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SLT

The Refractive Surgeon's Next Laser?

BY DAVID A. GOLDMAN, MD



One of the most frustrating consultations a refractive/cornea specialist can receive is the older glaucoma patient taking multiple drops who is referred for ocular irritation. In most of these cases, the problem is chronic, rather than acute, and is a result of the multiple eye drops that are necessary to prevent further vision loss.

At this stage of the disease, it is very difficult to reverse the damage that has been done. Patients return frequently, frustrated that their problem has not been "fixed." Unfortunately, simply discontinuing their drops is not a viable option, in spite of evidence that the drops are the offending agents. Multiple studies have shown the prevalence of ocular surface disease to be higher in patients on glaucoma drops,¹ and further work has shown a direct correlation between the number of drops and the frequency of ocular discomfort.²

Although preservatives such as benzalkonium chloride have been shown to worsen tear film breakup times, drops such as carteolol can result in faster tear film breakup times for at least 2 hours.³ In addition to discomfort, the disruption of a healthy ocular surface can lead to blurred vision and irregular refractions/topographies. This last effect is what has made refractive surgeons pay particular attention to the ocular surface. It is much more commonplace today to pretreat patients with topical, or even oral, medications with the intent of decreasing ocular surface inflammation to ensure good visual outcomes and comfortable eyes.

Most refractive surgeons are using femtosecond, YAG, and excimer lasers for their patients. Could selective laser trabeculoplasty (SLT) be the refractive surgeon's next laser offering? For my practice, the answer was a resounding "yes." At first, I would recommend SLT for those glaucoma patients referred to me who had already developed



significant ocular surface disease, but gradually, I started to recommend it more. As ophthalmologists in today's climate of decreasing reimbursements and decreasing LASIK volume, we are looking for ways to increase practice revenue.

Although argon laser trabeculoplasty has often been utilized primarily by glaucoma specialists, SLT offers many advantages that make it appealing to all ophthalmologists. Most importantly, it works; in a study by Nagar et al, SLT was found to be equally effective as latanoprost.⁴ Argon laser trabeculoplasty requires precise location of its spots (and with them thermal energy burns) to ensure a good effect. SLT, however, incorporates a larger spot size that is more forgiving for those less comfortable with gonioscopy. This is because the SLT laser incorporates a Q-switched frequency-doubled YAG operating at 532 nm; this laser only destroys pigmented trabecular meshwork cells, while not causing

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thermal injury to collateral tissue. This is an excellent advantage, as it preserves the structural integrity of the eye and conjunctiva should the patient require cataract surgery or filtering surgery down the road.

Another advantage of this technology is that it can be used once or repeated as necessary and remain effective. Brian Francis, MD, and colleagues recently conducted a retrospective review of repeat SLT and found “an equivalent IOP lowering of the second SLT treatment to the first. The SLT 2 group had a lower baseline, but when we did a subanalysis with selected matched baselines, the effect was almost exactly the same.”⁵

An additional advantage for refractive surgeons incorporating this technology is that their practices are already well prepared for performing laser surgery: rooms are clean and are set at appropriate temperature/humidity to maximize products' lifetimes. Furthermore, refractive surgeons who have satellite offices appreciate that patients are very willing to travel for a one-time procedure. For those who do not want to, however, the Lumenis Selecta II (Lumenis Inc., Santa Clara, CA) is very amenable to transport between offices.

Besides getting patients off glaucoma drops, SLT can be instituted as primary therapy. A retrospective chart review was conducted in which investigators collected data on 1,363 eyes that underwent SLT as primary therapy from a total of more than 3,000 eyes treated with SLT for more than 8 years. The long-term reduction in mean IOP was 31%, from a mean of 18.8 to 13 mm Hg, and 93% of eyes treated with primary SLT required no further intervention. Moreover, only 6% of eyes required one repeat SLT procedure, and 1% of eyes required medications to control the IOP.⁶⁻¹¹

For today's practicing refractive surgeons, revenue has decreased nationwide, and with downfalls in the economy, patients are less willing to pay for presbyopia-correcting IOLs. By incorporating technology such as SLT into a refractive practice, sources of income become more diver-

sified and more stable. Refractive surgeons who have already incorporated this technology agree.

“As a cornea and glaucoma specialist, I have found many refractive patients who would benefit from lower IOP,” notes John Berdahl, MD, of Sioux Falls, South Dakota. “These patients typically prefer SLT because of their active lifestyle and the convenience of not needing eye drops. Having SLT available has allowed me to diversify my practice, provide a valuable service to my patients, and increase revenue. It is only natural for patients with glaucoma to seek laser eye surgeons for laser eye surgery like SLT. We were surprised how many patients who could benefit from SLT were passing through our clinic as LASIK or cataract consults. By incorporating SLT, we have increased patient satisfaction, provided an important service to our patients, and grown our practice.”

Jai Parekh, MD, of Paterson, New Jersey, agrees: “I started doing SLT a few years ago. ... It has added immense value to our patients, practice, and reputation. There is no doubt that SLT, as either an adjunctive, rescue, or primary therapy in our glaucoma patients, is clinically and cost-effective. In the days of polypharmacy and its associated costs in our ever-growing baby boomer glaucoma practices, we must strive to provide our patients with the best therapies at a reasonable cost. Our patients yearn for us to be cutting edge but not at the expense of their wallets. SLT is certainly in the armamentarium of the modern-day, fiscally prudent anterior segment surgeon.”

Furthermore, the SLT laser incorporates traditional YAG technology so that one laser platform can perform both SLT and/or YAG capsulotomies. This is important to consider, because replacing a YAG laser with an SLT laser should not require any more office space. Additionally, the lasers such as the Selecta Duet can change modes with the flip of a switch, allowing, if desired, both YAG capsulotomies and SLT to be performed in one setting without moving the patient, thereby greatly increasing patient flow.

Of course, this is an excellent service for the patient. By decreasing patients' need for eye drops, their lifestyle is now not only easier but also less costly, as they no longer need their monthly medications. The 5-year cumulative costs for glaucoma patients were calculated to be approximately \$6,571 and \$6,363, respectively, for medications and filtering surgery compared with \$4,838 for laser trabeculoplasty.¹² As the baby boomer generation ages, the need for glaucoma treatment will increase exponentially, and performing a reimbursable procedure in place of writing a no-profit prescription will certainly affect a practice's bottom line.

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Patients' compliance with prescribed medical therapy is a perennial concern, and it is well known that they forget to take their drops more often than we would like to believe. SLT can eliminate or decrease their need for pharmaceutical agents. Furthermore, their ocular irritation and blurred vision can now improve. This, again, is of particular importance to refractive surgeons, whether their refractive procedure involves LASIK, phakic IOLs, presbyopia-correcting lenses, or traditional cataract surgery. If this treatment is initiated in the early stages of glaucoma, rather than after decades of drops have affected the lid margin, therapeutic benefits can be maximized. By reducing the use of drops that are detrimental to the ocular surface, SLT will ultimately please both patients and their physicians.

With benefits that greatly outweigh the risks, the SLT laser is a practice builder that will likely be commonplace in LASIK suites within the next few years. *

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