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Pacific University College of Optometry

EYE ON PACIFIC

News for local referring providers

Summer | 2014

Diagnosis and Treatment of Meibomian Gland Dysfunction

As vision subspecialties continue to grow, we can ensure that patients continue to get the care they deserve.

TRACY DOLL, OD, FAAO | MEDICAL EYE CARE SERVICE

Meibomian gland dysfunction (MGD) is the leading cause of evaporative dry eye. The cycle of blocked glands, gland damage, chronic inflammation, and decreased healthy lipid layer is insidious.

New in-office diagnostic and treatment techniques can offer substantial relief for burning, stinging, and redness that accompany this type of dry eye. At-home treatments such as hot compresses and lid massage often have poor compliance. Pacific University offers several new techniques to easily screen for patients who may be candidates for novel in-office treatment procedures.

Evaluation of the meibomian glands can be performed with infrared imaging. A variety of cameras and hand-held devices are available with infrared capabilities, including the Oculus Keratograph 5M. The anterior-segment module of a Spectralis OCT can also image meibomian glands using the infrared mode. Using autofluorescence, healthy meibomian glands appear

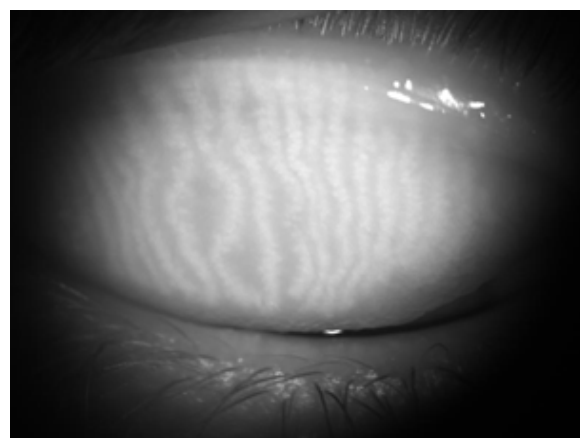


Figure 1: Meibography of healthy glands using infrared photography at Pacific University

stark white (Figure 1). Blocked meibomian glands and truncated, non-functional glands will appear black. This loss of light passing through the glands is a qualitative means of detecting MGD.

Meibomian Gland Dysfunction (cont.)

TearScience offers two different technologies that allow practitioners to evaluate the lipid layer of the tear film. The Meibomian Gland Evaluator (MGE, Figure 2) is a small tool that can be used to express the glands with the same pressure as an average blink (0.3 lbs per square inch). By watching how many glands are secreting behind the biomicroscope, the practitioner can determine if the meibomian glands are healthy. Less than six clear, oil secreting glands per eyelid could leave the patient symptomatic.



Figure 2: The TearScience Meibomian Gland Evaluator

The LipiView, also from TearScience, uses interferometry to measure the thickness of the lipid layer of the tears. A lipid layer thinner than 90 ICU is correlated with symptomatic MGD. Additionally, LipiView quantifies the number of incomplete blinks that may be adding to the patient's dry eye symptoms.

Another clear sign that eyelid margins are unhealthy is lid wiper epitheliopathy (LWE). Instillation of ophthalmic vital dyes will not only stain punctate erosions of the cornea and conjunctiva but also stain the damaged and keratinized eyelid epithelium coming in contact with the dry bulbar conjunctiva and cornea. LWE can be seen with vital dyes as a band of staining along the lid margin. A thick line extending from the lid margin to the meibomian gland openings would indicate severe dryness (Figure 3). This line is called the line of Marx.

