



## SANDRA SIEMINSKI, MD

University at Buffalo, Ross Eye Institute  
Buffalo, NY United States

### PATIENT CASE REVIEW

## Eleven-Year-Old Patient with Congenital Glaucoma and Uncontrolled Pressure on Four Medications Successfully Treated with MicroPulse

An 11-year-old white girl with congenital glaucoma was referred for uncontrolled pressure in her left eye. IOP was 27 mm Hg on four medications. Her surgical history included cataract extraction, IOL, goniotomy and two superior Ahmed valve (New World Medical) implantations. Her visual acuity was 20/60 with a full visual field, a cup-to-disc ratio of 0.75, corneal thickness of 660 microns, and thinning seen on OCT. Due to her numerous previous procedures, her parents were reluctant to perform



further incisional surgery. Because of its safety and efficacy profiles, MP-TSCPC was an ideal option for this patient. The patient was given the same preoperative medications as in the first case. She was then treated at 2,000 mW, applying the laser at 80 seconds in the inferior hemisphere and 50 seconds superiorly while care was taken to avoid the tube implantation sites. At her postoperative week 2 follow-up, her IOP had decreased to 18 mm Hg. At her one month visit, her IOP was 19 mm Hg, which was still a significant reduction from baseline. Her visual acuity remained at 20/60, and she remained on four medications. While there was no decrease in medications, the treatment did significantly reduce her IOP with no pain, inflammation, vision loss or other side effects, and we have the option to repeat the treatment in the future as needed.

With its safety and efficacy profiles, MP-TSCPC was an ideal option for this patient. Pre-operatively, the patient was given Ocufer (flurbiprofen ophthalmic, Allergan) and topical lidocaine gel. I also applied Goniosol (hydroxypropyl methylcellulose) on the ocular surface and administered a small 50/50 mix of lidocaine and Marcaine (bupivacaine hydrochloride, Pfizer) retrobulbar. She was then treated at 2000 mW at 80 seconds inferiorly and 50 seconds superiorly while care was taken to avoid the tube implantation sites.

### RESULTS

At her post-operative Week Two follow up, her IOP had reduced to 18 mmHg and while this increased slightly to 19 mmHg by the Month One follow up, the reduction from her baseline IOP was still significant. Her visual acuity remained at 20/60 and she continued on four medications. While there was no decrease in medications, the treatment did significantly reduce her IOP with no pain, inflammation, vision loss, or other side effects, and we have the option to repeat the treatment in the future as needed. Overall, I have found great success with this procedure. I have not encountered hypotony, phthisis, significant vision loss, refractory inflammation or marked postoperative pain as can be experienced with continuous wave. MP-TSCPC is safe and efficacious, including in earlier-stage patients with good vision. It is a very useful tool in my armamentarium to treat glaucoma.

## BEFORE THE CASE

- 11-year-old white female; congenital glaucoma; uncontrolled pressure in her left eye.
- IOP of 27 mmHg; 4 medications
- Previous Ahmed valves implanted (1 in right eye; 2 in left eye); had goniotomy
- Previous cataract extraction in both eyes with intraocular lenses
- Visual acuity was 20/60 with full visual field (left eye)
- Cup-to-disc ratio of 0.75: corneal thickness of 660 microns (OCT)
- Numerous previous procedures
- Parents very reluctant to perform further incisional surgery

## CASE SETTINGS

- Ocufen + Topical lidocaine Gel
- Monitored Anesthesia (MAC)
- Small retrobulbar injection of a 50/50 mix (Lidocaine / Marcaine)
- CycloG6 System with MP Probe (MP3)
- Power: 2000mW
- 80 sec inferior hemisphere
- 50 sec superior hemisphere to avoid tube implantation site

## AFTER THE CASE

- Follow up Week 2 post-op: IOP 18mmHg;
- Follow up 1 month post-op: IOP 19mmHg;
- Visual Acuity remain 20/60
- Remained on 4 meds
- No pain, no inflammation, no vision loss
- No any other side-affects
- Options to repeat MP CPC treatment or any other procedures still open

## PROCEDURAL TIPS

I advise performing this procedure as directed by the company when first starting out. Surgeons will gain confidence and familiarity without worrying about the severe inflammation or discomfort patients may experience with more invasive surgeries. More experience with the procedure will allow surgeons to choose which elements of the process work best for them. For instance, I no longer use a lid speculum as I feel it prevents me from easily sweeping the probe across the globe. I have not found any issues with the lid getting in the way without the speculum as the probe pushes it out of the way as I sweep. I have also incrementally increased my total laser time and sweeping time per hemi-field in certain patients.

