Rosacea and Melasma Treatment with Combination of Picosecond and Long-Pulsed Nd:YAG Laser

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Introduction:

This patient was a 49-year-old female with Fitzpatrick skin type IV who presented with rosacea and vascular melasma. According to the patient, the pigmentation worsened over the past few years as she had more exposure to UV during travelling. Furthermore, she had been experiencing dryness and flaking of skin intermittently due to existing rosacea. In this case, treatment with laser was used and no other concurrent oral or topical medications were given.

Laser	SP Dynamis	StarWalker PQX		
	Step 1	**Step 2**	**Step 3**	**Step 4**
Wavelength	Nd:YAG (1064 nm)	Nd:YAG (1064 nm)	Nd:YAG (1064 nm)	Nd:YAG (1064 nm)
Handpiece	R33	Black F5	Black	Black
Mode	FRAC 3	Pico	Pico	Pico
Pulse duration	0.6 ms	300 ps	300 ps	300 ps
Spot size	6 mm	5x5 mm	10 mm	4 mm
Fluence	15 J/cm^2	5 mJ/px	0.20 J/cm^2	1.2 J/cm^2
Frequency	3 Hz	10 Hz	10 Hz	10 Hz
Pass	1 pass	Multiple passes	Multiple passes	Multiple passes
Endpoint	Mild erythema	Mild erythema	-	-
Anesthesia	Numbing cream and cold air			
Sessions	1 session for rosacea and melasma, 1 additional session for rosacea			

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:

The first step of the treatment was to target the rosacea area by using the R33-T handpiece with spot size 6 mm, fluence 15 J/cm^2 and frequency 3 Hz. One pass was done with no overlapping. The purpose of this step was to reduce vascular structure and control inflammation.

The second step was to target the whole face using the PQX and Black F5 handpiece with a fluence of 5 mJ/px. Multiple passes were done and the end point was mild redness. This was followed by the third step using the Black handpiece with a spot size 10 mm and fluence of 0.20 J/cm^2 for multiple passes. This step was to target dermal pigment with the largest spot size. No endpoint was noted due to the PQX mainly treating pigment by photomechanical action.

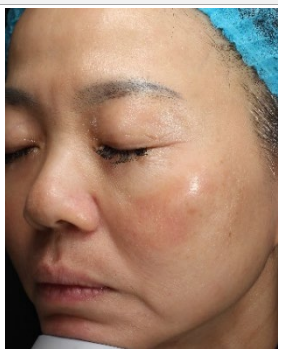
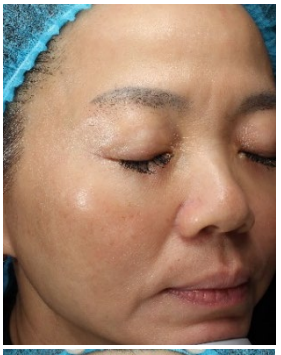
The last step was to perform skin toning by using a 4 mm spot size with the PQX Black handpiece. A fluence of 1.2 J/cm^2 was used and multiple passes were done. As with the previous step, there was no visible endpoint noted.

Moisturizer and sunscreen were applied to patient after treatment. Advice for patient was to avoid long periods or extreme sun exposure.

The patient came back for treatment once a month and pictures were taken as shown above. It was clearly shown that the brown pigmentation of melasma was lightened significantly with just one session of this combination protocol, leaving redness as part of rosacea. The rosacea was then lightened as well with subsequent laser treatment with no recurrence.

The first step for rosacea was using the SP Dynamis R33-T handpiece with 3mm spot size, VERSA mode, 45J/cm^2, 25ms pulse duration and 3Hz. 1 pass over rosacea area was done with no overlapping and cold air was applied during this step. The second step is to use R33-T 6mm spot size, FRAC 3 mode, 15J/cm^2, 0.6ms pulse duration and 3Hz. 2 passes were done with cold air as well. No complication was observed.

This demonstrated that the combination of picosecond and long-pulsed Nd:YAG laser is a safe and effective method to treat complicated case such as melasma with rosacea.

Before	After one month	After 3 months
		
		
		

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