Combination Therapies for Dyschromia and Peri-Orbital Wrinkles – a Case Report

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INTRODUCTION

The study and practical application of light/tissue interaction has been in use for more than three decades. Medical aesthetic technology is rapidly evolving in an attempt to maintain the balance between scientific advances and consumer demand. Advances have been introduced to laser and light systems in the past decade using longer wavelengths and transitional pulse durations. In addition, the introduction of pharmaceuticals, fillers and Botulinum Toxin Type A – used simultaneously with photon therapy, can offer an accelerated and longer lasting result for patients.[1,2]

The inherent capabilities and limitations of each product on the market, its service requirements, as well as any on-going expenses should be well understood by the physician prior to investing in any aesthetic system. Purchasing a product that has not been adequately researched may result in the long term possession of a system that is not in demand, or is not upgradeable or sufficiently flexible to provide appropriate return on the initial investment.

For our practice, the focus is on multi-tasking and upgradeable systems, as they have become the best tool for both the expanding or established cosmetic practice. These systems have also provided the opportunity for my practice to offer an additional benefit called "Combination Therapy". With appropriate training and experience, it is possible to form an alliance between safety and efficacy through the combination of various technologies, injectables and pharmaceuticals, which result in a superior endpoint that can be realized in less time. This case report will review the author's experience with multiple combined therapies provided at a single treatment which yielded superior results utilizing the Harmony system (Alma Lasers, Ft. Lauderdale, Florida). The Harmony platform has a variety of wavelength modules including the 540nm and 570nm AFT (Advanced Florescence Technology) pulsed light, and long pulsed Nd:YAG handpieces. We also provide microdermabrasion and Dysport (botulinum toxin A) in our combination therapy for periorbital treatment.

CASE STUDY

The patient (identified as HRC) was a 42 year old female with a history of cosmetic treatment including Dysport (12 months since last injection) and prior periorbital surgery (Blepheroplasty) which was performed 26 months prior to our treatment by another practice. The patient was seeking to reduce both the dyschromia and Type 1-3 rhytids, predominately the result of sun damage. We discussed the alternatives available including combination therapy (taking into consideration the amount of downtime and follow-up that would be required for each alternative). The patient also considered surgical correction with or without light therapy. Based upon the specific patient goals at this time, combination therapy provided the best opportunity for repair without extended downtime and could be maintained with routine follow-up. Along with appropriate training and experience with the various components of treatment, it is vital to select patients carefully, and to set the correct expectations in order to achieve a greater likelihood of success. This case study represents one application of this combination therapy from many examples of patients who have been treated with full patient satisfaction, having experienced no adverse reactions and minimal to no disruption in their daily routine.

TREATMENT PROTOCOL

The patient completed a consent form and provided a detailed historical profile to eliminate the potential for contraindications to each of the therapies chosen. The skin was cleansed and photographed with a Canfield Digital S4 camera (including the Mirror protection software that prohibits photograph alterations). Topical anesthesia was applied to the patient for 30 minutes (and then removed) to control any potential discomfort. During the treatment, we utilized the Zimmer forced air system (directs cold [3-5ºC] forced air at the treatment site). The cold air provides additional protection to the epidermis and further protects the patient from any potential discomfort. Disposable adhesive laser eye shields were used to protect the patient's eyes from multiple light wavelengths.

A light erythema developed which subsided within a few minutes. We replaced the thin layer of gel and followed the 540nm handpiece with 2 passes around the eyes with the 570nm handpiece at 15 J/cm^2 and pulse duration of 15msec, (the 570nm wavelength provides treatment to slightly deeper pigmented and vascular lesion targets).

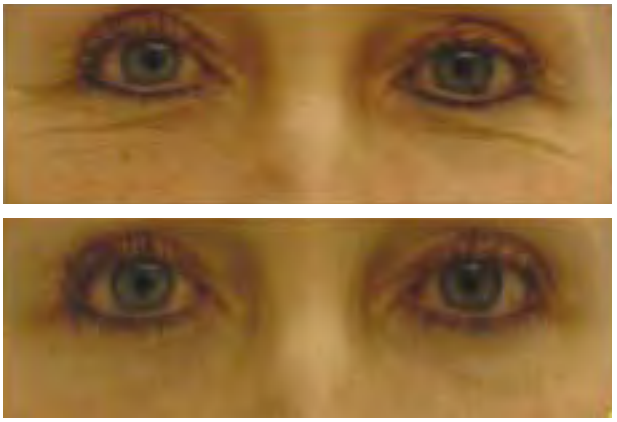
The 4th step was treatment with the long pulse Nd:YAG handpiece (6mm spot size) along each of the Fitzpatrick grade 2 and 3 wrinkles at 60 J/cm^2 with a pulse duration of 60 msec to heat the dermis & stimulate the production of collagen. Caution was used at all times not to use light based systems within the orbit. Treatment of the lower lid was accomplished by manual traction of the lower lid over the orbital ridge where laser pulses may be applied safely. Dysport was then injected to relax the remaining static and dynamic wrinkles. The face was cleaned and cooling was continued for up to 5 minutes. The procedure was completed in less than 30 minutes and the patient was provided post treatment guidelines. Transient erythema is common as well as some mild post treatment edema. Both transient side effects typically return to normal within a few hours or up to two days. The patient was allowed to continue normal activity with the notation that sun exposure should be limited and accompanied with sunblock (>SPF 35). Contact was made the next day to check on skin reactions and to schedule the patient for a follow-up visit in 3-5 weeks. Maintenance was expected to be a follow-up treatment at 6 months. However, we have patients that are well over the 12 month mark without the need for additional treatment.

Treatment Protocol

Step	Application	Biological target	End-point
1	Microdermabrasion	Stratum cornium	Erythema
2	AFT 540 nm handpiece	RBC, Hgb	Coagulation
3	AFT 570 nm handpiece	Melanosomes	Rupture
4	Nd:YAG (1064 nm) handpiece	Collagen, water	Erythema
5	Dysport	Wrinkles	Relaxation

SUMMARY

The decision to utilize combination therapy has been most satisfactory both for our patients and for our practice. Combination therapy, whether relying solely on a combination of light-based devices or a synergistic combination of light-based therapy and the use of topical agents or pharmaceuticals, is proving to be effective for an expanding list of clinical indications. Currently our office is studying the impact which prior blephroplasty treatment may have on combination therapy and we will continue to follow patients to determine the long term endurance of this combination treatment.



Before (above) and After one treatment session (below)

Bibliography

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