The assessment of pulsed dye laser treatment of port-wine stains with reflectance confocal microscopy.


ABSTRACT
BACKGROUND: Reflectance confocal microscopy (RCM) is a noninvasive technique for evaluating cutaneous lesions with cellular level resolution close to conventional histopathology. The aim of this study is to observe the vascular changes in Port-wine (PWS) lesions and assess the clinical efficacy of Pulsed Dye Laser (PDL) treatment by examining vessel diameter and density with RCM. MATERIAL AND METHODS: Eleven adult patients with PWS, each had four test patches carried out with different pulse durations (1.5, 3, 6, and 10 ms), respectively; fluences of 9-12 J/cm2; and a spot size of 7 mm. The PDL treatment was repeated 3-5 times at a 2-month interval. Photographs and measurements with RCM were taken before each treatment and 2 months after the last treatment. RESULTS: The PDL treatment exhibited increasing clearance with reducing pulse durations. Vessel diameters and densities were significantly decreased in the same pulse-duration groups after treatment. There was significant difference between 1.5 ms pulse-duration group and other pulse-duration groups in reducing blood vessel diameter at the depth of 150 μm. CONCLUSION: RCM can be used to assess the clinical efficacy of PDL treatment.