Transmucosal and Transcutaneous Combination Treatment of Periorbital Region with Erbium:YAG Laser

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Introduction:

This cases study aims to evaluate the efficacy, safety, and satisfaction of a new treatment for sagging skin, muscles and ligaments of the periorbital region using a transmucous approach with Er:YAG laser as an alternative for patients who do not wish to undergo a surgical procedure.

Wrinkles and sagging around the eyes are a common complaint in the plastic surgery office, however, patients today are seeking less invasive therapies with less downtime and are less inclined to undergo blepharoplasty surgery even with indication.

Laser	SP Dynamis	
	Step 1	**Step 2**
Eye protection	Eyeshield	Eyeshield
Laser Source	2940 nm	2940 nm
Pulse Duration	SMOOTH	SMOOTH
Fluency	2 J/cm^2	1.5 J/cm^2
Frequency	1.8 Hz	2 Hz
Handpiece	PS03	R11
Spot size	5 mm	5 mm
Overlap	yes	no
Passes	Depends on end-point (mucosal hyperemia)	Depends on end-point (dry and tight skin)
Cooling	no	no
Sessions	3 sessions with 1-month intervals	

Ana Carolina Chociai is a Brazilian plastic surgeon with master's degree and a technology enthusiast. She has been developing innovative work with lasers since 2015 and has been teaching cosmiatry specialists since 2016 when she became a speaker in private and postgraduation courses in Brazil.

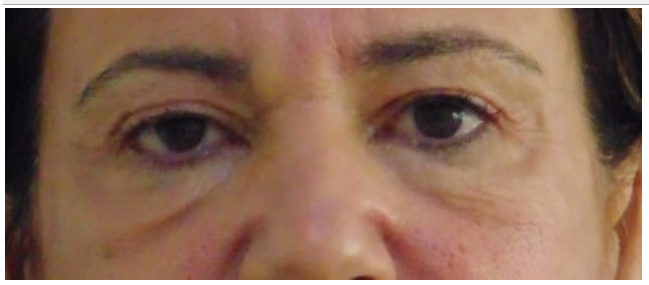
CLINICAL CASE:

The occidental upper eyelid has levator extensions inserting onto the skin surface to define a lid-fold that averages 6–8 mm above the lid margin. The position of the levator-skin linkage and the anteroposterior relationship of the preaponeurotic fat determine the lid-fold height and the degree of sulcus concavity or convexity. In the aging eyelid, the septum becomes attenuated and stretches. The septal extension loosens, and this allows orbital fat to prolapse forward and slide over the levator into an anterior and inferior position. Clinically, this results in an inferior displacement of the levator skin attachments and a low and anterior position of the preaponeurotic fat pad as shown in Figures 1 and 3.

333 laser periorbital treatments were performed on 112 patients from October 2018 through May 2019. 32 men and 80 women were treated with 3 sessions per patient, with photographs taken 1 month after the final session as in Figure 2. We used a hybrid technique of transcutaneous and transmucosal treatment as described in the parameters table. Thirty days after the final treatment, the patients were asked about their satisfaction with the procedure. Their photos were subjected to comparative measurements of the lid-fold distance above the lid margin as shown in figures 3 and 4.

The average patient age was 49.4 years. The average interval between sessions was 32 days. Clinically all patients had eyebrow elevation and eyelid retraction with increased distance between the lid-fold and lid margin. The results were documented by high-definition photography. 93.75% of the patients rated their results as good or excellent, 6.25% rated their results as moderate improvement and none were dissatisfied. There was one case of eye irritation that resolved within 3 days with the use of lubricating eye drops. 35 patients who had previously undergone blepharoplasty, rated their results as excellent.

We conclude that the method of combining transmucosal and transcutaneous laser treatment is highly effective for treatment of the periorbital region. It offers an alternative to surgical treatment while minimizing the number of interventions required in the region.

Before	After
	

Before	After