

### Selective laser trabeculoplasty for the treatment of intraocular pressure elevation after intravitreal triamcinolone injection

Intravitreal triamcinolone acetonide (IVTA) injections are used widely for the treatment of edematous, inflammatory, and neovascular diseases of the retina. The most frequent complication seen after IVTA injection is steroid-induced intraocular pressure (IOP) elevation, also known as secondary ocular hypertension (SOH). The rate of SOH is around 40% and appears 1–2 months after 4 mg injections and 2–4 months after 20 mg injections, stabilizing at 6–9 months. SOH after IVTA can usually be controlled with topical medical therapy, but infrequently persists and requires filtration surgery or even vitrectomy.<sup>1–3</sup> A novel approach for the treatment of IOP elevation after IVTA is selective laser trabeculoplasty (SLT), proposed by Pizzimenti et al.<sup>4</sup> and later by Rubin et al.<sup>5</sup> Herein we report the effectiveness of SLT for temporizing SOH after IVTA refractory to medical therapy.

A 44-year-old man presented with low vision in his right eye for the previous 20 days. Visual acuity was 20/50, slit-lamp examination was normal, and IOP was 12 mm Hg in that eye. Fundus examination revealed a recent inferior temporal vein occlusion with macular edema. Examination of the other eye was unremarkable. For the treatment of macular edema, IVTA injection, 4 mg/0.1cc (Kenacort-A, Bristol Myers-Squibb, Istanbul, Turkey), was performed in the involved eye. The patient had no personal or family history of glaucoma.

Visual acuity in the right eye was 20/20 1 month after IVTA injection. IOP was 25 mm Hg at 1 month and the patient was started on timolol maleate 0.5%. Gonioscopic examination revealed open angles and absence of neovascularization. IOP was 29 mm Hg at 2 months and the patient was started on dorzolamide-timolol fixed combina-

tion. At the third month, IOP was 40 mm Hg and latanoprost was added. At 4 months, IOP was 36 mm Hg under maximal medical therapy (Fig. 1). Optic disc examination was normal throughout this period. However, Heidelberg retina tomograph examination was “borderline” according to Moorfields classification; Humphrey 30-2 visual fields showed a defect consistent with the vein occlusion area. The patient was deemed to be SOH refractory to maximal medical therapy and under the imminent risk of developing glaucomatous optic neuropathy.

After obtaining written and oral consent, the patient underwent 180° SLT (Ellex Solo, Ellex Lasers, Adelaide, Australia) (55 spots, 58 mJ); maximal medical treatment was continued. One month after SLT, IOP was 32 mm Hg. The remaining 180° of the angle were treated with SLT (55 spots, 56 mJ). After 360° SLT treatment IOP was 20 mm Hg at month 1 and 12 mm Hg at month 3 (under maximal medical therapy). Fixed combination was stopped after the 3-month visit. At 4 months, IOP was 11 mm Hg with latanoprost only; at this point, latanoprost was also withdrawn from treatment. IOP was 12 mm Hg at the fifth-month and sixth-month examinations after SLT (Fig. 1). No early or late complications of SLT were noted.

SLT for elevated IOP after IVTA has been reported infrequently in the literature.<sup>4–5</sup> Although the IOP drop in the case we present could be due to the waning of the steroid effect, our results also suggest that SLT can help in normalizing IOP safely and effectively in addition to medical therapy for persistent IOP elevation. The possible complications of SLT are minor and transient and the procedure is comfortable for the patient.

#### REFERENCES

- Ozkiriş A, Erkiliç K. Complications of intravitreal injection of triamcinolone acetonide. *Can J Ophthalmol* 2005;40:63–8.
- Jonas JB, Degenring RF, Kreissig I, Akkoyun I, Kampmeter BA. Intraocular pressure elevation after intravitreal triamcinolone acetonide injection. *Ophthalmology* 2005;112:593–8.
- Agrawal S, Agrawal J, Agrawal TP. Vitrectomy as a treatment for elevated intraocular pressure following intravitreal injection of triamcinolone acetonide. *Am J Ophthalmol* 2004;138:679–80.
- Pizzimenti JJ, Nickerson MM, Pizzimenti CE, Kasten-Aker AG. Selective laser trabeculoplasty for intraocular pressure elevation after intravitreal triamcinolone acetonide injection. *Optom Vis Sci* 2006;83:421–5.
- Rubin B, Taglienti A, Rothman RF, Marcus CH, Serle JB. The effect of selective laser trabeculoplasty on intraocular pressure in patients with intravitreal steroid-induced elevated intraocular pressure. *J Glaucoma* 2008;17:287–92.

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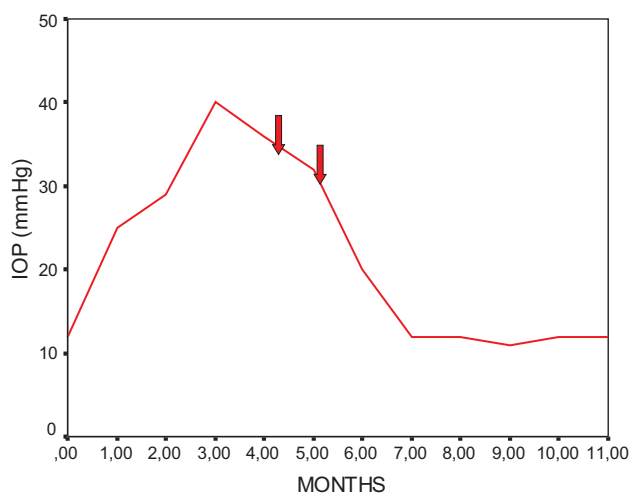


Fig. 1—Intraocular pressure (IOP) change after intravitreal triamcinolone acetonide (mm Hg). The arrows indicate the timing of 180° selective laser trabeculoplasty procedures.