

Resurfacing with Tru-Pulse Laser – The Ideal Procedure for Dark Skin Individuals

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ABSTRACT

The advent of Ultrapulse CO₂ laser provided plastic surgeons with the opportunity to present their patients with the most simple and efficient treatment for skin lesions, including those from periocular region, periorbital and peribuccal wrinkles and frontal scars. The authors of this work present their experiences in 11 cases of resurfacing using CO₂ laser.

Material and methods used for skin preparation, type of anesthesia as well as a demonstration of how to do resurfacing and which intensity should be used in some cases are described; also, their experience with the exposed dressing, the postoperative and results are reported. Some photos of patients before and after laser application showing a satisfactory result for the physicians and a more pleasant life for the patients are shown on the conclusion.

INTRODUCTION

Despite technical advances, facial plastic surgery was quite deficient for the effective and safe treatment of periorbital, peribuccal and frontal wrinkles, as well as acne sequelae. Peelings present great inconveniences even at expert hands, with the risk of sequelae that vary from hypochromia to scars⁽²⁾; the use of phenol has even caused death of patients due to systemic intoxication, besides the risks of the same sequelae⁽⁹⁾ arising

from the use of other acids.

The advent of Ultrapulse CO₂ laser was the great innovation for the treatment of the areas mentioned^(5, 6) — this is a statement, which we really agree with.

Resurfacing was carried out at the pre, postoperative and immediately after face-lifting or even as single treatment for our patients. Our experience, as well as those

of other authors⁽⁶⁾, is limited to Tru-Pulse laser, even though we admit that other authors have obtained good results with other types of CO₂ laser^(3, 4, 5) as these present less tissue thermal damage, less edema and erythema, less changes to cutaneous color and texture and rapid resolution.

MATERIAL AND METHODS

Our rationale reports treatment of 111 patients, 6 males and 105 females, with ages ranging from 47 to 66 years old. Predominant color was the dark one, Fitzpatrick III to V (Fig. 1); treatment of perioral region prevailed (Fig. 2), since patient's greater complaint rate referred to this area.

SKIN TREATMENT

All patients were submitted to previous skin preparation for 15 to 45 days (Table I) and also to supplemental treatment starting at the 30th postoperative day, for 30 days (Table II). Laser was associated to other techniques when patients presented flaccidity, deep wrinkles and/or depressions (Fig. 3).

Patients that presented great potential for allergy, spots caused by insect sting, use of isotetrinoine, emotional instability or those who have not followed postoperative care were withdrawn. Special attention was given to those patients with herpes history, all of them being prophylactically medicated

ANESTHESIA

Local anesthesia was the method of choice for all patients and the drug for infiltration was 0.5% lidocaine with epinephrine at 1:200,000 associated to regional blockade.

Sedation was carried out by anesthesiologists from our team with the use of phentanyl, demerol and midazolam endovenous solutions in patients submitted to full-resurfacing and in those for whom the process was associated to face-lifting. The experience in maintaining a stable narcosis threshold turned the use of oxygen therapy unnecessary, so interruption of laser application was not required.

RESURFACING

Face regions, as well as deep wrinkles were marked and those regions with variable intensity and fre-

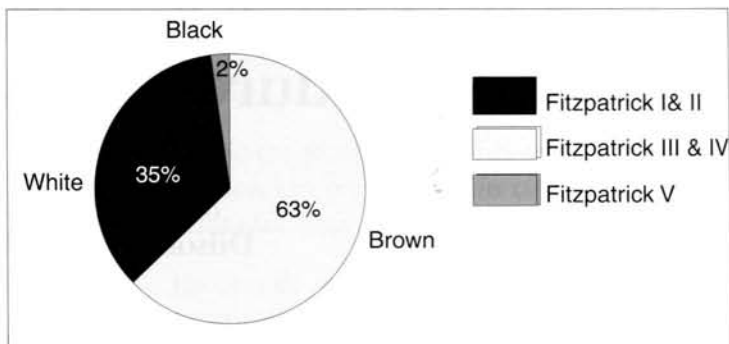


Fig. 1 - 65% of the patients is Fitzpatrick III to V.
Fig. 1 - 65% dos pacientes são Fitzpatrick III a V.

