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Treatment of Scar Contracture with a Combination of Fractional Er:YAG and Madecassol® 1% Cream

Dr. Ivan Peev

Parameters:

Laser source:	Nd:YAG	Er:YAG	Er:YAG
Pulse duration:	1.6 ms	LP	SP
Fluence:	35 J/cm ²	95 J/cm ²	5-8 J/cm ²
Frequency:	3.6	T6	7
Handpiece:	R33	FS01	R11
Spot size	4 mm	-	2-3 mm
Cooling	Zimmer 5	-	-

Treatment procedure:

Fractional laser therapy has been used for a range of skin indications, including the treatment of a variety of scars. The technique involves the formation of columnar microscopic thermal wounds that penetrate to a specific depth, depending on the parameters. The adjacent untreated healthy skin becomes a source of viable tissue which triggers re-epithelialization and dermal remodeling processes, with minimal complications (such as hyperpigmentation, infections, etc).

This case presents a 27-year-old female who had traumatic scar at the proximal interphalangeal joint of the fourth finger on the left hand. The scar was a consequence of a laceration wound that was sub optimally sutured, which resulted in the formation of a fibrotic band crossing and contracting the joint. This led to incomplete extension of the finger as well as pain with flexion.

Three procedures with an SP Dynamis laser (Fotona, Slovenia) were performed under nerve-block anesthesia, with parameters used as shown in the table. The treatment consisted of 3 steps. In the first step, 5 passes with Nd:YAG in Frac3 mode were done over both phalanges and the joint itself until slight redness was noted. Secondly, 3 passes with an FS01 fractional handpiece were performed with an endpoint of pinpoint bleeding. In the final step, the R11 handpiece was used to treat the irregularities of the scar. Immediately after the procedure, Hydrocotyle and Centella asiatica cream (Madecassol® 1%) was applied and covered with a bandage.

After the procedure, crusts are formed that usually fall off in a few days. The patient was encouraged to redress the wound for 3 days after each therapy and apply Madecassol cream in-between the procedures. There was no pain or other significant problems after the treatment. The interval between treatments was 30 days. Improvement of the skin texture was seen 1 month after the first procedure and full extension and flexure of the finger was noted 1 month after the third treatment.

In this particular case, fractional Er:YAG laser was used to produce micro wounds and to enhance drug delivery. We have found that this is the best possible approach in this kind of situation.



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Before scar-revision treatment



4 months after 1st session / 1 month after 3rd session