Periocular Skin Reshaping by CO2 Laser Coagulation

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Abstract. When blepharoplasty is performed by transconjunctival route, sometimes the excess of skin created by over laxness of the lower lid does not retract to achieve the desired cosmetic result. We propose a method for controlled retraction of the eyelid by coagulating the skin using the CO2 laser. Thanks to this approach, the lower eyelid’s tone recovers and the desired cosmetic appearance is achieved. Results of 37 patients that were treated by 10 W CO2 laser, 5-mm defocused beam diameter, and pulses of 100 ms, are presented. Follow-up shows that periocular skin reshaping by CO2 laser for laxened eyelid is a safe method and it can be considered a good alternative of treatment for blepharochalasis without skin excision.

Key words: Blepharoplasty—Eyelid surgery—CO2 laser—Laser surgery—Aesthetic laser surgery—Aesthetic surgery

When the transconjunctival route is chosen for the surgical approach of lower eyelid blepharoplasty, it sometimes occurs that the aesthetic problem created by the fat bags is not totally solved, due to the excess of skin created by over laxness of the lower lid [2]. In spite of the fact that cicatricial restoration of the surgical wound created by the transconjunctival blepharoplasty plays an important role by creating fibrosis, and, therefore, retraction and reshaping of the lid, the desired cosmetic result is not always achieved. Other situations, as for example, those patients with good muscle tone but with excess skin and severe wrinkling, require other procedures [3] among which could be the one proposed in this article, in some ways similar to the method presented by Baker [1].

Material and Method

A total of 37 Caucasian patients aged 32–59 (mean = 48) underwent transconjunctival lower eyelid blepharoplasty for the removal of the fat bags followed by coagulation of the skin area below both lids.

Patients were sedated under heart monitorization using an intravenous cocktail of phentanyl + midazolone + etomidate, prior to anesthetizing the cornea and conjunctiva with 0.5% tetracaine colirium. At this time, 1.0% lidocaine with epinephrine was injected pointing the needle to the orbital rim. The cornea was covered with the Trelles’ eyeglobal protector [5] to prevent inadvertent injury of the cornea [4] (Fig. 1). Marking of the area below the lower eyelid was done with the patient seated. Definition of the coagulation area is very critical since it helps the surgeon to bear in mind the location of the problem in order not to go too far in the extension of laser coagulation. Below the eyelid and in the temporal direction are areas in which the excess lax skin is usually located. Once elimination of excess fat from the lower eyelids has been achieved, laser coagulation procedure is started using CO2 10 W defocused to 5 mm in diameter, in pulses of 100 ms (Fig. 2).

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Fig. 1. Patient at the time of initiation of lower eyelid reshaping with the laser. Observe that the eye sclera has been adequately protected.
Fig. 2. (A) Caucasian male requiring upper and lower blepharoplasty. Approach of the lower eyelid fat bags is via the by transconjunctival. Excess of skin of the upper eyelid is excised including fat removal from the orbital septum. Notice the very visible malar pad. (B) Results 5 days after surgery. Eyelashes have been refloated. No skin has been extirpated from the lower lids. The lax skin appears peeled and has been stretched by the \( \text{CO}_2 \) reshaping coagulating technique.

Fig. 3. (A) The Kaplan Pendulaser. (B) The Kaplan Pendulaser 115 with the Optoguide.

Fig. 4. Patient submitted to skin reshaping by laser 5 days after treatment. Mild scabs which start to fall off.