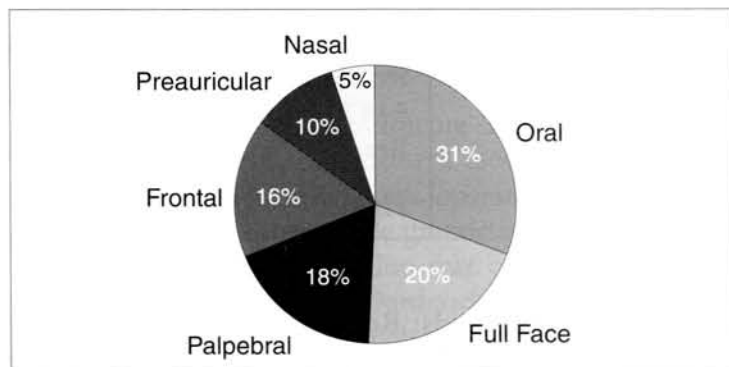


Fig. 2 - Major demand is patients with wrinkles at oral region.
Fig. 2 - A maior demanda são pacientes com rugas na região oral.

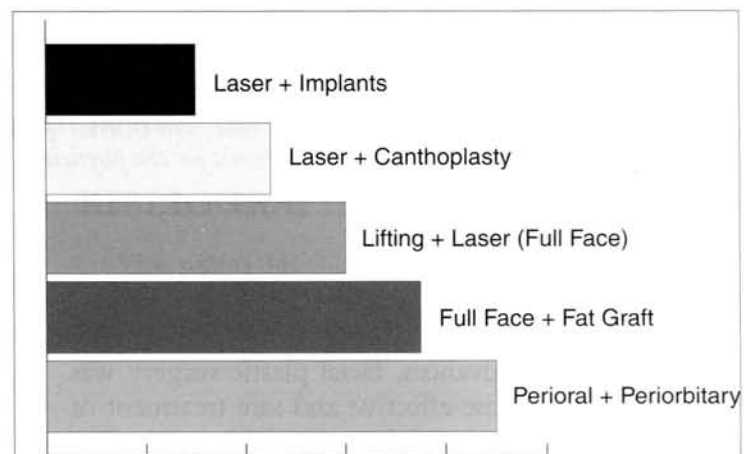


Fig. 3 - The use of laser has been associated to techniques such as implants, cantoplasties, cervical lifting, face lifting and others.
Fig. 3 - O uso de laser esteve associado a técnicas como implantes, cantoplastias, lifting cervical, face lifting e outros.

quency according to cutaneous thickness were scanned in order to facilitate the procedure. The changes in the amount of scanner passing varied according to cutaneous thickness. The application of 300 millijoules in two passing at lower eyelid region was generally sufficient. 300 millijoules were applied in two passing at malar region; 400 to 500 millijoules twice or three times at labial region and 500 millijoules with a total of two or three passing and four to six passing at the top of the deeper wrinkles. Two to four passing were made at frontal region with 500-millijoule intensity, the same occurring in upper maxillary regions and mentum.

Note: For all patients submitted to full-resurfacing, we carried out a degradê of about 2 centimeters at the cervical region boundaries (scanning with skin spacing).

DRESSING

After washing the face with physiological saline, the

operated areas were covered with healing cream with antibiotic - 0.5% Clostebol Acetate + 0.5% Neomycin sulfate - the so-called Semi-Open Dressing (Fig. 4), and the patient was removed to room with the prescription of anti-inflammatory, analgesics, oral antibiotic and rest, and the instruction to continue treatment with an antiviral. All the patients were discharged from hospital after a one or two hour rest when submitted to laser therapy only.

The patients were instructed to keep the face always covered with the cream - 0.5% Clostebol Acetate + 0.5% Neomycin Sulfate -, and the face should be washed upon our supervision at the 3rd P.O. (Fig. 4), when the use of an hydrating lotion with sun filter and 5% Dexpantenol was initiated. Patient return to his or her activities in general occurred at the 10th P.O., and the patient was asked to return weekly to consultation. Second protocol, with which pigmentation is avoided, was determined to start at the 30th P.O.

curativo pós-cirúrgico



Fig. 4 - At immediate postoperative we used exposed dressing with healing cream.

Fig. 4 - No pós-operatório imediato usamos curativo exposto, com creme cicatrizante.

