



New approaches to OLD PROBLEMS

At Pacific Vision Institute, the team of surgeons, optometrists, and vision research scientists are at the leading edge of innovative solutions and approaches to problems both common and uncommon in eye care practice. In this issue, we describe three common problems that we encounter and new way of looking at each one of them.

New drops for dry eyes

We have had an interesting and exciting development in dry eye treatment recently.

At PVI, our typical post-refractive surgery dry eye management protocol begins before the procedure. One week prior to surgery, patients are started on twice daily tear film supplements (combination of flax seed, omega-3, and omega-6 fatty acids) as well as Refresh Plus QID. The supplements are continued for three weeks after the procedure. Postoperative drop regimen to manage tear film includes non-preserved Refresh Plus as often as every 1-2 hours while awake and Celluvisc at night for the 1st week. The drops are then tapered as the dryness improves. For those with persistent SPK, the regimen is continued as is until improvement is seen. If SPK does not respond to Refresh Plus, Celluvisc is initiated hourly during the day. Many patients may resist this drop due to blur after instilling the Celluvisc. In addition, of course, we use Restasis, punctal occlusion, tear film stabilizers, tear film replenishers, and oral supplements. Almost all of the patients can be successfully managed with this protocol. Last year, however, we encountered a patient with persistent punctate keratopathy. Despite all of our efforts, keratopathy persisted. We decided to try something new.

Here is this patient's story. A 32 year-old female had Intra-Lase LASIK performed in December 2006. Refresh Plus was used every hour after surgery with Celluvisc before

bedtime. 2 weeks post-LASIK, the patient reported hazy vision OD. There was grade 2 diffuse SPK OD with 20/30 UCVA and 20/25 BCVA and trace inferior SPK OS with 20/15 UCVA. Silicone punctal plugs were inserted inferiorly OU. In the right eye, the SPK was reduced to grade 1 with 20/25 UCVA and 20/15 BCVA. SPK cleared in the OS. Refresh PM ointment was added before bed to the right eye. At 3 months, the SPK became diffuse with 20/30 UCVA OD so Celluvisc was added 3-4 times during the day. With no improvement, FML was started qid to treat any underlying inflammation that may be causing the SPK to persist and Restasis was added bid OU. After 3 weeks there was no improvement so FML was discontinued and Genteal gel started every 2 hours, then switched to Theragel and flax seed oil was added. The vision was still 20/30 best-corrected, but the patient started noticing



Figure 1A. Optive eye drops for dry eye keratopathy

more moments of clarity as the day progressed. However, this vision was still not satisfactory to the patient. Finally, we decided to try something different. She was then started on OPTIVE every 2 hours while continuing Refresh PM. Within one month, the SPK reduced to a grade 1 inferiorly. UCVA improved to 20/25. A month later, SPK decreased to a trace amount with 20/20- UCVA. The patient reports good comfort and vision now.

Encouraged by the success in this patient, we started using Optive to treat persistent SPK in patients after refractive

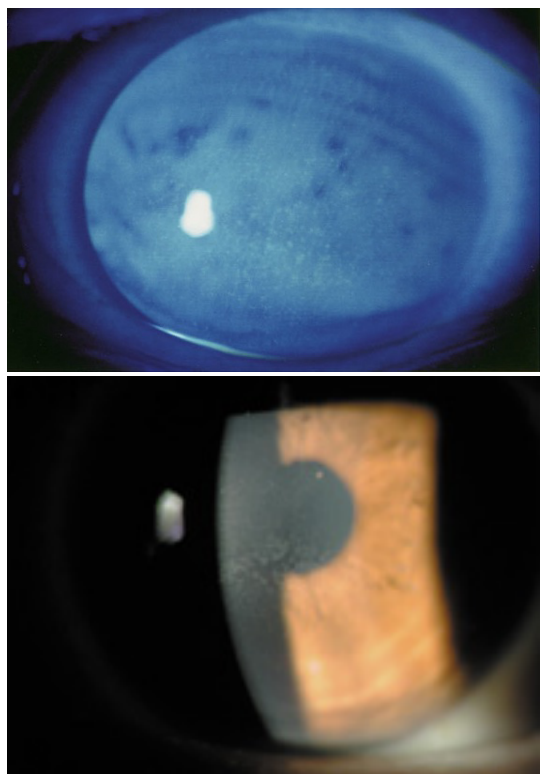


Figure 1B. Dry eye keratopathy

surgery and in those referred to us with punctate keratopathy associated with contact lens wear (Figure 1). Optive contains carboxymethylcellulose as well as glycerin which, in combination, lubricates and protects the epithelium from hypertonic stress. The preservative Purite has been very well tolerated in our patients even with frequent dosing. We have found that SPK resolves with Optive where it was persistent with other drops such as Refresh Plus and Systane. ■

