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CONTENTS

On the Cover

The view through a Peli lens for right hemianopia as described by Moore et al. in this month's case report.

Bridging the Divide

This coming September will mark 40 years since I became an optometry student at the University of Waterloo (UW). There has been much progress in our profession since 1975, notably in the technology we use for diagnosis and management of our patients' oculovisual problems and in the resulting interactions with other health professionals.

In the "good old days" (really?) optometrists encountered a lot of resistance, if not outright hostility, from some other health professions. Even at UW, I recall that into the 1980s, optometry faculty had a hard time being recognized by some quarters of the University as true scholars, let alone scientists and clinicians in their own right. Our professional relationships with organized medicine, particularly ophthalmological organizations, could sometimes best be described as toxic.

With the passage of time, things have changed a great deal, mostly for the better. Although ODs are sometimes still discouraged from attending certain ophthalmology conferences, for the most part the welcome mat is there. For example, optometric research is well represented at the annual conference of the Association for Research in Vision and Ophthalmology (ARVO), and many papers from optometric researchers appear in ARVO's flagship publication *Investigative Ophthalmology and Vision Science* and other major ophthalmological and vision science peer-reviewed journals.

In clinical practice, we have seen the rapid development of co-management of various clinical conditions by optometrists and ophthalmologists, much more collegial interactions between practitioners than was the norm when I was a newly graduated optometrist, and much more collaboration. A good example is "Brief Guide for Primary Care Physicians – Glaucoma" (http://opto.ca/document/primary-care-physician-guide-glaucoma), which was prepared by a team of optometrists and ophthalmologists. The trend toward multidisciplinary collaboration in clinical care and research is a healthy one and should benefit our patients.

On our website, you will find the newest result of the collaboration between optometry and ophthalmology. The Eye Health Council of Ontario has produced a new Guideline on management of age-related macular degeneration (AMD). This document lays out the roles of health care providers in the diagnosis and management of patients with AMD and provides family physicians and nurse practitioners with important guidance on how to support these patients. Although it was written for Ontario practitioners, the information is useful to all ODs across Canada. I hope you will enjoy reading it.

B. Ralph Chou, MSc, OD, FAAO
Editor-in-Chief

Jeter des ponts

Le mois de septembre prochain marquera le 40e anniversaire de mon entrée à la faculté d'optométrie de l'Université de Waterloo. Notre profession a beaucoup évolué depuis 1975, notamment en ce qui touche les technologies de diagnostic et de prise en charge des troubles oculovisuels chez nos patients et nos interactions avec les autres professionnels de la santé.

Dans le bon vieux temps (si on peut dire!), les optométristes devaient faire face à beaucoup de méfiance – voire à une franche hostilité – de la part de ces derniers. Je me souviens que même à l'Université, dans les années 1980, les membres de la faculté d'optométrie avaient du mal à être reconnus par certains intervenants de l'établissement comme de vrais savants, des scientifiques et cliniciens à part entière. Nos relations professionnelles avec la communauté médicale, notamment les associations d'ophtalmologues, auraient parfois pu être qualifiées de « toxiques ».

Les choses ont beaucoup changé depuis, souvent pour le mieux. Même si on décourage encore parfois les optométristes de participer à certains congrès d'ophtalmologie, la plupart du temps, ils sont accueillis à bras ouverts. Les chercheurs en optométrie sont d'ailleurs bien représentés au congrès annuel de l'Association for Research in Vision and Ophthalmology (ARVO), et publient nombre d'articles dans la principale revue de cette association, *Investigative Ophthalmology and Vision Science*, de même que dans d'autres revues à comité de lecture en ophtalmologie et en sciences visuelles.

Dans la pratique clinique, nous assistons à la progression rapide de la cogestion entre optométristes et ophtalmologistes dans divers contextes, à des interactions beaucoup plus agréables entre praticiens que lorsque j'ai fini mes études, et à une bien meilleure collaboration. Le guide sur le dépistage du glaucome (http://opto.ca/fr/document/le-depistage-du-glaucome-a-angle-ouvert) en est un bon exemple : il a été rédigé par une équipe composée d'optométristes et d'ophtalmologistes. La tendance à la collaboration interdisciplinaire dans la recherche et dans les soins est saine, et profitera à nos patients.

Vous trouverez dans notre site Web les plus récents résultats de cette collaboration entre optométristes et ophtalmologues : le Eye Health Council of Ontario a produit de nouvelles directives sur la prise en charge des patients souffrant de dégénérescence maculaire liée à l'âge (DMLA). Le document décrit le rôle des professionnels de la santé dans le diagnostic et la prise en charge des patients, et formule à l'intention des médecins de famille et des infirmières praticiennes des conseils importants sur le soutien qu'ils peuvent offrir aux malades. Même si les directives s'adressent aux professionnels de l'Ontario, elles seront utiles à tous les optométristes du Canada. J'espère que vous en apprécierez la lecture.

B. Ralph Chou, M. Sc., O.D., F.A.A.O
Éditeur en chef

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Menicon

Management of Post-LASIK Keratoectasia with a Piggyback Contact Lens System

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Abstract

This case report highlights the clinical challenges involved in managing a patient with post-LASIK keratoectasia. A single case is presented with a focus on contact lens fitting and concurrent ocular surface disease. A review of the literature indicates that current screening methods prior to refractive surgery have made improvements for detecting patients at higher risk of serious complications. Possible treatment options for iatrogenic keratoconus include contact lenses, intrastromal corneal ring segments, corneal cross linking, and keratoplasty. This report demonstrates that post-LASIK keratoectasia with concurrent ocular surface disease can be successfully managed with a piggyback contact lens system

KEY WORDS:
Post-LASIK keratoectasia, ectasia, piggyback lenses, post-LASIK dry eye, gas permeable contact lenses

Résumé

L'article décrit les défis cliniques soulevés par la prise en charge d'un patient atteint d'une kératectasie post-LASIK. Un seul cas est présenté; on met l'accent sur l'ajustement de la lentille et une affection concomitante de la surface oculaire. Selon la littérature, les méthodes de dépistage actuelles permettent de mieux identifier, avant une chirurgie réfractive, les patients qui risquent de présenter des complications graves. Plusieurs traitements existent pour le kératocône iatrogène, dont les lentilles de contact, les anneaux cornéens intrastromaux, la réticulation de la cornée et la kératoplastie. Le cas rapporté ici montre que l'on peut traiter efficacement une kératectasie avec affection concomitante de la surface oculaire grâce à un système de lentilles de contact piggyback.

