Subthreshold Continuous Wave Autofluorescence-controlled Laser Treatment of Chronic Central Serous Chorioretinopathy

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Abstract

Purpose:

To investigate the therapeutic effect of clinically invisible subthreshold continuous wave autofluorescence-controlled laser treatment on visual acuity and macular status of patients with chronic central serous chorioretinopathy (CSCR).

Methods:

In this prospective case series, patients with clinical and fluorescein angiographic (FA) findings of CSCR and chronic visual loss (>6 months) were included. Complete ocular examination, FA, and optical coherence tomography (OCT) tests were performed. Each eye was subjected to a direct laser treatment of leakage points by 532 nm continuous wave low energy laser pulses, which were kept invisible by reducing the power to 70% of the threshold test spot. Considering the lack of visible effect on the retinal pigment epithelium (RPE), the laser effect was monitored by pre- and post -treatment infrared and autofluorescence images.

Results:

A total of 20 patients were included in this study, of whom 12 patients (9 male and 3 female patients) with an average age of 38 years had complete follow-up (Average: 3.5 months). The mean preoperative visual acuity was 20/80, which improved to 20/40 at the final visit. The mean preoperative central macular thickness (CMT) was 330 μm and the average final CMT in the last OCT test was 188 μm (P = 0.001).

Conclusion:

Subthreshold continuous wave autofluorescence-controlled laser treatment may be a good treatment for chronic CSCR to avoid the risks of retinal damage by clinically suprathreshold laser therapy.

Keywords: Autofluorescence, Chronic Central Serous Chorioretinopathy, Subthreshold Continuous Wave Laser