Clinical Bulletin 28/10

Dr. Jasmina Kozarev, MD

Dr. Kozarev has over fifteen years of experience in dermatology and skin disease treatment. She has performed over 2500 skin laser surgeries. Throughout her career Dr. Kozarev has gained a tremendous amount of experience using lasers on a daily basis. Throughout her long-standing cooperation with Fotona she has worked with virtually all of Fotona's laser systems in the aesthetic and surgery range and currently owns the Dualis[SP].

Tattoo Removal with Q-switched 1064 nm Nd:YAG and 532 nm KTP Laser Sources

Dr. Jasmina Kozarev, M.D., Dr. Kozarev Dermatology Laser Clinic

A patient with a Fitzpatrick Skin Type 2 presented with a ladybug tattoo of Kirby-Desai Rank 8. We needed to remove both darker tattoo colors (black, grey), which commonly respond more intensely to laser treatments, and the lighter color (red) which is more complex to remove.

With a Q-switched laser, the optimal laser source for tattoo removal because of its nanosecond pulses with very high peak powers, we preformed a test area. After a few days we evaluated the test spots in order to make sure that there were no adverse effects like scarring or blistering, in which case we would have to assess other treatment options. In this clinical case the test lesion cleared well and we were able to proceed with treating the rest of the tattooed area.

We moved the laser beam across the tattoo, using the wavelengths specified in the Table below for each individual color. The treated area develops raised white spots and the patient experiences a mild stinging sensation across the treated area. The area then takes between 7 and 10 days to heal. After the area had completely healed we allowed the body's natural clearance methods to remove the broken up tattoo ink and waited approximately 6 more weeks before the next treatment. This same general procedure was followed during all subsequent treatments.

Two different wavelengths had to be used for successful removal of this tattoo. The density of the concentration of pigment determines the number of treatments needed. In our case, the tattoo was treated over a series of 4 sessions using the Q-switched Nd:YAG laser at 1064 nm wavelength and a Q-switched KTP laser at 532 nm wavelength. By the fourth session the tattoo had faded significantly.

	Black and grey color	**Red color**
Laser source:	QS Nd:YAG	QS KTP
Wavelength:	1064 nm	532 nm
Spotsize:	4 mm	3 mm
Frequency:	6 – 8 Hz	4 - 5 Hz
Fluence:	3.5 - 4.8 J/cm²	2 - 2.6 J/cm²

Post treatment instructions

After treatment we lubricated the area with vaseline ointment and covered it with a band-aid until the irritated skin soothed, usually in 2-4 days. It is important that the area is kept moist to avoid formation of scabs and scars. We advised the patient use an occlusive cream, which at the same time promotes healing and soothes the skin. Additionally, after treatment the patient can cool the area with cold compressions but not directly on the skin.

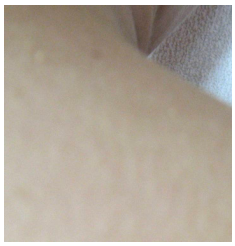
We advised the patient avoid the sun until the area heals completely, because exposure to the sun may lead to hyperpigmentation. The skin healed in approximately two weeks, while fading of the tattoo usually lasts up to eight weeks and reduces approximately 20% less with each treatment.

Q-switched Nd:YAG and KTP lasers are successful in removing the tattoo without scarring, hypo or hyperpigmentation. The final result showed an almost complete clearance of the Tattoo.

Before

After 2 treatments

After 4 treatments



After 8 months

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