MOTS CLÉS:
Neuropathie optique héréditaire de Lever, réadaptation de la basse vision, multidisciplinaire, habilitation compétitive, counselling

INTRODUCTION

Post-LASIK keratoectasia is a rare but significant vision-threatening complication of refractive surgery.[1] Because this condition is seldom seen, the actual incidence is unknown,[2,3] but some estimates have ranged from 0.04%[4] to 0.2%.[5] The onset of the condition is variable, occurring days to years after the refractive surgery procedure.[1,2,6] The signs and symptoms of iatrogenic keratoectasia resemble keratoconus with progressive corneal thinning and steepening, increasing myopia and irregular astigmatism, and loss of best-corrected visual acuity (BCVA).[1,2,7] Two distinct clinical presentations are identified in the literature, one being described as a central ectasia with little irregular astigmatism and good BCVA that occurs in normal eyes and the other described as a paracentral ectasia more similar to keratoconus with irregular astigmatism and poor BCVA that more often occurs in eyes that have undetected preoperative keratoconus or forme fruste keratoconus.[8–10] Recent histopathological studies of post-LASIK ectasia have implied that it shares a common histopathology with keratoconus, with the exception of lack of endothelial changes seen in the iatrogenic form.[11]

Prevention through pre-screening and identifying poor candidates is essential for avoiding this serious complication.[9] Although there are some established risk factors identified in the literature, they do not explain all cases of post-LASIK ectasia. Abnormalities in preoperative topography are regarded as the most significant risk factor; others include younger age, reduced and/or asymmetric preoperative pachymetry, lower residual stromal bed thickness (RSBT), higher refractive correction, steep preoperative corneal curvature, correction for against-the-rule or oblique astigmatism, number of enhancement procedures, eye rubbing, family history of keratoconus, refractive instability, and male sex.[1,2,4,6,7,9,12,13]

Treatment alternatives usually begin with non-surgical options; patients with mild forms of iatrogenic ectasia can benefit from spectacles or traditional soft contact lenses. However, more advanced cases require specialty contact lenses, such as rigid gas-permeable (GP), scleral, hybrid, or piggyback contact lenses (PBCL).[1,2,7,14] With a corneal shape that is more oblate and irregular, contact lens fitting tends to be more difficult in post-refractive-surgery eyes compared to their non-surgical counterparts. Evidence shows that more chair time is required, there is an increased frequency of office visits, an increased number of lenses are usually required to complete the fit, and more post-refractive-surgery eyes fail contact lens wear.[15,16]

If contact lenses are not successful, there are several surgical alternatives. Intrastromal corneal ring segments have been shown to increase unaided visual acuity, as well as decrease refractive cylinder and spherical equivalent refractive error.[2,17] Corneal cross linking has the ability to increase the biomechanical strength of the compromised cornea, allowing stabilization of progressive post-LASIK ectasia, as well as improve corrected visual acuity.[2,7] Keratoplasty may also be offered as a treatment for iatrogenic ectasia, with the literature favouring anterior lamellar keratoplasty over penetrating keratoplasty due to the reduced complications.[2,12,18]

Piggyback contact lenses involve a soft contact lens (SCL) worn therapeutically under a GP lens, allowing increased comfort with a SCL while maintaining the optical advantages provided by a GP lens.[10,19] Positive-powered lenses are most commonly used for the SCLs because the steeper anterior surface aids in centering the GP lens.[20–22] However, negative powers can be useful for individuals who would like to wear SCLs alone,[20] and one study reported decreased anterior optical aberrations in patients using minus-powered lenses in piggyback contact lens systems.[21] Advantages of the PBCL system include better centration and stability of the GP lens, increased comfort, improved patient tolerance, and corneal protection—all of which promote improvements in visual acuity.[19–22]

Disadvantages involve concerns about oxygen availability; however, recent evidence suggests that corneal physiological requirements are met as long as both the SCL and GP lenses are made in high oxygen permeable materials and adequate movement of the lenses is achieved.[19,20,22] Doubling the number of lenses to handle and maintain decreases convenience, but this is somewhat alleviated with daily disposable replacement schedules for the soft piggyback lens.

Ocular surface disease following refractive surgery correction is a relatively frequent complication. As many as 95% of patients have symptomatic dryness immediately following LASIK, the percentage of which decreases over time.[23] Although estimates of incidence vary considerably, there is general agreement that only a small percentage of individuals develop chronic and severe dry eyes.[1,2,24,25] The primary mechanism is believed to be corneal denervation from flap creation and surface ablation, which results in reduced corneal sensitivity, resulting in decreased feedback to the lacrimal gland through the reflex pathway in the cornea-lacrimal gland functional unit. Consequently, there are decreased neurotrophic influences on epithelial cells, decreased basal and reflex tearing, and decreased blink rate, leading to decreased tear clearance and increased tear evaporation. Abnormal nerve regeneration in the years following LASIK may play a role in persistent ocular surface disease.[2,24–28] Other factors contributing to ocular surface disease after refractive surgery include alterations in corneal shape that disrupt tear film distribution, as evidenced by iron deposition lines on the cornea,[2,25–28] and possible damage to limbal goblet cells by the use of a suction ring.[25–28] Risk factors for developing post-LASIK dry eye in the literature include pre-existing dry eye disease, Asian descent, female sex, lid margin disease, higher refractive correction, deeper ablation depth, and thicker flap.[1,2,27] Preoperative screening is imperative for reducing the frequency of this common complication, including a thorough case history and preoperative testing.[1–28] Treatment of existing ocular surface abnormalities and lid disease will also help prevent the onset of this complication.[1,25,26,28] Other factors, such as the use of femtosecond lasers, nasally hinged flaps, and wider flap hinges, have inconclusive evidence to support their role in preventing ocular surface disease after LASIK.[25–28]

Treatments for post-LASIK ocular surface disease are similar to those for non-surgical eyes, such as artificial tears, identification and treatment of lid disease, punctal occlusion, cyclosporine A, short- term corticosteroid use, autologous serum, bandage soft contact lens, scleral contact lenses, temporary tarsorrhaphy, and amniotic membrane transplant.[1,2,25–28] Future treatment options might also include topical nerve growth factor.[1,2,25–28] Corneal ectasia and dry eye syndrome are challenging post-LASIK complications to treat in isolation, and their coexistence can compound problems, making management even more difficult.

