application of the peel for deeper rhytides. The margin of the area being peeled (typically mandibular border) is lightly feathered to allow for a natural and inconspicuous transition.

Table 60.1 Indications and contraindications for the use of chemical peel

Indications for chemical peel	Contraindications
Superficial or deep rhytides/ photoaging	Isotretinoin therapy within last 6 months
Preneoplastic or neoplastic lesions (i.e., actinic keratosis and lentiginos)	Absence of pilosebaceous units on face
Underlying skin disease (i.e., acne)	Infection or open wounds (herpes and open acne cysts)
Pigmentary dyschromias	Medium or deep resurfacing procedure within 3 to 12 months
	Recent facial surgery involving undermining
	History of therapeutic radiation exposure
	Fitzpatrick skin types IV, V, and VI

Trichloroacetic Acid Peel



Fig. 60.1 (a, b) A 56-year-old female with notable fine and mild facial rhytides and actinic changes who underwent a lift-and-fill facelift with trichloroacetic acid (TCA) chemical peel. Chemical peel was performed at the completion of the operation following the four-step method: Alcohol, Acetone, Jessner's Solution, and TCA Peel. Postoperative images show the improvement in the patient's fine rhytides, skin tone, and dyschromias.

60.3 Postoperative Care

- Once the peel is complete a thin layer of Bactroban ointment is applied to the treatment areas.
- The patients are instructed not to moisturize the area, as this will impede desired sloughing.
- Typically, 7 to 10 days are needed for skin to slough and re-epithelialize. Dermal regeneration takes up to 6 weeks. Patients may wash their faces daily without scrubbing for the first 3 days. They are instructed to pat the area dry with a soft towel.
- Cold compresses and anxiolytics are used to minimize discomfort and oral narcotics may be used as needed. All patients are given 24 hours of prophylactic antibiotics. Once the skin re-epithelializes (7–10 days) the aforementioned preprocedure regimen is restarted.

60.4 Case Example

A 56-year-old female with notable fine and mild facial rhytides and actinic changes who underwent a lift-and-fill facelift with TCA chemical peel. Chemical peel was performed at the completion of the operation following the four-step method: Alcohol, Acetone, Jessner's Solution, and TCA Peel. Postoperative

images show the improvement in the patient's fine rhytides, skin tone, and dyschromias (► Fig. 60.1a, b).

60.5 Conclusion

In select patients, combination of Jessner's solution with 35% TCA solution allows for a safe and effective resurfacing of moderate facial rhytides and dyschromias. Preprocedure and post-procedure skin care in addition to systemic application of the chemical peel optimizes results while minimizing potential complications.

See **Video 60.1**.

Further Readings

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