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New Protocol for Long-term Results in Melasma Treatments with Nd:YAG Laser Multi-pulse Skin Conditioning Approach

Drs. Sebastián and Julio Cesar Velez Ocampo

Parameters:

Laser source:	StarWalker - Nd:YAG (1064 nm)			
	Step 1	Step 2	Step 3	Step 4
Pulse mode:	Q-switched MaQX 1	FRAC3 0.3-0.6 ms	Fractional QS MaQX 1	VERSA 0.6–10 ms
Fluence:	1-3.5 J/cm ²	10-20 J/cm ²	7-14 mJ/px	160-210 J/cm ²
Frequency:	4 Hz	3 Hz	3 Hz	1 Hz
Handpiece:	R28d	R28d	FS20Ad	R28d
Spot size:	4-7 mm	4 mm	9x9 mm	2 mm
Passes:	4-6	4-10	2-3	1
Tx interval:	4 to 8 sessions every 2 weeks			
Cooling:	Yes			

Treatment procedure:

Melasma is a complex condition that has been difficult to treat, with improvements only sustainable for short periods of time. We have implemented a multifactorial approach that not only treats the symptoms but mainly addresses the underlying cause of melasma.

The first step applies Q-s Nd:YAG with MaQX1, which delivers a subcellular photoacoustic effect oriented to the destruction of melanosomes and fragmentation of dermal melanin. The applied fluence depends on the degree of pigmentation and the patient's phototype; the higher the pigmentation, the lower the fluence. Application should be stopped when erythema or edema are present. Passes should be homogeneous, non-stacking with either a horizontal, vertical or crisscross application.

The second step uses low-fluence, short FRAC3 pulses to achieve a reduction in the production of cytokines and control of the inherent inflammation in melasma, as well as the inhibition of VEGF – Vascular Endothelial Growth Factors. Passes should be performed in the same manner as step 1.

The third step requires the use of a fractional Q-s handpiece with the purpose to stimulate the exchange of keratinocytes and provide non-thermal rejuvenation of the tissue. One pass is applied on the full face and 2-3 extra passes on the affected areas.

The fourth step is applied when vascular lesions are visible at 4X magnification.

Post-op requires cooling and epithelizing cream immediately after the treatment. Erythema should be expected to last between 2 and 5 days. Small scabs can last between 2 and 7 days. Bariderm or Cicalfate cream should be applied 3 times per day for 7 days. Avoid any sun exposure and use sunscreen protection starting the day after treatment. Topical treatments can be started 2-3 days after treatment.

The following pictures show a typical case with 9 months follow up on a patient that has received only laser treatment (6 sessions) and no hydroquinone or Tranexamic acid.



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Top three photos: before the treatment; bottom three: 9 months after treatment