CASE REPORT

L.P. was a 34-year-old man who had uneventful LASIK performed in 1999 at age 23 years. There were no concerns with his general health and no family history of keratoconus. Although the clinic where the LASIK was performed has since closed, our clinic was able to obtain preoperative corneal topography maps and information from follow-up appointments up to three months after the procedure. His corneal topographies before the surgery are shown in Figure 1 and his pre-LASIK data are summarized in Table 1. Interestingly, the ablation depths were greater than average for the intended refractive correction, but after reviewing the surgeon's notes and the literature, we were unable to learn why this occurred. The topography readings in Figure 1 show abnormal topographies with some steepening of these anterior and posterior corneal surfaces on the elevation maps, more so in the left eye.

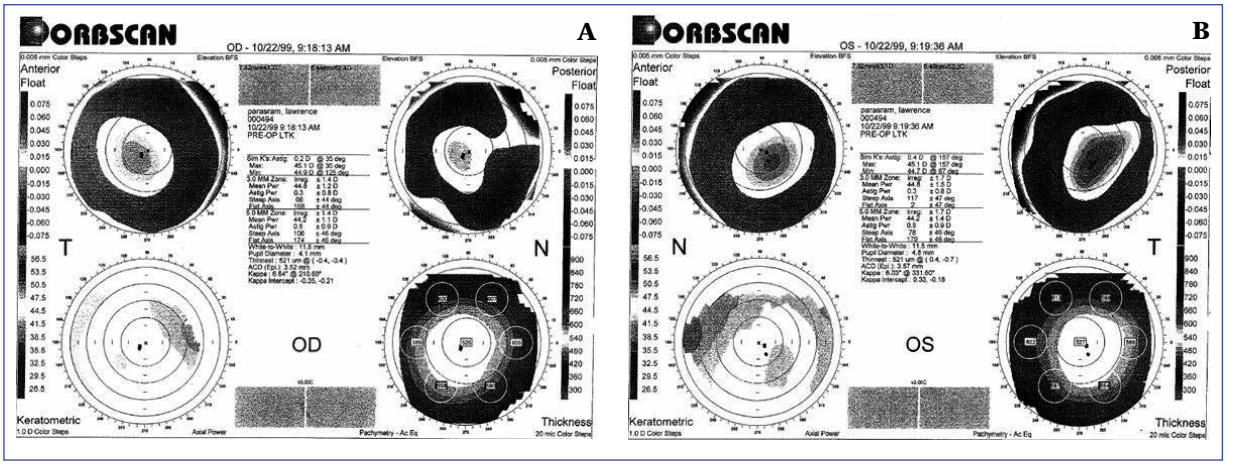

Figure 1. *Patient's pre-LASIK corneal topographies in the (A) right and (B) left eyes. Steepening on the anterior and posterior elevation maps can be seen in both eyes.*

Table 1. Relevant Ocular Data for Patient Prior to the LASIK Procedure in 1999

Eye	Manifest Rx	Visual Acuity	Pachymetry (µm)	Simulated K readings
OD	-3.25 -0.25 × 180	20/20-3	521	44.9 @ 125; 45.1 @ 035
OS	-3.75 -0.50 × 075	20/20-3	522	44.7 @ 067; 45.1 @ 157

Table 2. Information for Patient's LASIK Procedure with a Superior Flap Hinge in Both Eyes

Eye	Attempted Correction	Zone Diameter (mm)	RSBT* (µm)	Ablation (µm)	Header (µm)	Laser Used
OD	-3.50 -0.25 × 180	6.1	272	69	180	Keracor 217
OS	-4.00 -0.50 × 075	6.1	259	83	180	Keracor 217

**RSBT = Residual Stromal Bed Thickness*

Information about the LASIK procedure is given in Table 2. The flap hinge was located superiorly.

At one-week follow-up, micro-striae were noted in the right eye and mild epithelial ingrowth was seen inferior temporally in the left eye. At three-month follow-up, there were no micro-striae noted and the epithelial ingrowth in the left eye was considered stable at <0.5 mm in from the edge of the flap. The manifest refraction at this time was OD +0.50 -0.50 × 160, 20/20 (6/6) and OS +0.75 -0.50 × 040, 20/20 (6/6). Corneal topography in the right eye showed 0.2 D (axis 123°) of corneal astigmatism with corneal radii of flat 41.9 D and steep 42.1 D. The left eye showed 0.7 D (axis 28°) of corneal astigmatism with corneal radii of flat 40.7D and steep 41.4D.

We had no further ocular history information for L.P., until an ophthalmologist referred him to our clinic in 2009 (10 years later) for contact lens management of irregular corneas. At this time, L.P. had been experiencing decreasing vision over the previous year, with the left eye worse than the right. His unaided visual acuity was 20/60 (6/18) in the right eye and 20/400 (6/120) in the left eye. Corneal topography showed central corneal thinning and steepening, with the left eye more advanced than the right. The manifest refraction was OD -0.75 -1.50 × 025, 20/40+2 (6/12+2) and OS +0.25 -1.75 × 120, 20/400 (6/120) in the left eye. He was fit with Rose K2 IC and Rose K (Blanchard Laboratories, Montreal, Canada) corneal GP lenses in the right and left eyes, respectively, and was able to achieve visual acuities of 20/25 (6/7.5) in each eye. L.P. remained in these lenses for the next three years, during which there was some progression of the central steepening that was worse in the left eye, and the left lens was modified to reflect these changes.

During the same time period, L.P. presented to our clinic on several occasions with ocular irritation and superficial punctate keratitis (SPK) that was treated with topical dexamethasone 0.1% and tobramycin 0.3% ophthalmic drops. It was also recommended that he use artificial tears (SYSTANE® Ultra Lubricant Eye Drops, Alcon Laboratories, Inc., Fort Worth, US) for the dryness and discomfort. He was referred to an ophthalmologist for a consultation regarding corneal cross-linking surgery, where it was determined he was not an appropriate candidate.

In 2012, progression was noted again in both eyes and the patient's lenses were becoming increasingly uncomfortable, particularly in the left eye. The manifest refraction was OD -4.00 -0.75 × 020, 20/30 (6/9) and OS: -7.25 -0.50 × 008, 20/30-2 (6/9-2). Both GP lenses showed a flat-fitting relationship centrally, and lenses with steeper base curves were ordered for both eyes. Before delivering the new lenses, the patient returned to the clinic with ocular irritation and SPK in both eyes, but worse in the right. The patient was told to discontinue lens wear temporarily and was prescribed tobramycin again. Once this episode resolved and the lenses were delivered, the right lens continued to show excessive central bearing, so the right eye was refit with a Rose K Post Graft (Blanchard Laboratories) corneal GP lens. At the next follow-up visit, the patient reported persistent and decreasing comfort, especially in the right eye, and his corneas continued to show significant SPK in both eyes, now worse in the left eye. The left Rose K GP lens was modified to a steeper base curve and the patient was instructed to continue with artificial tears.

