
Correspondence

Korean J Ophthalmol 2022;36(4):374-375
<https://doi.org/10.3341/kjo.2022.0073>

Choroidal Detachment Following Micropulse Laser Cyclophotocoagulation in a Trabeculectomized Eye with Chronic Angle Closure Glaucoma: A Case Report

Dear Editor,

Among lowering intraocular pressure (IOP) options for refractory patients, micropulse laser cyclophotocoagulation (MPCPC) emits laser irradiation in on/off cycling mode to minimize tissue destruction and resultant complications [1]. We describe a case of severe choroidal detachment following MPCPC in a patient with chronic angle closure glaucoma (ACG).

A 59-year-old female patient with hypertension and cardiac arrhythmia diagnosed with chronic ACG 8 years prior presented with uncontrolled IOP of her left eye (OS). She had undergone trabeculectomy twice, and was using brimonidine, dorzolamide/timolol fixed combination, and latanoprost eyedrops for OS. The best-corrected visual acuity (VA) was 0.9 and the IOP 25 mmHg OS. Its axial length and anterior chamber (AC) depth of her OS was 22.61 and 2.76 mm, respectively. The lens had 2+ nuclear sclerosis OS. Optic nerve examination of the OS showed total cupping of the optic disc and diffuse loss of peripapillary retinal nerve fiber layer on optical coherence tomography. Standard automated perimetry showed constricted central island in the left eye. Due to previous glaucoma surgery

history, she was given the option of MPCPC and underwent the procedure. Under retrobulbar anesthesia with 2 mL of 2% lidocaine, MPCPC was performed on the OS using a Cyclo G6 (Iridex, Mountain View, CA, USA), with preset laser power of 2,000 mW and a duty cycle of 31.3%. The duration of MP3 probe (Iridex Corp., Mountain View, CA, USA) application treatment was 100 seconds per hemisphere, except 3 and 9 o'clock areas, and previously formed filtering blebs were excluded as best possible. Post-operative IOP decreased from 26 to 16 mmHg the following day, and prior trabeculectomy blebs were seen intact with deep AC and minimal inflammation. Corrected VA was 1.0 OS, and the patient was maintained on dorzolamide/timolol, brimonidine, and loteprednol eyedrops. Three weeks post-MPCPC, she complained of acute decline in vision. The corrected VA was 0.1 and IOP was 7 mmHg OS, and while prior trabeculectomy blebs were seen intact and the AC deep, there was 2+ inflammatory AC reaction. On dilated fundus examination, large choroidal detachment was noted (Fig. 1A, 1B). Upon closer patient interview, it was revealed that she discontinued loteprednol drops at her own will at 1 week after MPCPC. To manage the choroidal detachment, the patient was given oral steroid starting at 50 mg/day for 5 days and this was tapered to 40 mg daily for 5 days, then 30 mg daily for 1 week along with topical steroid. Two weeks after, corrected VA improved to 0.5 and IOP at 22 mmHg. Choroidal detachment resolved gradually, and no sign was observed for 3 months. Her vision improved up to 0.8 at 1 year after MPCPC, and her IOP was stabilized at the midteens, while using brimonidine and dorzolamide/timolol fixed combination. Written informed consent for publication of this case and its clinical images was obtained from the patient.

Recently, MPCPC has gained popularity because it has a better safety profile with fewer reported complications, and several studies have demonstrated comparable

Received: June 15, 2022 Final revision: July 10, 2022
Accepted: July 17, 2022

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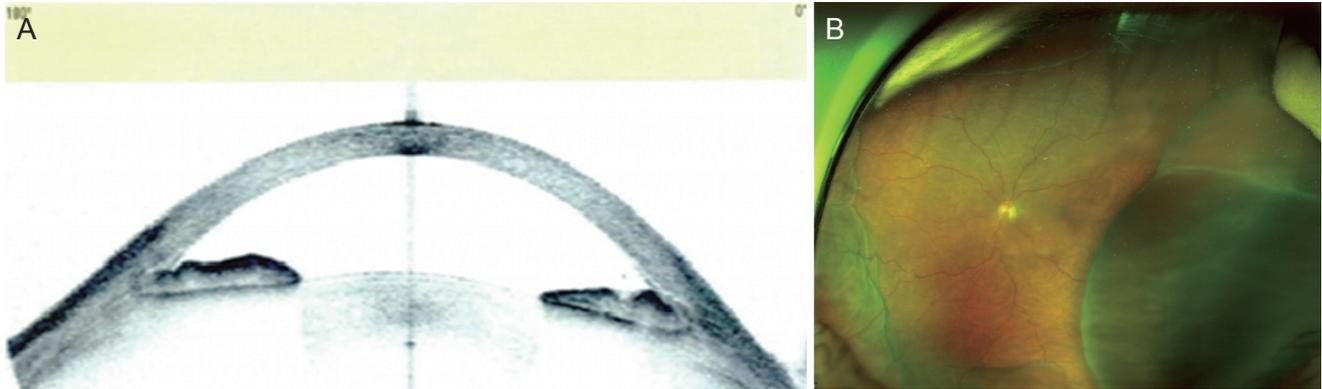


Fig. 1. Anterior segment and fundus images. (A) Anterior segment optical coherence tomography showed closed angle of the left eye. (B) A large choroidal detachment was noted on the widefield fundus photography.

IOP-lowering outcomes and lower risk of vision-threatening side effects [1,2]. In this case, severe choroidal detachment was noted 3 weeks after MPCPC. This patient had a history of previous filtration glaucoma surgeries using mitomycin C. The antimetabolite nature of mitomycin C may have led to scleral thinning, leading to relatively weaker connective tissue, through which fluid movement through the uveal tissue and the vascular wall may facilitate the development of choroidal detachment [3]. The inevitable inflammation after MPCPC may have exacerbated uveal leakage, leading to choroidal detachment. Secondly, the variations in anatomic location of ciliary body may also have predisposed the patient to choroidal detachment. Zhang et al. [4] studied the ultrasound biomicroscopic findings of ACG patients with ciliochoroidal detachment and suggested that glaucoma surgery may increase the incidence of choroidal detachment in ACG. We hypothesize that relatively anterior location of ciliary body in ACG may have exacerbated the choroidal inflammatory response. Lastly, the patient's failure to adhere to the anti-inflammatory regimen led to insufficient steroid coverage. This was later salvaged using optimal oral steroid therapy and resuming the topical steroid treatment.

Compared to conventional cyclophotocoagulation, MPCPC is a relatively safer procedure to treat refractory glaucoma. However, eyes with previous filtering surgery or anatomical differences of ciliary body may be more susceptible to complications like prolonged inflammation or choroidal detachment. Proper steroid coverage and close monitoring for possible complications is necessary after MPCPC.

Conflicts of Interest: Chungkwon Yoo (Corresponding Author) has been a member of the Editorial board of the *Korean Journal of Ophthalmology* since 2019. However, he was not involved in the peer reviewer selection, evaluation, or decision process of this article. Otherwise, no other potential conflicts of interest relevant to this article were reported.

Acknowledgements: None.

Funding: None.

Purumeh Nam, Chungkwon Yoo, Ji-Hye Park, Yong Yeon Kim

Department of Ophthalmology, Korea University College of Medicine, Seoul, Korea

E-mail (Chungkwon Yoo): ckyoomd@korea.ac.kr

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