Nd:YAG Laser Therapy for Port Wine Stain – Two Case Reports

Aleksandra Bukvic Sajinovic, MD and Anamaria Pfau Anderluh, MD

Introduction:
Port wine stains are capillary malformations that appear as red or purple macules, papules, or plaques on the skin and are typically present at birth. They are often located on the face; however, they can occur on other parts of the body as well. Histological features include blood vessel abnormalities within the affected skin, with dilated and ectatic capillaries in the dermis and an increased number of blood vessels. While generally benign, port wine stains may be associated with certain syndromes and can lead to emotional distress or self-esteem issues.
When treating port wine stains, several therapeutic options are available. Each case should be assessed individually, and the most suitable treatment recommended based on factors such as size, location, and severity. Surgical options may be considered, especially for larger or more complex lesions. However, laser therapy remains one of the most common and effective treatments, using focused beams of light to target and eliminate abnormal blood vessels to reduce the appearance of the lesion and improve overall skin texture.

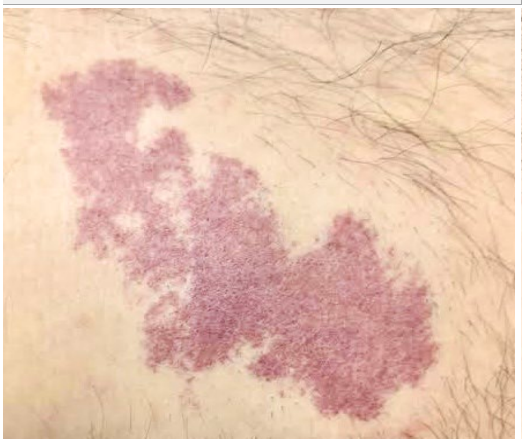
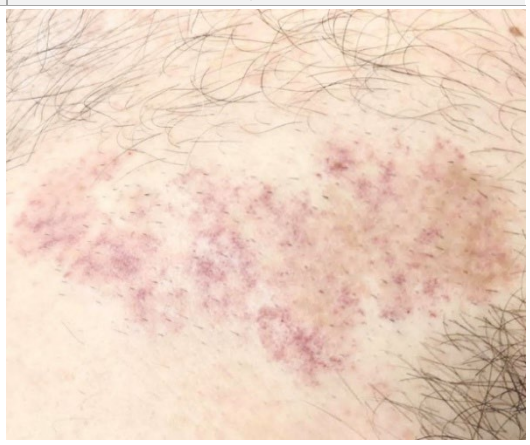
Laser	SP Dynamis	
	Patient 1	**Patient 2**
Wavelength	1064 nm	1064 nm
Handpiece	R33	R33
Spot size	4 mm	4 mm
Fluence	170 J/cm^2	130–150 J/cm^2
Mode / Pulse	VERSA 10–15 ms	VERSA 10-15 ms
Frequency	1 Hz	1 Hz
Air	7–9	7–9
Passes/Repeats	1 pulse/spot, 1 pass	1 pulse/spot, 1 pass
Sessions	1 session per month, 3 sessions in total	

Dr. Anamaria Pfau Anderluh graduated from the Medical Faculty in Novi Sad, Serbia in 2014 and completed her Residency in Dermatovenerology in the University Clinical Centre of Vojvodina in 2019. She began training on laser application in aesthetics and dermatovenerology in 2015 under the guidance of Prof. Dr. Aleksandra Novakov Mikic and Assoc. Prof. Branislava Gajic. As a dermatovenerologist in "Polyclinic Novakov et al" in Novi Sad, she uses laser therapy in everyday practice for many indications – from various skin disease therapies to skin rejuvenation and resurfacing. In recent years, she has been actively involved in training colleagues on the use of lasers at the LA&HA training centre, located in Polyclinic "Novakov et al".

Dr. Aleksandra Bukvic Sajinovic graduated from the Medical Faculty in Novi Sad, Serbia in 2019 and started her Residency in Dermatovenerology in the University Clinical Centre of Vojvodina in 2020. Her particular field of interest is the application of laser therapy in dermatovenerology and aesthetic medicine. As a clinician in Polyclinic "Novakov et al" since 2020, she has been practicing laser therapy for all indications – from hair removal, vascular and benign skin lesions removal, inflammatory skin diseases and podiatry to skin rejuvenation and resurfacing. In 2021, Dr. Bukvic worked on different applications of Fotona's StarWalker under the mentorship of Prof. Dr. L. Marini in Trieste, Italy and introduced Q-switched procedures in everyday practice. She participates in educating medical doctors on the use of Fotona laser systems at the LA&HA training centre, located in Polyclinic "Novakov el al".

CLINICAL CASE:

We present two cases, involving 28- and 45-year-old male patients, with port wine stains located on the trunk, which were treated with Nd:YAG laser. This single-step treatment uses 1064 nm Nd:YAG long VERSA pulses with the parameters shown in the table. No previous skin preparation was needed. Laser shots were delivered without overlapping and the endpoint observed was a dark purple and grey color of the lesion. Fluence and pulse duration were increased if the endpoint was not observed during the treatment. Cold air (Zimmer Cryo 7-9) was used during the procedure to minimize patient discomfort. The patients were encouraged to apply regenerative cream for 7-10 days after the procedure. No adverse effects were observed. Treatments were performed 1 month apart, for a total of 3 sessions. In both cases, the whole lesion was treated in each session. A significant regression of malformations was observed after 3 sessions.

Patient 1 – before	Patient 1 – 10 days after final session
	

Patient 2 – before	Patient 2 – 10 days after final session	Patient 2 – 1 year after final session