At his next visit, L.P.'s dryness and discomfort symptoms seemed to have improved in the left eye but persisted in the right eye. He was also developing issues with lens deposits that appeared worse on the right lens. For treatment of the SPK and to increase comfort, the patient was instructed to continue with SYSTANE® Ultra Lubricant Eye Drops (Alcon Laboratories, Inc.) four times a day, and Liposic® Ophthalmic Drops (Bausch + Lomb, Rochester, US) at night were recommended for added therapeutic effect. The patient was also instructed to use Boston® One Step Liquid Enzymatic Cleaner (Bausch + Lomb) in addition to his usual cleaning regimen with Boston Advance® Cleaner and Conditioning Solution (Bausch + Lomb) for the lens deposits. Furthermore, we recommended a lid hygiene routine of hot compresses and lid scrubs to treat a mild underlying meibomian gland dysfunction.

At the next follow-up visit, there were improvements regarding the lens deposits, but the patient continued to experience increased dryness symptoms, and his ocular surfaces showed significant dryness and SPK. The patient reported to be using the artificial tear eye drops about 10 times per day; the pattern of SPK revealed 3 o'clock and 9 o'clock staining from corneal surface desiccation. The artificial tear therapy was switched to Preservative Free SYSTANE® Ultra Lubricant Eye Drops as needed during the day and SYSTANE® Gel Drops at night.

At a subsequent visit, L.P. reported no improvement in his dryness symptoms, and he was becoming increasingly intolerant of his GP lenses. Both lenses showed some inferior displacement, acceptable axial edge clearance, and a three-point touch fitting pattern with fluorescein; however, the left lens showed more than the ideal amount of central bearing (Figure 2). At this time, L.P.'s visual acuities were 20/25+1 (6/7.5+1) in the right eye and 20/25-2 (6/7.5-2) in the left eye. Slit lamp examination revealed marked ocular surface disease and significant SPK at the 3 o'clock and 9 o'clock regions of both eyes. A particularly severe area of coalesced dehydration staining was noted nasally in the right eye (Figure 3). It was decided that a piggyback contact lens (PBCL) system would be implemented, and the patient was fit with 1-DAY ACUVUE® TruEye® (J&J, Jacksonville, FL) silicone hydrogel daily disposable contact lenses in both eyes as a bandage lens under his current GP lenses. Although the GP lenses showed improved centration with good movement of both the soft and rigid lenses and acceptable fluorescein patterns in both eyes (Figure 4), there was still relatively greater central bearing of the GP lens in the left eye. Visual acuities with the PBCL system were 20/25+2 (6/7.5+2) in the right eye and 20/25-1 (6/7.5-1) in the left. The final lens parameters for the GP and soft contact lenses are given in Table 3. L.P. was instructed to continue the lid hygiene regimen, Preservative Free SYSTANE® Ultra, Boston® cleaning system and to rinse his GP lenses thoroughly with saline prior to insertion to ensure the SCLs are not contaminated with the GP solution.

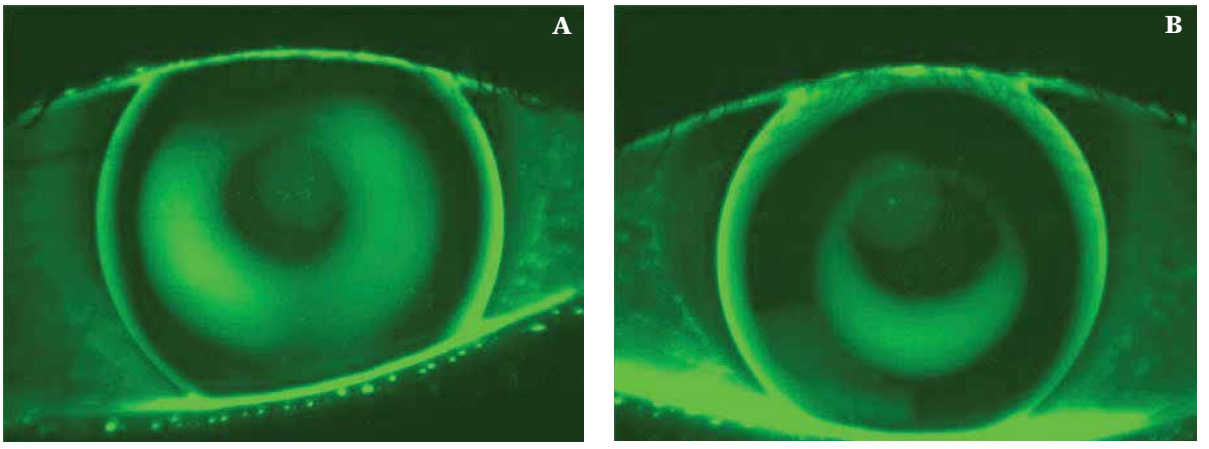

Figure 2. *Fit of GP lenses for patient prior to use of PBCL system. (A) Patient's right eye fit with a Rose K Post Graft corneal GP lens. (B) Patient's left eye fit with a Rose K corneal GP lens.*
Figure Footnote: GP = gas permeable; PBCL = piggyback contact lens.

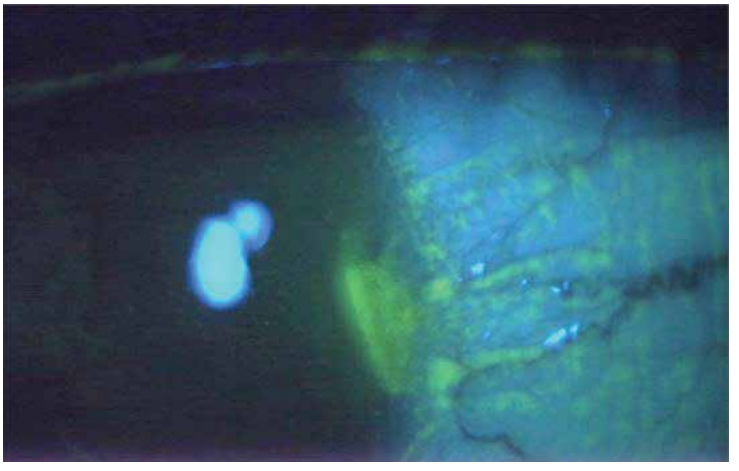

Figure 3. *Severe coalesced SPK from dehydration in the nasal region of patient's right eye prior to implementation of the PBCL system.*
Figure Footnote: SPK = superficial punctate keratitis; PBCL = piggyback contact lens.