Table I

Protocol I – Skin Clarifying					
	Glycolic acid	Retinoic acid	Hydroquinone	Hours	Days
III	10%	0.03%	3%	2	15
IV	12%	0.08%	4%	3	30
V	15%	0.10%	6%	4	45

The darker the skin is, the greater the glycolic and retinoic acid and hydroquinone concentrations beyond the time of use and hours/day will be at postoperative.

Table II

Protocol II - Suppression of pigmentation						
	Glycolic acid	Retinoic acid	Hydroquinone	Hours	Days	P. O.
III	6%	0.03%	3%	30	30	30
IV	8%	0.05%	3%	30	30	30
V	10%	0.08%	3%	30	30	30

After the 30th postoperative day we used one concentration of hydroquinone and different acid concentrations for all skin types.

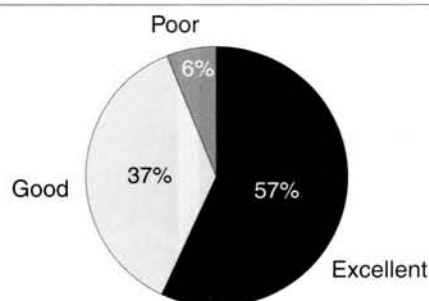


Fig. 5 - Erythema disappears after 45 postoperative days. 94% of satisfactory results were obtained in a 18 month follow-up.

Fig. 5 - Com 45 dias de pós-operatório desaparece o eritema. Obtivemos 94% de resultados satisfatórios em 18 meses de follow-up.

DISCUSSION AND CONCLUSION

We would like to make a critical evaluation of this work initially speaking about the fear we felt till we managed to precisely handle the intensity and the number of laser passing required for each area. The option for Exposed Semi-Open dressing with a thick layer of cream has been satisfactory. The formation of small crusts that were eliminated in about four days

with facial bathes, petrolatum and the use of acetic acid were not a problem for us. The special attention given to lower eyelid treatment avoided sclera-show or ectropion and we concluded that the test performed to verify tarsal tension and prophylactic contoplasty would be the best procedure when required. We also observed that skin retraction after laser passing at labial region made it more graceful and, in some cases, the association to implants was the ideal upgrade to get a more harmonized mouth contour.

An outstanding joviality was obtained at frontal region where a supplemental treatment of muscle hypertrophy with botuline toxin and synthetic implant for the deeper wrinkles were carried out.

Small exeresis and deeper lesion sutures were previously performed when required, in order to treat acne sequelae with laser, which greatly facilitated the skin leveling for laser use.

Finally, we would like to state that the least tissue traumatism, the more precise removal of skin layers, the absence of ecchymosis, less post-operative pain and patient recovery speed were the factors that have stimulated us to proceed with the Ultrapulse CO₂ laser treatment.

RESULTS

The evaluation of treatment efficacy taking into consideration the great patient satisfaction, the safety to treat hyperpigmentation, the persistence of erythema for minimal time (always less than 45 days) and the absence of hypopigmentation in all cases led us to excellent results in 57% of the areas treated in a 12-to-18 month follow-up (Fig. 5).

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Figs. 6a & 6b - Patient S.N., 54 years old, preoperative and one-year postoperative. We used four 500 millijoule passing of Tru-Pulse laser on the whole face except for orbital region where the energy was 250 millijoules.

Figs. 6a e 6b - Paciente S.N., de 54 anos, pré e pós-operatório de um ano. Usamos quatro passadas de 500 milijoules em toda a face com o Tru-Pulse Laser, exceto na região orbitária, onde a energia foi de 250 milijoules.



Figs. 7a & 7b - Patient M.I.A, 49 years old, preoperative and six-month postoperative, the laser being associated to cervical lifting.

Figs. 7a e 7b - Paciente M.I.A, 49 anos, pré e pós-operatório de seis meses, o laser tendo sido associado ao lifting cervical.



Figs. 7c & 7d - Patient M.I.A, 49 years old, preoperative and six-month postoperative, laser has been associated to cervical lifting.

Figs. 7c e 7d - Paciente M.I.A, 49 anos, pré e pós-operatório de seis meses, o laser tendo sido associado ao lifting cervical.

Figs. 8a & 8b - Patient I.C., 50 years old, face, Fitzpatrick IV with sun keratosis. Preoperative and 60-day postoperative.

Figs. 8a e 8b - Paciente I.C., 50 anos, face, Fitzpatrick IV com queratoses solar. Pré e pós-operatório de 60 dias.

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