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TREATMENT OF RESISTANT CERVICO-FACIAL PORT WINE STAINS USING PALOMAR PULSED LIGHT SYSTEM WITH DUAL-BAND LUXG HAND-PIECE

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Background and Objectives: Recent studies have shown that intense pulsed light can be useful in treating port wine stains that were resistant to previous pulsed dye laser therapy. The aim of this study was to conduct a prospective trial of treating resistant port wine stains with the pulsed light system equipped with the dual-band, optimized, vascular hand-piece.
Study Design/Materials and Methods: Twenty-one patients (15 females and 6 males) with cervico-facial port wine stains with Fitzpatrick skin Types I–IV underwent single treatment with LuxG hand-piece (500–670 & 870–1400 nm spectral range) hand-piece (Medilux™, Palomar Medical Technologies, Inc., Burlington, MA). The lesions were treated with multiple pulses. Follow-up after treatment was 3 months. Results were evaluated by blinded pre- and post-clinical photography and quantitatively by intensity vascular index of videomicroscopy Fotofinder (Teachscreen, Griesbach, Germany).
Results: The mean percent clearance of vessel density was 64% ($p < 0.0001$). No adverse effects were observed. Greying purpura was observed in some patients.
Conclusions: Multiple-pass MediLux LuxG treatment is a safe and effective technique for resistant port wine stains.

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SEQUENTIAL 595 nm, 1064 nm LASER TREATMENT FOR BLEBBED PORTWINE STAINS AND LEG VEINS

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Background and Objective: Laser treatment of vascular lesions with single wavelength lasers aided by cooling and multi-passing techniques is effective for many but not all vascular lesions. Blebbed port wine stains and leg veins pose a special challenge and are not reliably treated with a single wavelength. Last year at this meeting we presented preliminary positive finding on the use of sequential 595 nm and 1064 nm for treatment of a port wine stain with blebs. We expanded this study, further investigating this type of portwine stain as well as leg veins, and appropriate techniques for treatment.
Methods: 10 patients with blebbed port wine stains and 10 patients with telangiectatic leg veins were studied using sequential 595 nm PDL and 1064 Nd:Yag laser. Treatment with PDL was conducted at 10–40-msec and 7–15 j/cm^2, Nd:YAG 10 to 40 msec at 50–100 j/cm^2. Different time delays between wavelengths were studied and optimized.
Results: The use of sequential wavelengths provided significant improvement in otherwise recalcitrant vessels with treatment fluences lower than effective treatment with either device alone. The results will be discussed and correlated with the time delays in-between the two pulses.
Conclusions: The use of two wavelengths delivered sequentially was studied by Barton et al in an in-vitro setting but has not been investigated in clinical study. The unique changes in blood by use of two wavelengths suggest that we can improve results in the treatment of vascular lesions using this approach.

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A NOVEL PULSE FORMAT FOR A 595 nm PULSED DYE LASER TO REDUCE PURPURA: CLINICAL RESULTS WITH FACIAL AND LEG TELANGIECTASIA- VIDEO OF TECHNQUE

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Background and Objective: Recently extended pulse durations of 6, 10, 20 msec and 40 msec have been developed to minimize the incidence of purpura with 595 nm pulsed dye lasers. To even further minimize the risk of purpura a novel SmartPULSE (Cynosure, Chelmsford, MA) was developed. This format consists of sub-pulses of 0.15ms duration to equal a total duration of 10, 20 or 40 msec.
Study Design/Materials and Methods: A total of 40 patients were treated for facial telangiectasia with a pulse duration of 10 milliseconds, fluence of 8 J/cm^2 and spot size of 7 mm. This pulse format consists of six subpulses of 0.15 ms duration evenly spaced. The Zimmer air cooling system was utilized during the treatment for simultaneous skin cooling. A total of 10 patients were treated with a pulse duration of 20 milliseconds at 8 J/cm^2 with pulse stacking of up to 3.
Results: Patients experienced reduced pain with enhanced efficacy and reduced purpura. The incidence of purpura was only 3 in 40 patients. Efficacy was gauged on a quartile scale with 90% of patients experiencing greater than 75% improvement on the face and legs. Pain was rated as mild.
Conclusions: A novel pulsing format for PDL markedly reduces purpura while enhancing efficacy over previous pulsing formats which is shown in this video.