Once meibomian glands have been determined to be the root cause of dryness, newer therapies can be applied to help open the glands and enable secretion. One way to keep the meibomian glands open is to remove blockage of damaged keratinized epithelial cells from the gland openings. Gentle debriding of the line of Marx can

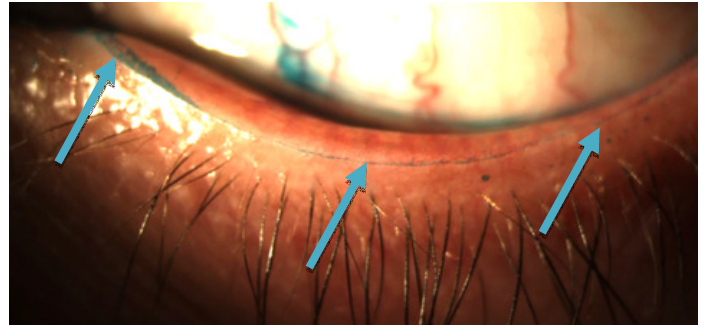


Figure 3: Line of Marx stained with Lissamine Green. The staining is thicker nasally than centrally.

be performed using a golf spud with very little patient discomfort. If blepharitis is concurrent, BlephEX (Figure 4) can be used to completely debride the lash line. This tool is very similar to an Alger brush. It has a surgical grade PVC sponge that is dipped in lid scrub solution. The sponge rotates at 1,000 RPM. The goal here is to remove all exotoxins and scurf that are associated with Demodex blepharitis. Debridement is recommended every four to six months.

Once the meibomian gland openings are debrided, in-office meibomian gland expression can be performed. Expression of these glands while cold is not recommended. It takes 20-30 pounds of pressure to express a gland in room temperature, while the pain threshold for expression, even with topical anesthesia, is usually 10-20 pounds. Liquefying the secretions using heat is always more comfortable. Gland secretions melt when a constant temperature of 113° F can be applied for around 4 minutes. Heating eye masks and goggle systems are widely available to warm the lids prior to expression. While cotton-tip applicators can be used to



Figure 4: The BlephEx instrument

Meibomian Gland Dysfunction (cont.)

express the glands after heating, meibomian gland forceps can apply more consistent pressure and have smoother edges which can lead to better patient comfort. Meibomian glands should be expressed one to four times yearly to augment their treatment and keep the glands functional.

Although not currently available at Pacific University, meibomian glands can be evacuated fully using the newly FDA approved LipiFlow (Figure 5). This uses a disposable applicator placed between the globe and the eyelid that applies constant pulsatile pressure and heat to the eyelids from both sides. Treatment takes 12 minutes per eye and is painless due to the correct combination of heat and pressure. Completely opening up the glands allows restoration of the normal function, improving tear quality and reducing the inflammatory cascade.

Newer techniques treating all levels of MGD can

be combined with classic treatments including omega-3 fatty acid supplementation, low dose doxycycline regimens, topical azithromycin, lipid-based artificial tears (i.e. Systane Balance), lid hygiene, and blink exercises.

Proper diagnosis and treatment of MGD is critical because once meibomian glands have been severely damaged, it can be difficult for the lipid layer to regain normal function. Pacific University Medical Eye Care Service doctors are happy to help if you have any questions about the management of MGD.



Figure 5: The LipiFlow instrument

Advances in Pediatric Eye Care

JP LOWERY, OD, FAAO | PEDIATRIC VISION SERVICE CHIEF

You may have heard of the new Children's Vision Law in Oregon. Starting this month, children 7 years or younger who are starting any public education program are required to have a vision screening or a comprehensive eye exam. You may also be aware that under the Affordable Care Act, children's vision care is now considered an "essential health benefit" and must be included in all basic health plans. These are both great strides toward making sure our children have the best vision possible as they grow and develop into adults. But now the responsibility falls on us, the Optometric Physicians of Oregon, to provide high quality eye care for the children entrusted to us.

Pacific University is here to help you in this endeavor. Pacific University has a dedicated pediatrics clinic at each of our five clinic sites. No

matter what your comfort level is with children, there are always cases that come up for which it would be nice to have some back-up. This may be as simple as an

uncooperative child who won't sit still enough to perform retinoscopy, or a complex strabismus or amblyopia case. We understand the challenges of examining children in a busy primary care setting, so don't hesitate to send us kids who leave you with that feeling that maybe there's more going on.