New reason for post-LASIK refractive error

One of the many reasons why LASIK enjoys the success it does is because if additional treatment is required, it can be accomplished very easily and with excellent result, giving the patient the vision they want. It can be done as soon as six months after the original procedure or as late as a decade after. When evaluating a patient for an enhancement, however, we need to proceed with caution. We

need to make sure that anterior segment Visante OCT is performed to determine if the residual stromal bed is thick enough for additional laser treatment. We also need to evaluate the quality of the epithelium to make sure that the patient does not have epithelial basement membrane dystrophy resulting in thickened and irregular epithelium that could be causing "pseudo-refractive error." Our recent data on the series of patients with EBMD whom we treated with PTK alone to correct post-LASIK refractive error was accepted for publication to the Journal of Refractive Surgery.

Additionally, we need to make sure to cycloplege the patients presenting with post-LASIK manifest refractive error to make sure the refractive does not go away once accommodation is relaxed. At the recent ARVO and ASCRS meetings, we presented data on vision therapy to treat these patients.

We have now discovered another possible reason for refractive error after LASIK: Cymbalta anti-depressant medication (Figure 2). Cymbalta is a norepinephrine and serotonin re-uptake inhibitor with a weak anticholinergic action.

We have submitted the following abstract to the upcoming AAO meeting: Myopic Shift Associated with the Use of Cymbalta Antidepressant.

We present two cases of myopic shift associated with the use of Cymbalta antidepressant medication. Both patients had previous LASIK for moderate myopia with subsequent laser retreatments within 6 months. After 4 years of stable visual acuity, both patients presented with blurry vision and a myopic shift of -1.50 diopters in one patient and -1.75 diopters in the other. Both patients reported starting Cymbalta within the previous year correlating with a decrease in vision. The medication was discontinued with full visual recovery in one patient within 1 month but no change in refraction for the other. Cymbalta may cause a potentially reversible myopic shift in some patients.

Patients presenting for a possible enhancement after laser vision correction need to be evaluated to make sure that their refractive error is not due to a reversible factor. ■



Figure 2. Cymbalta anti-depressant medication

New look at irregular topography

The corneal topography can be “regularly irregular” or “irregularly irregular.” Regularly irregular topography (inferior steepening, or asymmetric bowtie, for example) may indicate a corneal thinning disorder. Irregularly irregular topography can also be seen in a corneal thinning disorders, but may also be seen in contact lens overwear and epithelial basement membrane dystrophy (EBMD). Diagnosing EBMD prior to laser vision correction steers the patient toward PRK rather than LASIK. Even when the patient is asymptomatic and no signs of EBMD are seen at the slit lamp, irregular topography may indicate subclinical EBMD. In patients with such topography, the keratoconus screen with Oculus Pentacam is typically negative.

