CASE REPORT

CASE SERIES: ANATOMIC AND FUNCTIONAL EVALUATION OF CHRONIC CENTRAL SEROUS CHORIORETINOPATHY FOLLOWING TWO MICROPULSED LASER STRATEGIES

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P U R P O S E : to compare the functional and anatomical outcomes of two strategies of micropulse laser treatment applied in 4 chronic central serous chorioretinopathy (CSC) cases.

M E T H O D S :

Prospective case series of 4 chronic CSC treated in the Retina Service of the Federal University of São Paulo with two different micropulse laser treatment strategies, followed by review based on current literature.

C A S E R E P O R T S :

Case 1. 32-year-old male patient presented with low visual acuity in his left eye for the past three months. His BCVA was 20/20 (OD) and 20/125 (OS). Fundoscopy revealed serous detachment in the foveal region and OCT revealed subretinal fluid in the affected eye. He was treated with micropulse laser strategy named "Strategy 1", in which the titration mark is made with continuous laser and then the micropulse mode of the laser is activated using a duty cycle of 15% and an increase of 20% in the power. After one month, he showed marked improvement in his visual acuity, with BCVA of 20/20 (OU) and no subretinal fluid on OCT. (Figure 1)

Case 2. 39-year-old male patient presented with 1 year history of metamorphopsia in the left eye. His BCVA was 20/25 (OD) and 20/160 (OS). His OCT showed subretinal fluid with hyper-reflective subretinal material. He was treated with micro pulse laser strategy named "Strategy 2", in which the titration mark is already carried out in micropulse mode, using a duty cycle of 5%. Then, when the threshold burn is reached, the power is reduced by 50% and the treatment is performed. After one month, he presented with BVCA of 20/20 (OD) and 20/25 (OS), with significant reduction in the subretinal fluid. (Figure 2)

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Case 3. 38-year-old male patient presented with micropsia and relative scotoma in his right eye for the past 5 months. His BCVA was 20/20 (OU), fundus exam was unremarkable, but he revealed subretinal fluid in the OCT scan. He was treated with micropulse laser "Strategy 2". After one month, he maintained his BCVA, but referred subjective visual improvement and reduction in subretinal fluid. (Figure 3)

Case 4. 30-year-old male patient presented with low visual acuity in his left eye for the past 3 months. His BCVA was 20/20 (OD) and 20/100 (OS). Fundoscopy revealed serous detachment in the foveal region, and OCT findings included subretinal fluid in the same topography. He was treated with micropulse laser "Strategy 1". After one month, he presented with BCVA of 20/25 (OS), and no remaining fluid in OCT. (Figure 4)

FIGURES 1 and 2. Multimodal evaluation - Baseline and one-month follow-up.
Cases 1 and 2, respectively.

FIGURES 3 and 4. Multimodal evaluation - Baseline and one-month follow-up.
Cases 3 and 4, respectively.

DISCUSSION:

Central serous chorioretinopathy (CSC) affects mainly male individuals, from second to fourth decade of life, with unilateral, mild to moderate vision changes, in recurrent crises (1,2). It is estimated that it is one of the four most common non-surgical retinal diseases (3). In most cases, there is spontaneous and complete improvement within 3 months. Chronic CSC is considered when the crisis lasts for more than 3 months (4). Regarding treatment, there is an extensive range of therapeutic alternatives - from topical and oral medications to laser and intraocular treatments (5). The micropulsed subthreshold laser is an alternative that has demonstrated good functional and anatomical results in controlled studies (4-6). Unlike the conventional laser, the thermal elevation of micropulsed laser does not cause cell damage, but thermal stimulation, leading to production of inflammatory cytokines capable of increasing metabolic activity of RPE and, therefore, its ability to absorb subretinal fluid (7). However, one of the main criticisms of micropulsed laser treatment is the lack of standardization, and multiple different strategies contribute to this difficulty accepting therapy (8).

CONCLUSION:

Our case series support the already established data regarding micropulse laser treatment as a solid option for chronic CSC cases, with both strategies employed resulting in visual and tomographic improvement in all cases. More studies are needed to compare different micropulse laser treatment strategies and analyze their safety and effectiveness profile.

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