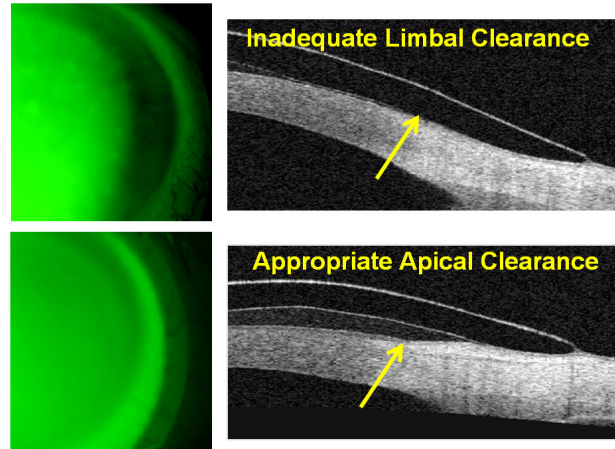
Advances in Contact Lenses

MATT LAMPA, OD, FAAO | CONTACT LENS SERVICE CHIEF

In the design and prescribing of contact lenses the eye care practitioner has traditionally been aided by manual keratometry and slit lamp examination in the trial lens fitting process. Today we are learning immense amounts about the shape of the anterior segment though instruments like the corneal topographer and anterior segment OCT.

Not only have these instruments taught us about the shape of the eye to better design lenses, but they also provide useful information in the fitting process. Through the difference display feature within the corneal topography software we are able to see how corneal curvature changes from pre- to post-fitting. The post-orthokeratology axial (power) and tangential (position) displays are dramatic examples of this.

Also, through using a specific anterior segment OCT or the anterior segment attachment found on



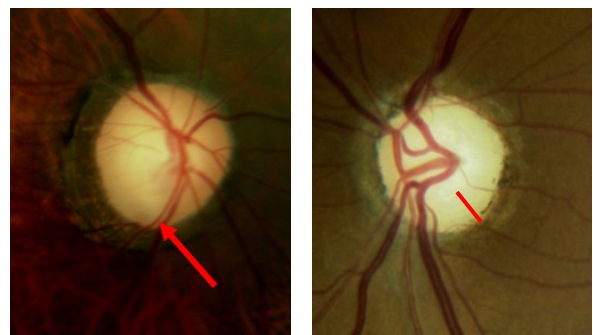
a spectral domain OCT, you can obtain a live image of the scleral lens to cornea and lens to sclera fitting relationship. This is extremely valuable, as tear exchange and the resulting fluorescein pattern once a lens has settled is otherwise difficult, if not impossible, to evaluate.

Advances in Neuro-Ophthalmic Disease

DENISE GOODWIN, OD, FAAO | COORDINATOR, NEURO-OPHTHALMIC DISEASE SERVICE

The most common optic neuropathy is glaucoma. However, cupping is common in compressive optic neuropathy, congenital optic neuropathies, and in those with a history of optic nerve trauma, optic neuritis, or AAION. Differentiating glaucoma from these conditions can be difficult even for experienced clinicians, particularly if IOP is normal. Here are some tips to help.

1. Loss of acuity and color vision occurs late in glaucoma. These are typically (but not always) affected early in other optic neuropathies.
2. Pallor of the neuroretinal rim is 90% specific for non-glaucomatous optic neuropathy. In glaucoma the remaining rim should retain a normal pink hue.
3. Generally, cupping in non-glaucomatous optic neuropathy is less severe. Focal notching or diffuse obliteration of the rim is 87% specific for glaucoma.
4. Drance hemorrhages indicate glaucoma



Glaucomatous nerve (left) with focal rim thinning (arrow) and pink rim. Non-glaucomatous nerve (right) with pallor of the remaining rim (line indicating width).

progression and are up to 100% specific for glaucoma compared to non-glaucomatous optic neuropathies.

The correct diagnosis is critical because it significantly affects the management of the patient. If you have questions about a patient don't hesitate to contact me at goodwin@pacificu.edu.