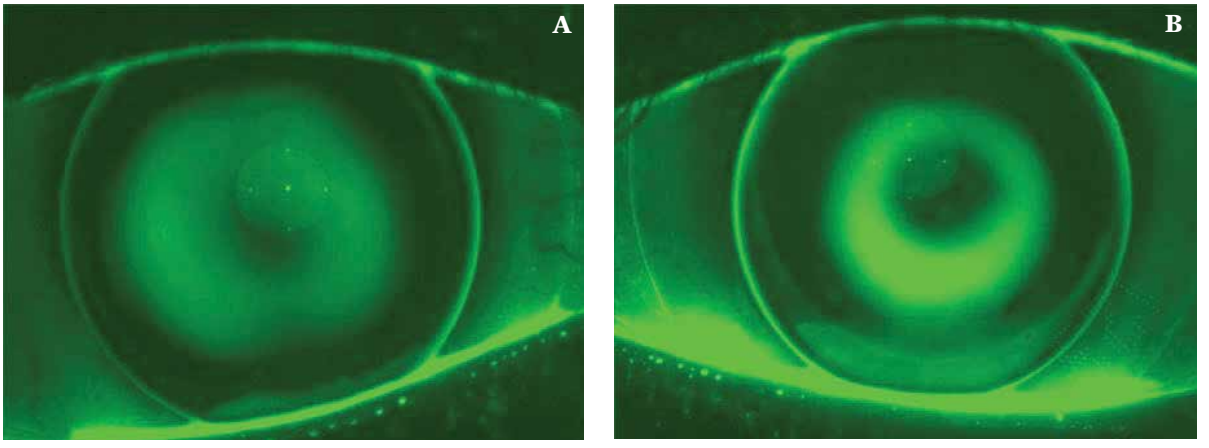

Figure 4. *PBCL fit for patient's (A) right and (B) left eyes shows improved centration and decreased central bearing.*

Table 3. Final Lens Parameters for Patient's Soft- and Gas-Permeable Lenses Used in the PBCL System

Eye	Lens Name	Material	BOZR (mm)	Diameter (mm)	Power (D)	Dk (×10-11)
OD	1-DAY ACUVUE TruEye	Narafilcon A	8.5	14.2	-0.50	100
OS	1-DAY ACUVUE TruEye	Narafilcon A	8.5	14.2	-0.50	100
OD	Rose K Post Graft	Boston XO	7.5	10.2	-4.00	100
OS	Rose K	Boston XO	6.6	9.6	-8.62	100

At one-week follow-up, L.P. reported improved comfort and decreased symptoms of dryness. In fact, he reported his need for artificial tears had reduced to only a couple of times a day. Visual acuities with the PBCL system were 20/20-3 (6/6-3) in the right eye and 20/25+2 (6/7.5+2) in the left. The GP lenses again showed acceptable centration and fluorescein patterns, and there was good movement of both lenses. His ocular surfaces showed dramatic improvements with only trace corneal staining in the right (Figure 5) and left eyes. Because the patient's signs and symptoms were significantly reduced, it was decided there was no further need to address the increased central bearing of the GP lens in the left eye. The patient was instructed to continue with the same PBCL system and cleaning regimen and to use the artificial tears as needed.

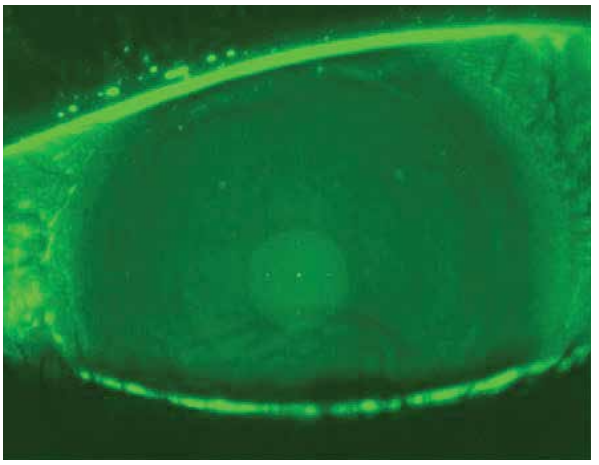

Figure 5. *Patient's right eye after implementing the PBCL system showing significant improvement in the condition of his ocular surface.*
Figure Footnote: PBCL = piggyback contact lens.

