

# With Continuous-Wave and MicroPulse® Modes, the IRIDEX IQ 577™ Laser Provides Uncommon Versatility



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Having a comprehensive practice that provides care for both the anterior and posterior segments requires the acquisition of more instruments and devices than are necessary for more narrowly focused enterprises. In my practice, where I offer medical and surgical glaucoma services and medical retina services in addition to cataract surgery, the IRIDEX IQ 577™ Laser has made this necessity much more manageable and cost-effective. The laser's multiple capabilities provide uncommon versatility. The feature that drew me to the IRIDEX IQ 577 Laser was that I could use it to treat retinal conditions as well as glaucoma. I use the laser in conventional, continuous-wave mode to perform many procedures, including panretinal photocoagulation and retinopexy for retinal tears. Also in conventional mode, I pre-treat

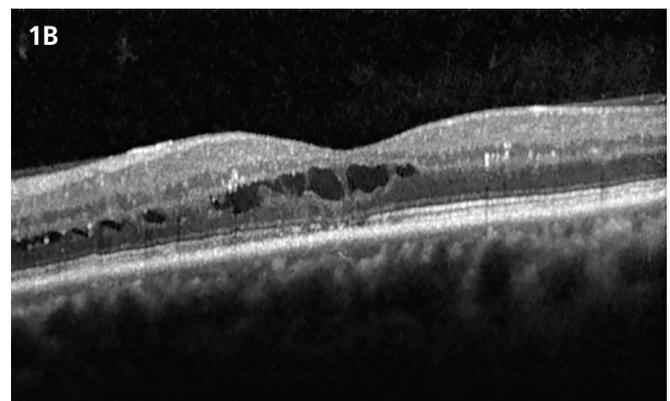
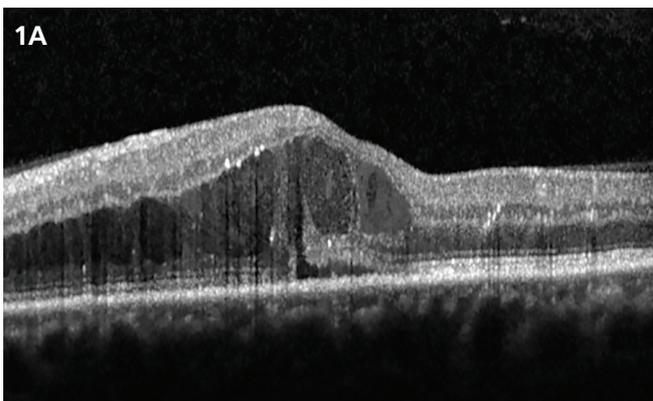
eyes with darker-colored irides prior to YAG laser peripheral iridotomy, as this tends to decrease patient discomfort.

In addition to conventional mode, the IRIDEX IQ 577 Laser offers MicroPulse mode, which also gives me the ability to treat multiple conditions in a manner that preserves rather than destroys ocular tissue. For example, MicroPulse laser trabeculoplasty lowers intraocular pressure (IOP) for my glaucoma patients, acting on the pigmented cells of the trabecular meshwork with less likelihood of inflammation or a spike in IOP than other approaches to trabeculoplasty. Similarly, using MicroPulse for retinal indications, I can treat the retina with less worries about causing thermal, coagulative damage. With the confidence I have in the safety of MicroPulse, laser treatment is now an option in cases with foveal involvement.

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**Figure 1.** (A) June 22, 2017 | left eye | 2 weeks prior to MicroPulse | CRT 428 μm | VA 20/30; (B) Sept. 28, 2017 | left eye | 12 weeks after MicroPulse | CRT 264 μm | VA 20/25.

