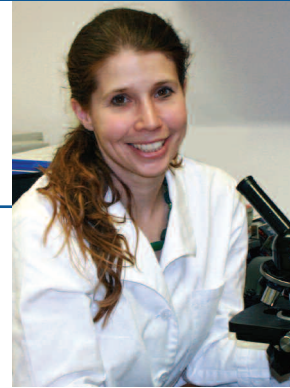


Skin Tightening* and Combination Therapy with GentleYAG®

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The 1064 nm GentleYAG can be used to treat the side effects of collagen loss in the face and body and is well complemented by common methods for removal of light-induced skin aging in aesthetic dermatology, thereby producing a synergistic effect. Furthermore, it is demonstrated that an equivalent result can be achieved by reducing the treatment intervals from four weeks to one week, as described in previous case studies.

Introduction

Laser-based skin-tightening procedures have recently gained in popularity. Noninvasive skin tightening is characterized as an efficient, low-risk procedure that enables patients to spend only limited time away from their professional and social life and therefore also decreases indirect costs. The decisive factor for patients, however, is the possibility of undergoing a face-lift without the need for a scalpel. Selective heating of the collagen coating results in the contraction of the skin followed by collagen neogenesis—an effect that may be visible as early as eight weeks to four to six months after the treatment. Combination therapy may be used to help further improve and accelerate the results, thereby increasing the compliance and satisfaction of the patients.

Method

One and a half to two hours before treatment, the patients received a local anesthetic mask in occlusion and were required to repeatedly apply a local anesthetic EMLA cream (5% Lidocaine-Prilocaine mixture) every 15 to 20 minutes during this period. As a result, there was a considerable reduction in pain and improved moisture penetration of the skin, the hydrated skin being able to absorb greater heat from the GentleYAG.

The collagen was intended to be heated to 65°C. Three laser sessions with the 1064 nm GentleYAG were carried out each week using three different positions (horizontal, vertical, diagonal). The set up involved a spot size diameter of 12 mm, energy of 40 J/cm², pulse duration of 30 ms and Dynamic Cooling Device™ (DCD™) at 40/20/0. A revitalization treatment was possible as an option after six or 12 months of treatment. Photo documentation was taken at the beginning and at eight weeks after the end of therapy.

Results

The first patient was 72 years old at the time of treatment, and was at least 25 years over the ideal treatment age (between the ages of 40 and 50 the collagen coating is still thick). Three treatments at 12 mm, 40 J/cm², 30 ms and 40/20/0 DCD were carried out initially and at two months and nine months (Figures 1 and 2) after the end of the therapy and were documented with a photo. The cheeks and neck area had tightened. In addition, there was an increase of the skin turgor, which is not visible in the photo, and the patient was very satisfied.

The second patient was 64 years old and was suffering from a loss of skin tension in the upper arm area. Further on, chronic light damage was visible on the multiple lentiginos with skin type II and xerosis cutis, this region being particularly difficult to treat. Three treatments at 12 mm, 40 J/cm², 30 ms, and 40/20/0 DCD were carried out and an additional 8% fruit acid treatment was applied locally in the evenings. A photo at the beginning and at seven weeks after the end of the therapy (Figure 3) display significant improvement. The patient herself was subjective regarding the change.



Discussion

A consensus is yet to be reached on the ideal time interval for the treatments. Personal experience makes it apparent that a single treatment shows no clear tightening effect, and thus three treatments are intended. If individual treatments are separated by a period of one week, a clear stimulus with a corresponding reaction in the collagen coating is achieved. A shorter interval of two to three days is too soon because edema formation leads to excessive absorption and heat generation in the dermis and subcutis. It is also observed that edema reactivity and the sensation of pain increase from the first treatment to the third treatment. In order not to damage the newly formed collagen coating, larger treatment intervals were not chosen.

A new area of application for the low-dose Retin-A[®] acid therapy¹ is visible collagen neogenesis and the reduction of photoaging. On one hand, there is an increased sensitivity toward light; however, the protective action of the Retin-A acid may be intentionally used in the light therapy in order to prevent neoplasias of the skin caused by light. The combined effect of collagen neogenesis with the simultaneous and subsequent use of the GentleYAG skin-tightening procedure is conceivable but requires further investigation.

Botulinum Toxin A is used for the reduction of mimic-conditioned wrinkles and leads to the temporary weakening and paralysis of the muscular system. Subsequently, it can be used to align the collagen fibers during the tightening procedure Nd:YAG. Relaxation occurs after approximately three days and lasts for the required waiting period of three months.

Due to the nature of the gel and its water-binding capacity, fillers such as stabilized hyaluronic acid should only be injected after skin tightening has been performed. These help to reduce the waiting time following the tightening procedure in order to achieve a rapidly visible effect.

Topical retinoids and fruit acid lead to a reduction of the epidermis and the repair of chronic light damage (pigment displacement). In studies, Tretinoin, Isotretinoin and Tazarotene have been shown to prevent photodamage². Regeneration of the lipid layer and an increase in the moisture content of the skin occur when the corresponding galenics are applied.

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*Tightening by reduction of wrinkles.

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Figure 1 - Patient A after first treatment.



After two treatments.

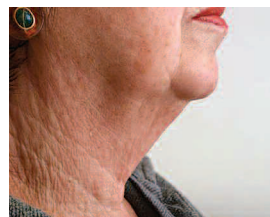


Figure 2 - Seven weeks post final treatment.



Nine months post final treatment.



Figure 3 - Patient B pretreatment.



Two months post-treatment.

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