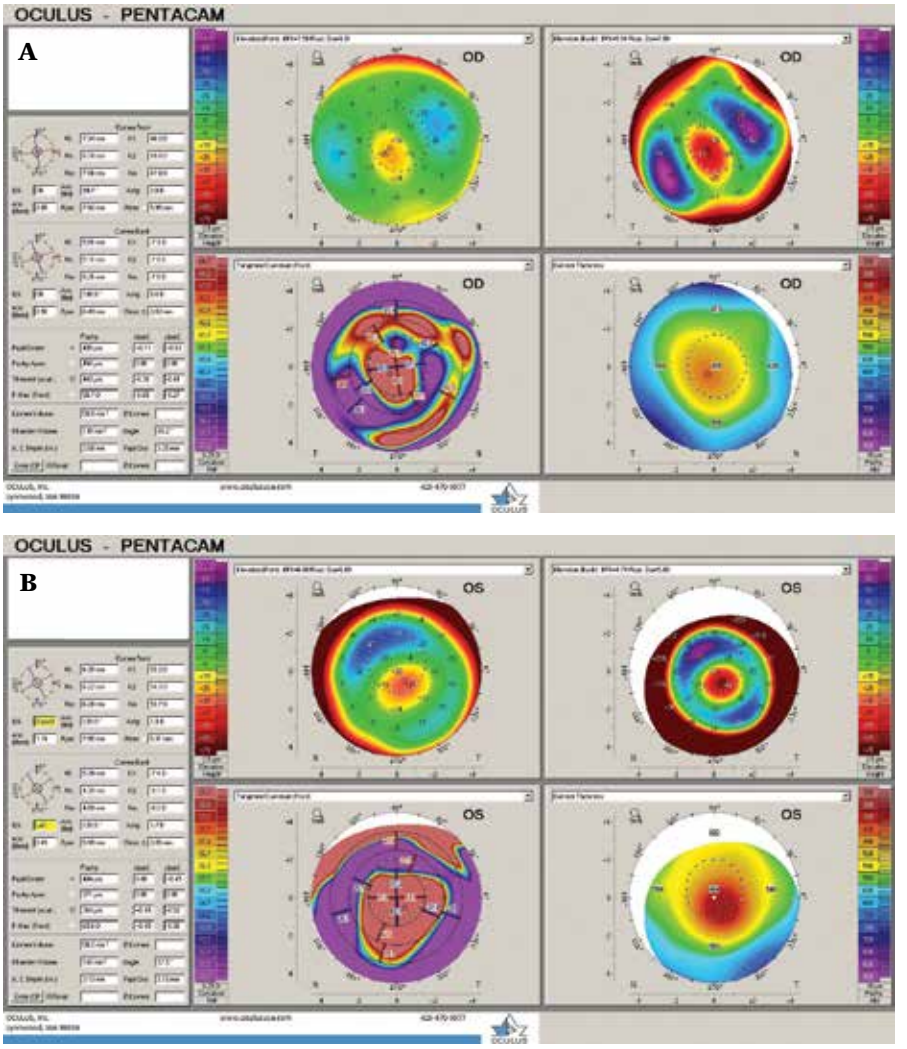

Figure 6. *Most recent Pentacam topography maps for patient's (A) right and (B) left eyes taken in 2013. Both images show marked central steepening and apical thinning that is more advanced in the left eye.*

At the next follow-up visit, L.P. reported further improvement in his ocular comfort and that artificial tears were required less than once a day. The patient continues with the successful PBCL system and can wear the lenses for 16 hours a day. Corneal topographies were taken again; these are shown in Figure 6. The right eye had 3.8 D (axis 99.7°) of corneal astigmatism with corneal radii of flat 46.0 D and steep 49.8 D and thinnest pachymetry of 440 µm. The left eye had 1.1 D (axis 120°) of corneal astigmatism with corneal radii of flat 53.2 D and steep 54.3 D and pachymetry of 344 µm at the thinnest point. The topography readings in Figure 6 show obvious abnormalities with marked steepening and thinning of the corneas and decentered apices.

DISCUSSION

Development of corneal ectasia after refractive surgery is rare, but because the consequences for the patient can be so severe, it is important to prevent this complication. Risk factors for developing ectasia have been difficult to identify in the literature due to the rare incidence and contradicting information. Although it is assumed that removal of excessive amounts of corneal tissue results in a cornea that can be too weak to maintain its structural integrity, there are no consistent measurements for minimum preoperative pachymetry or residual stromal bed thickness (RSBT) that are agreed upon. While the minimum values considered most commonly are 500 µm for preoperative pachymetry and 250 µm for RSBT, there are still significant numbers of reports of patients with measurements greater than these values who develop ectasia, as well as measurements below these cut-offs who do not.[11,13,29]

Abnormalities in preoperative corneal topographies appear to be a more established risk factor. Most cases of iatrogenic keratoectasia have been in patients who showed topographic signs of keratoconus or pellucid marginal degeneration prior to the surgery.[11,13,29] Other risk factors for developing ectasia after refractive surgery mentioned in the literature include younger age, higher refractive correction, steep preoperative corneal curvature, correction for against-the-rule or oblique astigmatism, number of enhancement procedures, eye rubbing, family history of keratoconus, refractive instability, and male sex.[1,2,4,6,7,9,12,13]

The patient presented here had preoperative pachymetry measurements of 521 µm in the right eye and 522 µm in the left eye and RSBT of 272 µm in the right eye and 259 µm in the left eye. The pachymetry values are symmetrical and both are greater than the 500-µm cut-off mentioned. The RSBT measurements exceed the popular 250-µm cut-off but are less than the more conservative 300 µm minimum value. This supports the idea that one value for either pachymetry or RSTB cannot be applied to all cases. The preoperative corneal topographies for this patient show abnormalities, thus reinforcing this as an established risk factor. Because the standard of care regarding diagnosis of keratoconus and prevention of post-refractive ectasia has shown advancements over the past couple of decades,[11] it may be more reasonable to consider that the topography abnormalities were undetected at the time. However, by today's standards, the preoperative maps are certainly suspicious, and this patient would be considered a non-candidate or possibly undergo further investigation before proceeding with the surgery.

In terms of other risk factors for post-LASIK ectasia mentioned in the literature, this patient was a male and young at the time of the procedure (aged 23 years). He also showed a very small amount of against-the-rule astigmatism in the left eye, which contrasts with the small amount of with-the-rule astigmatism in the right eye. This asymmetry between the eyes may be negligible, however, since the magnitude of astigmatism is so small. Notably, the eye that had against-the-rule astigmatism (the left) showed more advanced ectasia. Other risk factors, such as high refractive correction, steep preoperative corneal curvatures, and number of enhancements, did not apply to this patient. There were no data regarding the stability of his refraction or history of eye rubbing from the time of the LASIK procedure.

Some literature identifies two distinct types of post-refractive ectasia. One entity is described as a central ectasia with little irregular astigmatism and good BCVA that occurs in normal eyes, and the other is described as a paracentral ectasia more similar to keratoconus, with irregular astigmatism and poor BCVA that more often occurs in eyes that have preoperative keratoconus,

pellucid marginal degeneration, or forme fruste keratoconus.[8–10] The patient in this report aligns more with the paracentral ectasia more similar to keratoconus. Although there was no obvious irregular astigmatism seen on the corneal topography maps, there is a decentered apex and a reduced BCVA with spectacles in both eyes. Additionally, there were abnormalities in corneal topography prior to the procedure.

The ocular surface disease seen in this patient likely had multiple etiologies. Because the patient had suspicious preoperative corneal topographies, he might have developed keratoconus later in life, even if the LASIK procedure was not performed. If this were the case, he would likely have experienced ocular surface dryness and sensitivities commonly associated with non-iatrogenic keratoconus. Furthermore, a poor lens cornea fitting relationship can exacerbate ocular irritation and dry eye signs and symptoms. Although ocular surface disease after LASIK is a common complication within the first few months, usually only a small proportion of patients develop chronic and severe dry eyes.[1,2,24,25] The primary mechanism for post-LASIK dry eye appears to be a decreased feedback in the cornea-lacrimal gland functional unit as a result of the corneal denervation from flap creation and surface ablation.[2,24–28] Persistent ocular surface disease may be better explained by abnormal nerve regeneration in the years following LASIK.[2,24–28] Since this cannot be measured with clinical methods, it cannot be said for certain whether this was a cause of ocular surface disease in this patient.