Advances in Binocular Vision

HANNU LAUKKANEN, OD, MEd, FAAO | VISION THERAPY SERVICE CHIEF

The recent acquisitions of the Sanet Vision Integrator (SVI) to our Vision Therapy Service is enthralling patients, interns, and attending doctors. The SVI is an interactive, computer-assisted therapy platform designed to provide immediate visual-motor feedback to the user in order to enhance vision, cognition, and balance, as well as the integration of these functions. Intriguingly, it “talks” to the user.



Pacific's new Sanet Vision Integrator

The SVI is effective for a broad range of visual conditions and dysfunctions. Skills we have been enhancing with the SVI include pursuits, saccades, fixation stability, eye-hand coordination, visual reaction time, speed and span of recognition, automaticity, contrast sensitivity, and visual and auditory sequencing and memory. With the SVI, we can better treat higher-level integration problems, such as visual-vestibular integration problems, visual-spatial neglect, and auditory-visual issues that are often related to reading and

math problems. Other indications include sports vision enhancement with athletes, treatment of patients with strabismus/amblyopia, visually-related learning problem skill development, and restorative-care for individuals whom have sustained a brain injury.

We are pleased to offer our new SVI treatment to your patients. To see and experience one of our SVIs, swing by one of our Vision Therapy Services!

Faculty in the News

CAROLE TIMPONE, OD, FAAO, FNAP | ASSOCIATE DEAN OF CLINICAL PROGRAMS

I am pleased to announce our newest faculty additions to Pacific's EyeClinics administrative team. Our incoming Director of the Hillsboro EyeClinic is Len Koh, PhD, OD, MBA, FAAO. Dr. Koh joined PUCO in 2007, after his optometry training at New England College of Optometry and residency at Pennsylvania College of Optometry. Prior to optometry, he obtained his PhD in Pharmacology from the University of Toronto and worked as a research fellow at two branches of the National Institutes of Health. Recently, he completed his MBA in health care management. For the past several years, he has been the Chief of Medical Eye Care at the college. He is friendly, resourceful and passionate about eye care.

Lorne Yudcovitch, OD, MS, FAAO, has been named the new Chief of Medical Eye Care. Dr. Yudcovitch, a graduate of Pacific University, served as Clinic Director of Pacific's Northeast and Southeast Portland Eye Clinics. He is currently a lead instructor of the Patient Care, Ocular Therapeutics, and Ocular Disease courses. He is also a Medical Eye/Ocular Disease clinic attending. Areas of expertise and interest include advanced ocular imaging, diabetes and glaucoma management, pharmacological treatment, and pediatric examinations. In his spare time, he is an accomplished musician and filmmaker.

Our clinical faculty is here to help you with patient consultations and referrals. Please let us know how we can best serve your needs!

CE Opportunities

August:

-Teplick: A Glaucoma-thon with Murray Fingeret and Special Guests; Living Room Theaters, Portland, OR; Aug. 9

-OOPA Advanced Ocular Therapeutic Injections Lab; Jefferson Hall, Forest Grove, OR; Aug. 10, 8:30-4:30

September:

-PUCO Tualip CE; Tualip, WA; Sept. 14

October:

-PUCO Research Conference; Jefferson Hall, Forest Gove, OR; Oct. 3-4

-GWCO; Oregon Convention Center, Portland, OR; Oct. 9-12

January:

-PUCO Glaucoma Symposium; Willows Lodge, Woodinville, WA; Jan. 20

Research Opportunities

We are recruiting patients for two National Eye Institute sponsored studies. The Convergence Insufficiency Treatment Study is evaluating the effectiveness of home-based therapy for symptomatic convergence insufficiency. Children should be 9 to <18 years of age with symptomatic convergence insufficiency. The Hyperopic Treatment Study is evaluating when to prescribe for hyperopia in very young children. We are recruiting hyperopes +3.00 to +6.00. There are 2 Cohorts: children 12 to <36 months of age and 36 to <72 months of age. For recruitment criteria or to refer a candidate, please contact study coordinator, Jayne Silver, at jaynesilver@comcast.net or 503-804-8241.