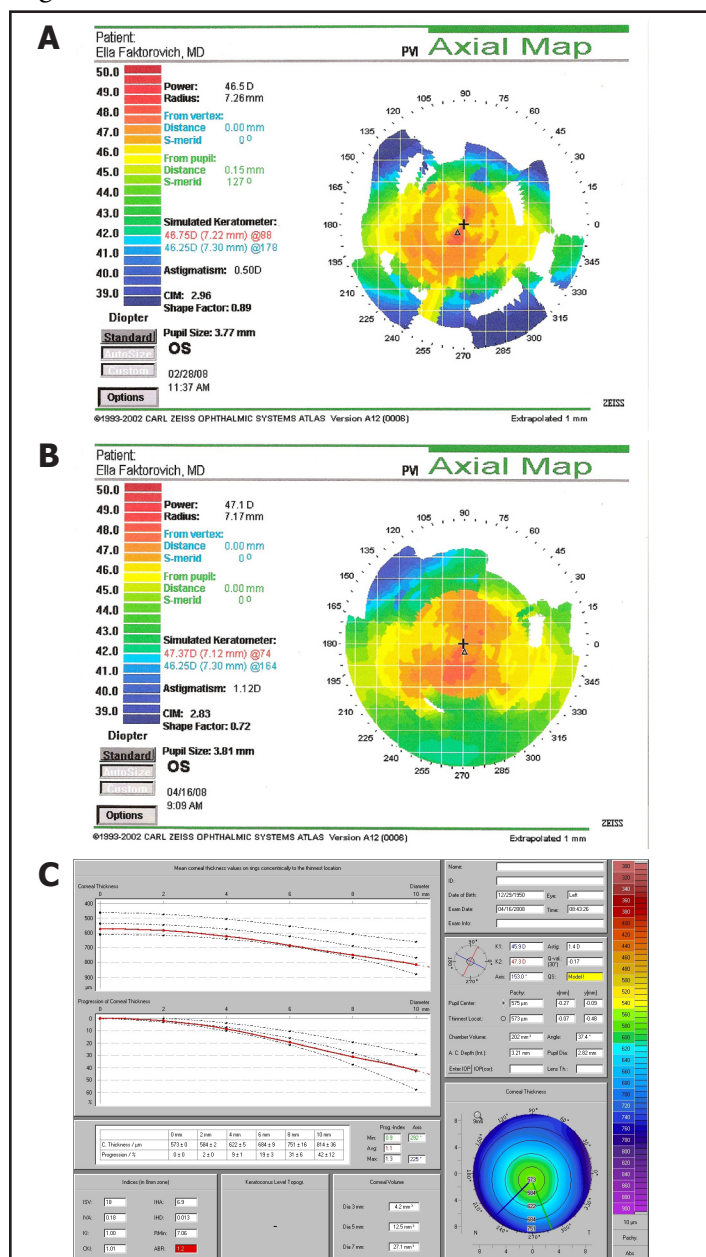


Figure 3. Topography of the left eye (A), topography of the left eye 5 weeks later (B), Pentacam of the left eye, keratoconus screen is negative (C)

Patient in Figure 3 was diagnosed with subclinical EBMD based on the irregularly irregular topography that failed to normalize after five weeks without contact lenses. She underwent PRK with good result. ■

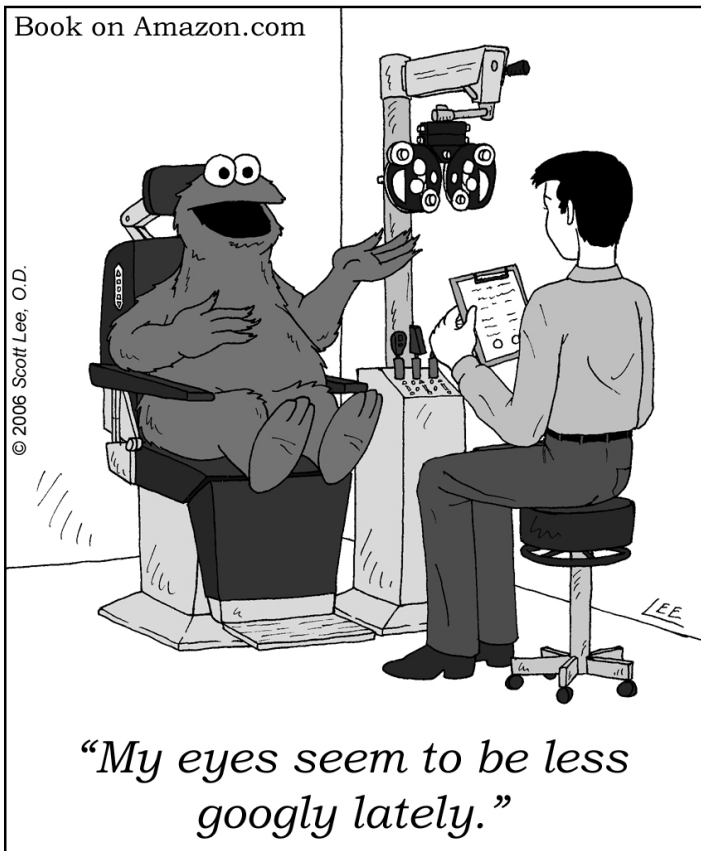
Calendar of PVI Grand Rounds

By invitation only:

- 07/24/08 Phakic IOL Patients
- 08/28/08 Ocular diagnostics
- 09/25/08 Cataract and Lens Surgery
- 10/23/08 Refractive Surgery
- 11/20/08 Glaucoma
- 12/18/08 PVI Holiday Dinner (Practice Management Pearls)
- 01/22/09 Retina
- 02/26/09 Binocular vision
- 04/23/09 8th Annual San Francisco Cornea, Cataract, and Refractive Surgery Symposium

Sight Gags by Scott Lee, O.D.

Book on Amazon.com



Scott F. Lee, O.D., Editor-in-Chief, eFocus.

Contact information: drlee@pacificvision.org, 415.922.9500