Corneal ectasia and dry eye syndrome are challenging post-LASIK complications to treat in isolation, and their coexistence can compound problems, making management even more difficult. The PBCL system employed in this case provided an elegant solution for the difficult lens fit as a result of the irregularly shaped cornea and concomitant ocular surface disease. The soft lens improved centration of the overlying GP lens and reduced the area of bearing on the protruded corneal apices, as evidenced by the fluorescein patterns. The use of a minus power soft lens seemed to help reduce the area of central bearing because of the thinner central thickness profile of the lens design. Although a plus power soft lens might have further improved centration, adequate centration was achieved with the minus power. Thicker centre profile of a plus lens increased the area of central bearing and would have required a new GP lens order.

The improvement in lens fit and centration alone would be expected to aid in improving the condition of the ocular surface. The presence of the soft lens also acted as a bandage to protect the corneal surface from further desiccation and mechanical irritation caused by the GP lens. The overall effect of adding the soft lens was to promote a healthier environment for the corneal surface to heal.

The choice of using a daily disposable soft contact lens for the PBCL was twofold. First, use of a daily lens is ideal when lens deposits are a concern, because the lens has a shorter amount of time for deposits to accumulate. This was an important concern for our patient, because he developed lens deposit issues with his GP lenses, and ocular surface dryness can lead to increased surface deposits. Second, a daily lens is more convenient in terms of handling, since it reduces the number of lenses that require cleaning by half. The use of a silicone hydrogel material was preferred to increase the oxygen available to the eye to promote corneal healing and to avoid hypoxic complications. Adding a soft lens effectively decreases corneal oxygen delivery by increasing the amount of lens material between the atmosphere and the ocular surface. Corneal hypoxia can cause complications such as neovascularization, which may reduce the success of corneal surgery if required by the patient in the future.[30]

CONCLUSION

This case demonstrates successful use of a piggyback contact lens system in a patient with post-LASIK keratoectasia and concurrent ocular surface disease. The therapeutic soft contact lens in the piggyback system improved the fit of the RGP lens and provided protection of the ocular surface that promoted corneal healing and increased comfort. When using a piggyback contact lens system in a patient with ocular surface disease, it is important to consider the contact lens replacement schedule and cleaning regimen, as well as treatment with artificial tears. Successful use of this contact lens system can postpone or eliminate the need for surgical or pharmacological interventions.

REFERENCES

1. Sutton GL, Kim P. Laser in situ keratomileusis in 2010–a review. Clin Experiment Ophthalmol 2010;38:192–210.
2. Bromley JG, Albright TD, Kharod-Dholakia B, et al. Intraoperative and postoperative complications of laser in situ keratomileusis. Expert Rev Ophthalmol 2012;7:25–31.
3. Binder PS, Lindstrom RL, Stulting RD, et al. Keratoconus and corneal ectasia after LASIK. J Cataract Refract Surg 2005;31:2035–8.
4. Randleman JB, Russell B, Ward MA, et al. Risk factors and prognosis for corneal ectasia after LASIK. Ophthalmology 2003;110:267–75.
5. Said A, Hamade IH, Tabbara KF. Late onset corneal ectasia after LASIK surgery. Saudi J Ophthalmol 2011;25:225–30.
6. Randleman JB, Woodward M, Lynn MJ, et al. Risk assessment for ectasia after corneal refractive surgery. Ophthalmology 2008;115:37–50. e4.
7. Brenner LF, Alió JL, Vega-Estrada A, et al. Clinical grading of post-LASIK ectasia related to visual limitation and predictive factors for vision loss. J Cataract Refract Surg 2012;38:1817–26.
8. Comaish IF, Lawless MA. Progressive post-LASIK keratectasia: biomechanical instability or chronic disease process? J Cataract Refract Surg 2002;28:2206–13.
9. Binder PS. Ectasia after laser in situ keratomileusis. J Cataract Refract Surg 2003;29:2419–29.
10. Faraj HG, Gatinel D, Chastang PJ, et al. Corneal ectasia after LASIK. J Cataract Refract Surg 2003;29:220.
11. Rabinowitz YS. Ectasia after laser in situ keratomileusis. Curr Opin Ophthalmol 2006;17:421–6.
12. Saad A, Gatinel D. Bilateral corneal ectasia after laser in situ keratomileusis in patient with isolated difference in central corneal thickness between eyes. J Cataract Refract Surg 2010;36:1033–5.
13. Binder PS. Analysis of ectasia after laser in situ keratomileusis: risk factors. J Cataract Refract Surg 2007;33:1530–8.
14. Marinho A, Pinto MC, Vaz F. Corneal ectasia after LASIK-how to manage. Semin Ophthalmol 2000;15:148–50.
15. Yeung KK, Olson MD, Weissman BA. Complexity of contact lens fitting after refractive surgery. Am J Ophthalmol 2002;133:607–12.
16. Choi H, Kim M, Lee J. Optimization of contact lens fitting in keratectasia patients after laser in situ keratomileusis. J Cataract Refract Surg 2004;30:1057–66.
17. Giasson CJ, Perreault N, Brazeau D. Oxygen tension beneath piggyback contact lenses and clinical outcomes of users. Eye Contact Lens 2001;27:144–50.
18. Javadi MA, Feizi S. Deep anterior lamellar keratoplasty using the big-bubble technique for keratectasia after laser in situ keratomileusis. J Cataract Refract Surg 2010;36:1156–60.
19. López-Alemany A, González-Méijome JM, Almeida JB, et al. Oxygen transmissibility of piggyback systems with conventional soft and silicone hydrogel contact lenses. Cornea 2006;25:214–19.
20. Sengor T, Kurna SA, Aki S, et al. High dk piggyback contact lens system for contact lens-intolerant keratoconus patients. Clin Ophthalmol 2011;5:331–5.
21. Romero-Jiménez M, Santodomingo-Rubido J, Flores-Rodríguez P, et al. Which soft contact lens power is better for piggyback fitting in keratoconus? Cont Lens Anterior Eye 2013;36:45–8.
22. O'Donnell C, Maldonado-Codina C. A hyper-Dk piggyback contact lens system for keratoconus. Eye Contact Lens 2004;30:44–8.
23. Yu EY, Leung A, Rao S, et al. Effect of laser in situ keratomileusis on tear stability. Ophthalmology 2000;107:2131–5.
24. Feng Y, Yu J, Wang D, et al. The effect of hinge location on corneal sensation and dry eye after LASIK: a systematic review and meta-analysis. Graefes Arch Clin Exp Ophthalmol 2013;251:357–66.
25. Shtein RM. Post-LASIK dry eye. Expert Rev Ophthalmol 2011;6:575–82.
26. Ambrosio R Jr, Tervo T, Wilson SE. LASIK-associated dry eye and neurotrophic epitheliopathy: pathophysiology and strategies for prevention and treatment. J Refract Surg 2008;24:396–407.
27. Rosenfeld SI. Evaluation and management of post-LASIK dry eye syndrome. Int Ophthalmol Clin 2010;50:191–9.
28. Nettune GR, Pflugfelder SC. Post-LASIK tear dysfunction and dysesthesia. Ocul Surf 2010;8:135–45.
29. Salz JJ, Binder PS. Is there a "magic number" to reduce the risk of ectasia after laser in situ keratomileusis and photorefractive keratectomy? Am J Ophthalmol 2007;144:284–5.
30. Bachmann B, Taylor RS, Cursiefen C. Corneal neovascularization as a risk factor for graft failure and rejection after keratoplasty. Ophthalmol 2010;117:1300–5.

