



Maria Cristina Mansur, M.D.

GentleLASE® Treatment of Ephelides (Freckles)

Maria Cristina Mansur, M.D.
Medical Director, Department of
Dermatology Centro Científico de
Medicina Cutânea—MG;
Professor, Universidade Federal de
Juiz de Fora—MG, Brazil

Introduction

Ephelides, or freckles, are epidermal-pigmented lesions common in exposure areas. Freckles are often difficult to treat, as patients tend to re-freckle with additional sun exposure. Freckles typically respond to Q-switched laser treatments; but considering that longer wavelength lasers for hair removal also target epidermal melanin, it is supposed that hair removal lasers would also be effective in treating these superficial skin lesions.

Method

Case 1 – Patient skin type I Fitzpatrick with freckles on the face. Two laser treatments were made at monthly intervals, using a 12 mm spot size at a fluence 25 J/cm², 755 nm wavelength, 3 ms pulse durations, and Dynamic Cooling Device™ (DCD™) of 40/60.

Case 2 – Patient skin type II Fitzpatrick with freckles on the upper back. Previous attempts to treat with cryotherapy produced unsatisfactory results. Three laser treatments were made at monthly intervals, using a 12 mm spot size at a fluence 20 J/cm², and DCD of 40/60.

In both cases, the GentleLASE alexandrite laser from Candela was used with the DCD.

Results

The ephelides (freckles) darkened in color immediately after treatment and scaled off in a week, resulting in significant clinical improvement. The postapplication photos were made two months following the last application. The patients were instructed to use sunscreen protection (of at least SPF factor 30) while avoiding exposure to the sun in general. No pain was reported after the treatments. Only patients with Fitzpatrick skin type I-II were treated. The lack of post-inflammatory hyperchromy was probably due to the lighter skin types being treated.

Discussion

Immediate, ablative photothermolysis of pigmented lesions occurs with Q-Switched lasers (nanosecond pulses). However, lasers with longer wavelengths are also eventually effective in treating these types of lesions, most probably because the target is more the melanocyte versus the melanosome, which is the Q-switched laser's target.

Greater efficacy was observed using the GentleLASE's smaller spot sizes, as a laser's energy is not introduced as deeply into skin tissue as spot size decreases.



There are many cost-benefits by treating ephelides with longer wavelength lasers, especially if they are already on-site and being used to treat other applications. Treating freckles is another example of the versatility of the GentleLASE laser from Candela.

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Figure 1—Case 1 pretreatment



Figure 2—Case 1 post-treatment



Figure 3—Case 2 Pretreatment



Figure 4—Case 2 post-treatment

Candela Corporation
530 Boston Post Road
Wayland, MA 01778, USA
Phone: (508) 358-7637
Fax: (508) 358-5569
Toll Free: (800) 821-2013
www.candelalaser.com



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