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THE COMBINATION OF PULSED DYE AND NEODEMIUM YAG LASERS IN TREATMENT OF NODULAR AND THICK PORT-WINE STAINS

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Background and Objectives: Portwine stains respond quite well to conventional pulsed-dye laser treatment, but often the clearance is difficult to be achieved in thick or nodular lesions. The new Cynergy laser is capable of delivering 585 and 1064 nm simultaneously in the same pulse with short medium or long delay. The pulse-duration of both the wavelengths can be adjusted according to the size of the blood vessels of the lesion. This study was undertaken to determine if the combination of both the wavelengths could improve thick or nodular port-wine stains that is resistant to conventional treatment.
Study Design/Materials and Methods: 20 patients with portwine stains that had failed to improve following at least two consecutive treatments with the conventional 0.5 ms, 595 nm pulsed-dye laser, as assessed by the patient and treating physician, were included in the study. These portwine stains were treated with the Cynergy laser using the Multiplex option with fluence of 7.0 –7.5 J/cm^2 for the Pulsed Dye laser and 60–80 J/cm^2. for the Neodemium YAG Laser with medium delay between the two pulses. Improvement was determined by blinded evaluation of photographs taken before and after final treatment.
Results: Before initiation of the study the average improvement was rated 20% and this was elevated to 70% following an average of 4 treatments with 3–4 weeks interval.
Conclusions: The combination of the Pulsed Dye Laser and the Neodimium YAG lasers improve thick or nodular portwine stains that resistant to conventional pulsed-dye laser treatment.

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TREATING FACIAL TELANGIECTASIA WITH A DUAL WAVELENGTH LASER SYSTEM (595 nm AND 1.064 nm): A SPLIT-FACE TRIAL WITH BLINDED RESPONSE EVALUATION

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Background: The advent of dual wavelength laser systems (Cynergy with Multiplex^{TM}, Cynosure, Inc.) using 595 nm pulsed dye laser (PDL) and 1.064 nm Nd:YAG wavelengths has for the first time allowed both wavelengths to be sequentially emitted from the same handpiece.
Objective: To compare single treatment efficacy of sequential and single application of PDL and Nd:YAG wavelengths in treating nasal telangiectasia.
Study Design/Materials and Methods: A total of 20 patients were treated with sequential application of PDL and Nd:YAG wavelengths on one side of the nose. The other side received PDL or Nd:YAG treatment, respectively. Vessels were treated with a 7 mm spot size at a fluence of 10 J/cm^2, 10 msec with the PDL, followed by the Nd:YAG at a fluence of 70 J/cm^2, 15 msec with a multiplex interpulse delay of 100 msec. Subjects received one treatment, with 4-week follow-up evaluation. Improvement was determined by blinded assessement of photographs taken before and after final evaluation.
Results: The effect of the dual wavelength laser system compared to Nd-YAG and PDL lasers alone is significant higher ($p<0.05$), whereas Nd-YAG and PDL lasers are not significantly different in efficacy.
Conclusions: Combined, sequentially emitted 595 nm and 1.064 nm wavelengths suggest that the synergistic approach to laser therapy for telangiectasia is a superior method of treatment for greatest efficacy and reduced side effects as compared to standard therapy.

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MULTICENTER EVALUATION OF CYNERGY MULTIPLEX LASER TREATMENT OF LEG VEINS

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Background and Objectives: Dual, Sequential wavelength treatment with Pulse Dye [PDL] followed by Nd:YAG lasers (MultiPlex) provides effective treatment of vascular lesions, using lower treatment fluences than either device used individually. This is due to alteration of blood's absorption characteristics by PDL. Leg veins are often resistant to laser, and exhibit higher rates of side effects. This study evaluated efficacy and side-effects of MultiPlex for treatment of leg talangiactasia.
Materials and Methods: A total of 37 patients, presenting with leg veins (0.2–1.5 mm diameter) were treated using the Cynergy laser (Cynosure, Inc). Dosing: Vessels <0.6-mm—PDL 10 msec 7–9 J/cm^2 Medium delay YAG 15msec 50–70 J/cm^2; Vessels >0.6-mm—PDL 40 msec 9–11 J/cm^2 Medium delay YAG 15 msec 50–70 J/cm^2 and SmartCool air cooling (Cynosure, Inc.) with fan speed of 3–6. Treatment endpoint was intravascular coagulation or vessel disappearance. If necessary, subjects received a second treatment 4–6 weeks later. Patients were evaluated 2–3 months after the final treatment. Efficacy was determined by investigators as percent lesion clearance.
Results: Treatments were well tolerated. All subjects and treated lesions exhibited at least 75% vessel clearance in one or two treatments. No subjects exhibited purpura post treatment, and there was no hyperpigmentation or scarring during follow-up.
Conclusions: The MultiPlex feature of the Cynergy laser provides very effective treatment of leg veins. This method avoids complications of laser leg vein treatments including purpura and hyperpigmentation.