

Perioperative Treatments Improve the Wow Factor in Refractive Surgery

Optimizing ocular health can enhance surgical outcomes on postoperative day 1.

BY KARL G. STONECIPHER, MD

The importance of screening patients for dry eye disease before and after refractive surgery has become apparent. Data suggest that about 9 million LASIK procedures were performed in the United States through 2006, with about 48% of patients reporting dry eye symptoms after surgery.¹

Dry eye disease can be exacerbated by various factors including visual tasking, systemic medications, diet, arid conditions, windy environments, and pollutants. By asking the correct questions of their patients, ophthalmologists can identify the problem before surgery.

A HEALTHY TEAR FILM

Three components make up the healthy tear film, and these are the lipid, the aqueous, and the mucin layers. Dry eye disease falls into two main classifications, evaporative (the lipid layer) or aqueous-deficient (involving the aqueous layer) disease. An evaluation of the patterns of tear break-up time (TBUT) may provide deeper insight into the tear film's instability and the interaction between the tear film and the ocular surface. Conjunctival staining with rose bengal or lissamine green can also help identify the extent of a patient's dry eye disease.

Blepharitis. It is crucial to identify and treat blepharitis and rosacea before refractive surgery. Blepharitis may be divided into anterior and posterior disease, although most individuals have a combination of the two. Depending on the etiology, patients can be treated with agents such as Azasite (azithromycin 1% ophthalmic solution; Inspire Pharmaceuticals, Inc., Durham, North

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Carolina), Tobradex (tobramycin and dexamethasone; Alcon Laboratories, Inc., Fort Worth, Texas), Zylet (loteprednol and tobramycin; Bausch + Lomb, Rochester, New York), and doxycycline. Lid scrubs are also an option.

As shown by Foulks and colleagues, Azasite was associated with a statistically significant improvement in the signs and symptoms of blepharitis.² After 4 weeks of therapy, the agent was also associated with increased TBUT and improved meibomian gland function.

Dry eye disease. Dry eye disease can be classified as mild, moderate, or severe. My treatment regimen for patients with mild disease includes Pred Forte 1% (prednisolone acetate ophthalmic suspension; Allergan, Inc., Irvine, California) and Zymar 0.3% (gatifloxacin ophthalmic solution; Allergan, Inc.) for 3 days preoperatively, dosed four times daily. Restasis (cyclosporine ophthalmic emulsion 0.05%; Allergan, Inc.) may also be indicated twice daily for 1 to 2 weeks prior to surgery and continuing postoperatively until resolution of the dry eye findings. For moderate disease, I prescribe Restasis twice daily for 1 to 2 months

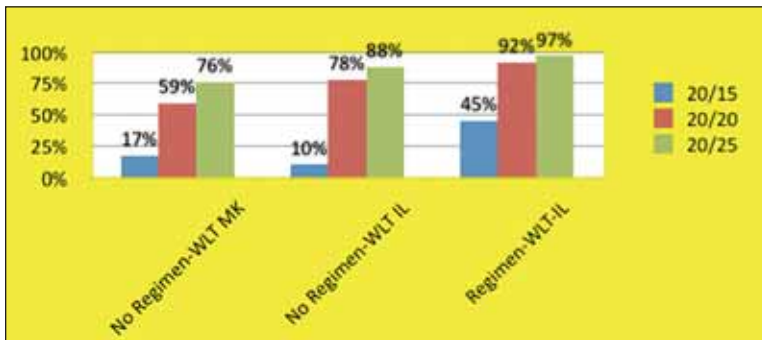


Figure 1. In a study of 236 eyes comparing individuals treated or not treated prior to LASIK, preoperative therapeutic regimen significantly improved patients' vision on postoperative day 1.

Abbreviations: WLT = Allegretto Wave Eye-Q Excimer Laser (Alcon Laboratories, Inc., Fort Worth, Texas); IL = IntraLase FS laser (Abbott Medical Optics Inc., Santa Ana, California); MK = microkeratome.

preoperatively and Pred Forte 1% and Zymar 0.3% four times daily for 3 days preoperatively. Additionally, patients will use Restasis twice daily after surgery until their dry eye disease resolves. In patients with severe disease, my treatment regimen includes Restasis twice daily for 4 to 6 months preoperatively plus punctal occlusion if warranted. Treatment with Pred Forte and Zymar remains the same immediately preoperatively, with Restasis twice daily postoperatively for 1 year.

I let patients know that they have dry eyes before surgery and explain that the condition may continue to affect them postoperatively. They may need to use Restasis indefinitely. I operate on these patients during the more humid months.

Why Restasis? I use Restasis to increase patients' tear production.^{3,4} In a study published in 2005, my colleagues and I evaluated cyclosporine 0.05% for the treatment of dry eye. Patients received Restasis twice a day for 30 days, and treatment was associated with improvements in their dry eye symptoms. Most patients in this study experienced relief within 3 weeks and were able to decrease how frequently they used artificial tears.⁵

TAKE-HOME MESSAGE

- About 48% of patients report dry eye symptoms after surgery.
- The three components of a healthy tear film are the lipid, the aqueous, and the mucin layers.
- Conjunctival staining with rose bengal or lissamine green can help identify the extent of a patient's dry eye disease.

HOW TO IMPROVE OUTCOMES

At my practice, we have improved LASIK outcomes on postoperative day 1 by optimizing patients' ocular surface as described herein. We believe we achieve better results because our treatment regimen improves lid margin hygiene. Healthier lids promote a healthier tear film, which allows better diagnostic testing on the day of surgery. More accurate numbers equal better vision as soon as day 1 (Figure 1). Obviously, improved outcomes also mean fewer enhancements and happier patients.

We compared visual outcomes among patients who received preoperative treatment consisting of Pred Forte 1% and

Zymar four times per day for 3 days with those who did not (236 eyes of 118 patients were included). We noticed two things from this prospectively evaluated group. There was an improvement in UCVA at postoperative day 1 among patients receiving a femtosecond-laser-created flap versus those fashioned with a microkeratome. However, the major improvement in postoperative day 1 UCVA was related to the preoperative regimen of a corticosteroid plus a fluoroquinolone four times daily for 3 days as well as treatment of dry eye disease with Restasis.

CONCLUSION

Most patients follow some sort of therapeutic regimen prior to cataract surgery. I encourage eye care specialists to consider a similar approach to refractive surgery. Preoperative treatment has definitely improved LASIK patients' UCVA on postoperative day 1 in my practice, just when they most desire the wow factor. ■

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