Clinical and confocal microscopy evaluation with 1340nm nonablative fractional laser for the treatment of striae distensae.

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Introduction

Striae distensae (SD) is a common dermatologic entity. Several treatment modalities have been attempted for SD, including light and laser sources, which have become increasingly popular because of promising results. Its effectiveness is based on the ability to produce energy that selectively acts on target chromophores, in addition to increase the amount of collagen and elastic fibers.

Objective

To assess the clinical evolution, safety, and documentation of the synthesis of new collagen fibers using confocal microscopy (CM), after nonablative fractional laser therapy in the treatment of abdominal cutaneous striae in patients with Fitzpatrick I-VI skin type.

Materials and Methods

Fifteen patients between 15 and 55 years old, suffering from SD, were randomly selected from Department of Dermatology. Exclusion criteria were the history of keloid scarring, pregnancy, use of anticoagulants, and any infectious disease at the site of application. Patients were treated with 1340 nm Nd:Yap nonablative fractional laser. They received three laser treatments at 4-week intervals using the same parameters. Punch biopsy skin samples were taken from the striae site before treatment and 4 weeks after the final laser treatment.

Excised skin was fixed in 10% formalin and after, using CM, images were acquired and analyzed. In addition, clinical images with digital photographs were taken at baseline and 4 weeks after the final treatment.

Results

Of the 15 enrolled patients, 10 completed the treatment. The patients ranged in age from 17 to 44 years and all of them were females. CM revealed increased collagen density in 7 of the 10 patients (image 1). In global photographs all patients have improved exemplified in image 2 . There was no significant long-lasting adverse effect except for transient mild erythema and pigmentation.

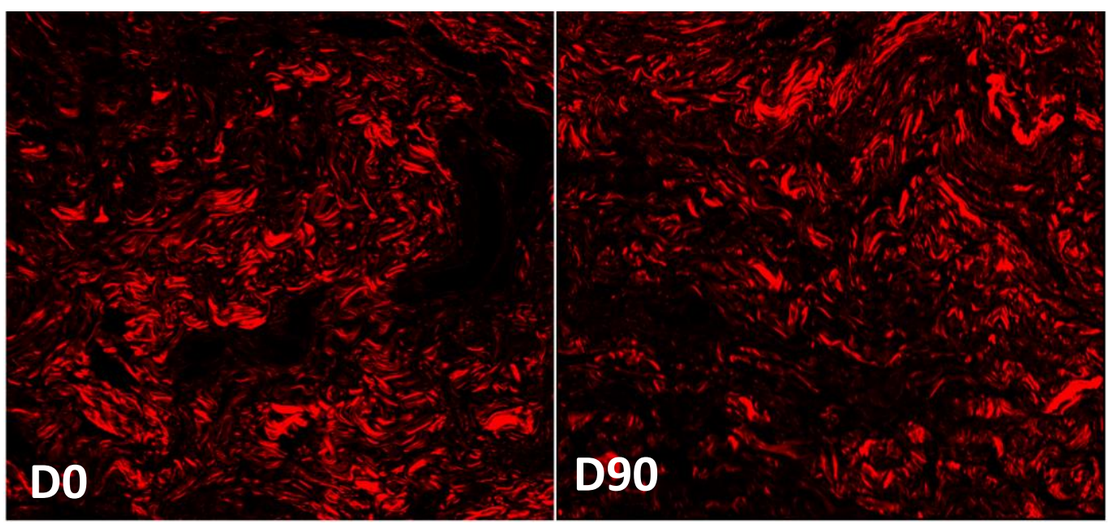

Image 1 Collagen fibres density seen in confocal microscopy before and after treatment in same patient

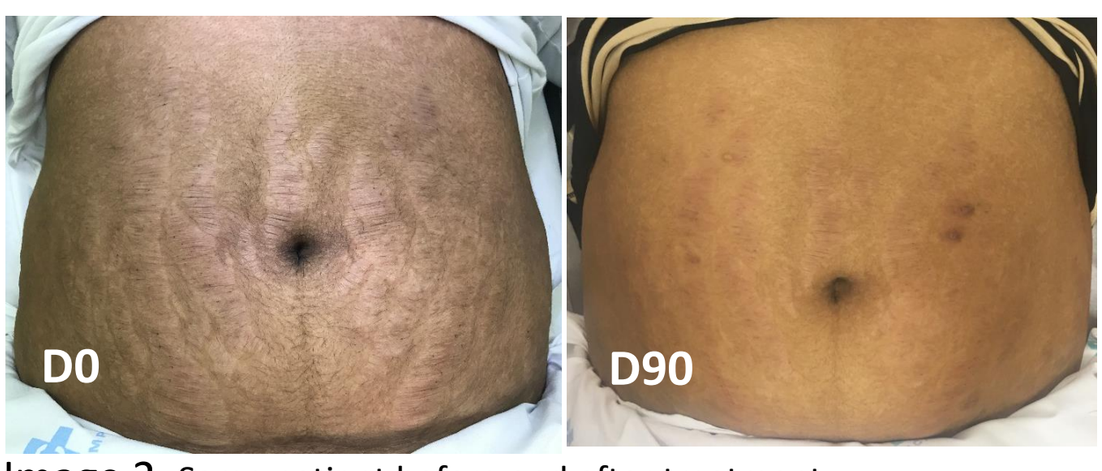

Image 2 Same patient before and after treatment

Conclusions

This study, to our knowledge, is the first study using 1340nm Nd:Yap in the treatment of stretch marks, and the clinical photos and CM showed efficacy.