**Ideal for:**  
Non-compliant patients  
Multiple retinal disorders  
Glaucoma

**Ideal to:**  
Treat sooner  
Reduce treatment burden  
Reduce financial burden

**Ideal as:**  
Alternative to anti-VEGF non-responders  
Alternative to continuous-wave and to observation  
Adjunct to other interventions

*“For glaucoma, MicroPulse laser trabeculoplasty, in my experience, can reduce IOP with a good safety profile, which can decrease the medication burden for the patient.”*

## MICROPULSE FOR MACULAR EDEMA

While anti-VEGF agents are effective as standalone therapy for diabetic macular edema (DME) and branch retinal vein occlusion in many patients, MicroPulse can have an additive or synergistic effect in refractory cases or when the positive effects of anti-VEGF treatment have reached a plateau. I recently used MicroPulse to treat a 70-year-old patient who had a history of diabetes. Prior to seeing me, this patient had received multiple anti-VEGF injections to address DME. When he presented to me on May 12 of this year, he had significant edema centrally in the left eye that was affecting his vision. Visual acuity (VA) in that eye was 20/25 and central retinal thickness (CRT) as measured by OCT was 412  $\mu\text{m}$ . Per my usual protocol, to reduce subretinal fluid and restore visual acuity, I treated the patient with an anti-VEGF injection as first-line therapy.

By the next visit 6 weeks later, on June 22, VA had decreased to 20/30 and CRT had increased to 428  $\mu\text{m}$  (Figure 1A). Given the worsening of vision and the increase in subretinal fluid, I administered a second anti-VEGF injection and recommended that we add MicroPulse laser to the patient’s treatment. Much of the edema was near the fovea, which ruled out conventional laser as an option for a complete treatment. The risk of affecting vision by targeting that area with conventional laser would be too great. However, the MicroPulse laser allows effective and complete treatment near the fovea — without the spread of thermal energy causing tissue damage. The patient returned for his MicroPulse laser treatment as scheduled 2 weeks later on July 6 (Table 1). At his

follow-up visit 20 days later, the eye was improved, with 20/25 VA and CRT of 338  $\mu\text{m}$ . The gain in visual acuity was noticeable to the patient, as well. I last saw him on Sept. 28, which was 12 weeks after MicroPulse, and he was doing very well. His CRT was 264  $\mu\text{m}$ , his VA was 20/25, and he hadn’t required any other treatment in the interim (Figure 1B).

## THE ADDED BENEFITS OF MICROPULSE TECHNOLOGY

The multifaceted IRIDEX IQ 577 Laser has been beneficial for my practice overall, and its inclusion of MicroPulse mode adds a whole new set of benefits for my patients. For retinal pathologies, it allows for safe laser therapy in cases of foveal involvement. It also has the potential to decrease the number of visits and/or the number of anti-VEGF treatments, while extending the time between visits. For glaucoma, MicroPulse laser trabeculoplasty, in my experience, can reduce IOP with a good safety profile, which can decrease the medication burden for the patient. ■

**Table 1. TREATMENT PARAMETERS**

IRIDEX IQ 577™ Laser with MicroPulse for DME

- Wavelength: 577 nm
- Spot size on slit lamp adapter: 200  $\mu\text{m}$
- Contact lens: Ocular Reichel-Mainster 1X (Ocular Instruments)
- Power: 400 mW
- Exposure duration: 200 ms
- Duty cycle: 5%
- MicroPulse delivery: 400 confluent pulses targeting areas of fluid as represented on OCT and applied to the macula, focusing on the foveal region

Hear more about how other comprehensive ophthalmologists have incorporated MicroPulse into their practices.



Treatment techniques and opinions presented in this case report are those of the author. IRIDEX lasers are cleared for retinal photocoagulation of vascular and structural abnormalities of the retina and choroid; and iridotomy, iridectomy and trabeculoplasty in angle-closure glaucoma and open-angle glaucoma. IRIDEX assumes no responsibility for patient treatment and outcome. IRIDEX, IRIDEX logo, and MicroPulse are registered trademarks, and IQ 577 is a trademark of IRIDEX Corporation.

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