Practice Management Tips

BARBARA COLTER | DIRECTOR OF CLINICAL OPERATIONS

Today, more than ever, optical professionals are challenged to really wow the patient. A memorable experience will create a loyal patient for life, but providing the best optometric care in the exam room is not enough. In order to really wow the patient and make your office memorable, your office staff must be top-notch. Over 65% of dissatisfied customers/patients will go elsewhere - not because the price was too high or the quality was bad, but because they are put off by employee attitudes.

Providing the perfect patient experience means making sure your office is in order. Follow these steps and see what a difference it will make to your patients:

1. Focus on "internal customer service" - the way each person in your office interacts. If the office staff is (or isn't) working as a team, the patient will take note.

2. Become the best communicator you know. Take it upon yourself to set the tone of your office staff.
3. Keep all employees in the know. Hold regular, organized staff meetings. Give everyone a chance to contribute. Use these meetings to address positive patient interactions as well as those interactions that might have needed a different perspective.
4. Cross train ALL employees. It may seem obvious, but this is often overlooked. Remember that patients do not differentiate staff members by department.
5. Know the top 10 questions/concerns of your patients. Address these in your office meetings. Create a script for each member of your team so everyone is answering these concerns in a uniform manner.
6. Reward a job well done. Loyal staff will move mountains for you as a provider. Make sure they know you recognize and appreciate their efforts.

Referral Service Contact Numbers

Pacific EyeClinic Forest Grove

2043 College Way, Forest Grove, OR 97116

Phone: 503-352-2020

Fax: 503-352-2261

Vision Therapy: Scott Cooper, OD; Graham Erickson, OD; Hannu Laukkanen, OD; JP Lowery, OD

Pediatrics: Scott Cooper, OD; Graham Erickson, OD; Hannu Laukkanen, OD; JP Lowery, OD

Medical Eye Care: Ryan Bulson, OD; Tracy Doll, OD; Lorne Yudcovitch, OD

Low Vision: Karl Citek, OD; JP Lowery, OD

Contact Lens: Mark Andre; Patrick Caroline; Beth Kinoshita, OD; Scott Pike, OD

Pacific EyeClinic Cornelius

1151 N. Adair, Suite 104 Cornelius, OR 97113

Phone: 503-352-8543

Fax: 503-352-8535

Pediatrics: JP Lowery, OD

Medical Eye Care: Tad Buckingham, OD; Len Koh, OD; Sarah Martin, OD; Lorne Yudcovitch, OD

Pacific EyeClinic Hillsboro

222 SE 8th Avenue, Hillsboro, OR 97123

Phone: 503-352-7300

Fax: 503-352-7220

Pediatrics: Ryan Bulson, OD

Medical Eye Care: Tracy Doll, OD; Dina Erickson, OD; Len Koh, OD

Neuro-ophthalmic Disease: Denise Goodwin, OD

Pacific EyeClinic Beaverton

12600 SW Crescent St, Suite 130, Beaverton, OR 97005

Phone: 503-352-1699

Fax: 503-352-1690

3D Vision: James Kundart, OD

Pediatrics: Alan Love, OD

Medical Eye Care: Drew Aldrich, OD; Ami Halvorson, OD

Contact Lens: Matt Lampa, OD

Pacific EyeClinic Portland

511 SW 10th Ave., Suite 500, Portland, OR 97205

Phone: 503-352-2500

Fax: 503-352-2523

Vision Therapy: Bradley Coffey, OD; Ben Conway, OD; Scott Cooper, OD; James Kundart, OD

Pediatrics: Bradley Coffey, OD; Ben Conway, OD; Scott Cooper, OD; James Kundart, OD

Medical Eye Care: Ryan Bulson, OD; Candace Hamel, OD; Scott Overton, OD; Carole Timpone, OD

Contact Lens: Mark Andre; Candace Hamel, OD; Matt Lampa, OD; Scott Overton, OD; Sarah Pajot, OD

Neuro-ophthalmic Disease/Strabismus: Rick London, OD

Low Vision: Scott Overton, OD

When scheduling an appointment for your patient, please have the patient's name, address, phone number, date of birth, and name of insurance, as well as the type of service you would like Pacific University eye clinics to provide.