



Hard-to-Heal Wounds – an Avoidable Problem

Lasers in the treatment of difficult-to-heal wounds

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Introduction:

The wound healing process is a natural mechanism to repair skin disruption and restore the natural barrier of our body. This process should normally take a few days. When it is prolonged, it can produce a chronic wound, due to healing disorders resulting from various predisposing and extrinsic factors.

Lasers can be a very effective tools in the treatment of hard-to-heal wounds. Laser treatment can keep the wound clean and sanitized, and effectively promote the healing process. Patients are very satisfied.

Laser	Fotona Dynamis SP
Wavelength	1064 nm
Handpiece	R33
Fluence	90–150 J/cm ²
Pulse duration	5 s
Mode	PIANO
Spot size	9 mm
Sessions	2x per week for 4–8 weeks

Igor Madej, MD, PhD, MBA is a specialist in general and oncological surgery and the founder of a successful private practice recognized for outstanding patient care and clinical outcomes. A graduate of the Allergan Medical Institute (AMI), he has advanced expertise in aesthetic and surgical medicine and is committed to lifelong learning through continuous postgraduate education.



Dr. Madej is an experienced educator and mentor, serving for several years as a trainer at AMI and as a lecturer at the prestigious IRCAD institute, where he trains physicians and nurses worldwide. His clinical focus includes safe botulinum toxin treatments, skin quality improvement, and volume restoration using advanced energy-based technologies such as Nd:YAG and Er:YAG lasers. He also practices internationally as a guest physician in Switzerland and Italy and is valued for his comprehensive knowledge and personalized patient care.

CLINICAL CASES:

Patient No. 1

A 75-year-old female with a history of rectal cancer treated with combined pelvic radiotherapy and chemotherapy, extending to the inguinal region, presented with nodal recurrence. She underwent pelvic and inguinal lymph node dissection, and also had morbid obesity.

Implementation of second-line chemotherapy was dependent upon on visible wound healing. Conventional treatment options (surgical debridement, negative pressure therapy, antibiotic therapy, specialist dressings, etc.) had been exhausted.

Initial management included local wound swabs with silver ion dressings, debridement of necrosis, oral targeted antibiotics for the first days of the therapy.

The main treatment consisted of using the Fotona SP Dynamis® Nd:YAG laser (1064 nm) in PIANO mode with the R33 handpiece (9 mm), 90–150 J/cm² applied with a brushing technique evenly for the whole area until a temperature of 39°C was reached. Treatments were performed twice weekly for four weeks and continued for an additional four weeks, during which chemotherapy was initiated.

The initial wound	72 hours after the first laser treatment	Second week of laser treatment	Third week of laser treatment	One week after the therapy
				

Patient No. 2

An 18-year-old male treated for recurrent viral warts on the sole of the left foot with cryotherapy (in another facility). He was a healthy, active athlete who wanted to heal quickly and return to his normal activity. Standard treatment options (surgical debridement, local antibiotic therapy, specialist dressings, etc.) had failed to achieve satisfactory resolution.

Treatment: debridement of necrotic tissue, followed by Nd:YAG laser therapy (1064 nm) using the Fotona SP Dynamis® in PIANO mode with the R33 handpiece (9 mm), 90–150 J/cm², applied with a brushing technique evenly over the whole area until a temperature of 39°C was reached. Treatments were performed twice weekly for four weeks and combined with moist wound dressings.

The initial wound	The wound after debridement	72 hours after first laser treatment	The second week of laser therapy	After three weeks of laser treatment	One month after therapy.
					

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