



Treatment of Post-inflammatory Hyperpigmentation with a combination of QS Nd:YAG Laser and long-pulse Accelera Mode

Wong Yeut Sun, MD

Introduction:

A 45-year-old female patient with Fitzpatrick skin type IV was accidentally splashed by cooking oil two weeks earlier while frying fish in the kitchen. As a result, she ended up having a burn wound over her right cheek, which later turned into post-inflammatory hyperpigmentation as shown in the first picture. Q-switched 1064 nm Nd:YAG laser was used to lighten the lesion.

Laser	QX MAX (Q-Switched Nd:YAG 1064 nm)	
	Step 1	Step 2
Wavelength	Nd:YAG (1064 nm)	Nd:YAG (1064 nm)
Handpiece	R28	R28
Fluence	3 and 1.5 J/cm ²	100 J/cm ²
Mode	Q-Switched	Accelera
Frequency	10 Hz	1 Hz
Passes	multiple passes	1 pass
Spot size	4 and 7 mm	2 mm
Endpoint	darkening of pigmentation	erythema
Anesthesia	cool air	
Sessions	5 sessions at 1-month intervals	



Dr. Wong Yeut Sun completed his medical training at the National Defense Medical Center in Taipei, Taiwan in 2011. From 2011 to 2013 he performed internships in the Dermatology Department of Tainan ChiMei Hospital and the Plastic Surgery Dept. of Taipei Veteran General Hospital. After working as a Medical Officer at the Sungai Buloh and Tawau hospitals, he began his current position in 2017 as an aesthetic physician in the Davinci Clinic at the National Taiwan University Hospital in Taipei.

CLINICAL CASE:

Low-fluence Q-switched mode was combined with Accelera mode to treat the post-inflammatory hyperpigmentation. As shown in the table, the settings were mild; the purpose of the settings was to treat the lesion effectively while having the fewest complications in a darker skin type. The deeper skin layer was first targeted with the following settings: spot size 7 mm, fluence 1.5 J/cm², frequency 10 Hz, followed by the superficial skin layer with settings: spot size 4 mm, fluence 3.0 J/cm², frequency 10 Hz. In this treatment, multiple passes were needed in order to effectively reduce the hyperpigmentation. Darkening of the pigmentation was observed as an endpoint for the first step. After a 5-minute interval, the treatment was finished off with Accelera mode with high peak power in order to reduce the vascular component of the lesion.

As for the anesthesia, cold air was used during the first step. According to the patient, the treatment was tolerable and the pain score during the treatment was 1-2 out of 10. No cold air was used for the second step. The patient felt a pricking sensation during the shots of the laser, however, it was still tolerable.

Moisturizer, recovery cream and sunscreen were applied each time after the treatment. The patient was advised to avoid long periods of sun exposure.

A total of 5 treatments at 1-month intervals were done. The patient was satisfied with the result after the 3rd session. No complications were observed.



Published by the Laser and Health Academy. All rights reserved. © 2020

Disclaimer: The intent of this Laser and Health Academy publication is to facilitate an exchange of information on the views, research results, and clinical experiences within the medical laser community. The contents of this publication are the sole responsibility of the authors and may not in any circumstances be regarded as official product information by the medical equipment manufacturers. When in doubt please check with the manufacturers whether a specific product or application has been approved or cleared to be marketed and sold in your country.

