

IOP Reduction and Morphological Changes of Ciliary Body by Micropulse Transscleral Cyclophotocoagulation

Please Note: Schedule and room assignment are subject to change.

Presented During: Glaucoma E-Poster Pod Session III

Mon. 18 June 2018: 14:48 - 14:56

E-Poster Pod

Hall 6

Pod 2

Description

Micropulse transscleral cyclophotocoagulation (MPCPC; MicroPulse® P3 Glaucoma Devise, IRIDEX®, CA, USA) is a new glaucoma laser treatment to lower intraocular pressure (IOP). MPCPC has on-and off cycle, and avoid excessive focal heating and destroying the ciliary body. It has been indicated that MPCPC lowers IOP about 30% in refractory glaucoma. However, histopathological mechanisms treated with MPCPC remains unclear. In the current study, we investigated IOP reduction by MPCPC procedure and the preoperative and postoperative morphological changes of ciliary body using anterior segment optical coherent tomography.

Materials / Patients and Methods

Eight eyes with refractory glaucoma (68.5 ± 17 years old) were enrolled in the current study. This prospective observational study was approved by the institutional review boards of the University of Tokyo. MPCPC procedure was performed with 2000 mW applied for 80 seconds to the upper and lower sclera of the eye. IOP and anterior segment optical coherent tomography (AS-OCT; CASIA2®, TOMEY, Nagoya, Japan) of the inferior scleral sector of the eye were measured at baseline, 1 day, 2 weeks and 1 month after the procedure. IOP reduction, medication score, and the morphological changes of ciliary body were evaluated.

Conclusions

Preoperative mean IOP and medication score were 37.6 ± 12 mmHg and 4.1 ± 0.8 , respectively. IOP at 2 weeks and 1 month after the procedure were 33.4 ± 14 mmHg and 27.4 ± 12 mmHg, respectively ($p = 0.10$, $p = 0.032$, paired t-test with Bonferroni). Number of glaucoma medications at 2 weeks and 1 month after the procedure were 0.5 ± 1.4 and 1.6 ± 2.0 , respectively.

Mean IOP reduction rate at 2 weeks and 1 month after the procedure were 13% and 26%, respectively. AS-OCT analysis revealed that the ciliochoroidal effusion (CE) was observed in 4 out of 8 eyes (50%) in the inferior sclera at 1 day after the procedure. All CE were disappeared by 2 weeks after the procedure.

MPCPC was useful to decrease IOP and number of glaucoma medications in refractory glaucoma. Transient postoperative CE might represent the increase of uveoscleral outflow, whereas it may indicate the inflammation of the sclera. Further examination is expected to investigate the morphological changes of ciliary body after MPCPC and its relationship with the mechanisms of IOP reduction.

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