Le rôle de l'optométriste dans une approche multidisciplinaire de réadaptation pour la clientèle aînée atteinte d'hémianopsie homonyme : un cas clinique

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Résumé

L'hémianopsie homonyme se définit comme une perte congruente d'une moitié du champ visuel affectant les deux yeux. Elle est attribuable à une lésion cérébrale post-chiasmatique. Cette analyse de cas unique montre que l'utilisation de différentes aides optiques (lentilles de Peli, lunettes de lecture et loupes) et l'entraînement au balayage visuel permettent d'améliorer grandement l'autonomie et la qualité de vie d'un usager ayant une hémianopsie. Par souci d'efficience, la réadaptation fonctionnelle des défauts de champs visuels chez les aînés aurait avantage à se faire au sein d'une équipe multidisciplinaire qui inclut un optométriste.

Abstract

Homonymous hemianopia is defined as a congruent loss of half of the field of view in both eyes and is caused by a post-chiasmatic cerebral lesion. This single case report shows that the use of different optical aids (Peli lenses, reading glasses and magnifiers) in combination with a visual scanning training, can improve the autonomy and quality of life of a user suffering from hemianopia. The functional rehabilitation of visual fields defects in the elderly population may be more efficiently managed by a multidisciplinary team that includes an optometrist.

INTRODUCTION

L'hémianopsie homonyme (HH) se définit comme une perte congruente d'une moitié du champ visuel affectant les deux yeux. Elle est attribuable à une lésion post-chiasmatique. Elle peut être causée, entre autres, par une ischémie, une hémorragie, un traumatisme, une inflammation ou une néoplasie[1]. Aux États-Unis, la prévalence de l'HH parmi les individus de plus de 49 ans est estimée à 0,8 %[2]. La cause principale de l'hémianopsie est l'accident vasculaire cérébral (AVC). En effet, parmi les patients ayant subi un AVC, 30 % d'entre eux auraient une hémianopsie homonyme[3,4]. Selon la Fondation des maladies du cœur du Canada, environ 50 000 AVC se produisent chaque année au Canada[5], ce qui permet d'estimer à 15 500 le nombre de nouveaux cas d'HH post-AVC. La perte de l'hémi-champ visuel est particulièrement dérangeante d'un point de vue fonctionnel, causant des difficultés importantes pour l'exploration visuelle, les déplacements et la lecture, ce qui nuit à l'autonomie de l'individu[1]. L'étiologie de l'HH amène souvent d'autres déficits moteurs, sensitifs et/ou cognitifs qui peuvent influencer le pronostic fonctionnel. Lorsque l'HH survient chez une personne âgée, elle peut aussi souvent coexister avec d'autres problèmes visuels (cataractes, glaucome, DMLA, etc...) qui compliquent le processus de réadaptation.

Il n'existe pas à ce jour de traitement clairement établi ni de prise en charge consensuelle pour l'HH[6]. Plusieurs avenues ont été explorées dans le but de limiter les situations de handicap en lien avec l'hémianopsie. Les traitements possibles peuvent être divisés en quatre catégories : l'approche par substitution (aides optiques), l'approche compensatoire (mouvement oculomoteur, stratégie de balayage), l'approche de restauration (*visual restoration therapy,* VRT) et la stimulation des capacités de détection dans le champ visuel aveugle (*blindsight*)[1]. Seules les deux premières ont été utilisées dans le cadre du présent rapport de cas. Parmi les aides optiques, les lentilles de Peli, développés par Eli Peli en 2000[7], sont probablement celles qui présentent le plus d'intérêt à l'heure actuelle [8,9,10]. Elles sont constituées de deux segments de lentilles prismatiques de Fresnel de forte puissance placées en positions supérieure et inférieure sur une des deux lentilles des lunettes de l'usager (Figure 1). Ainsi par un déplacement optique des images du côté de la perte de champ vers le côté sain, ces lentilles permettent d'augmenter le champ visuel de 20 à 30 degrés en latéral, dans deux zones situées en haut et en bas du point de fixation (Figure 2) La portion centrale de la lentille demeure sans prisme afin d'éviter une baisse de l'acuité visuelle et une diplopie centrale[7,8]. Dans une étude multicentrique menée par Bowers, 74 % des 43 sujets ont continué d'utiliser les prismes de Peli de façon continue 6 semaines après leur installation et 47 % les utilisaient toujours après un an[8]. Une autre étude menée ultérieurement par Bowers avec groupe contrôle a aussi confirmé l'efficacité des prismes de Peli dans l'amélioration des déplacements. En effet, 64 % des participants à l'étude ont affirmé que les prismes étaient plus utiles que le placebo[10].

Figure 1. *Lentille de Peli positionnée devant OD. Un montage similaire à celui de l'usagère est porté par l'un des auteurs à titre d'exemple.*

Figure 2. *Image vue à travers les lentilles de Peli pour une HH droite.*

Les citoyens du Québec ayant un diagnostic d'hémianopsie complète se qualifient aux services subventionnés par l'État dans les 13 centres de réadaptation en déficience visuelle de la province. Depuis 2011, ils peuvent aussi bénéficier du programme des aides techniques de la Régie de l'assurance-maladie du Québec (RAMQ). Considérant, les résultats intéressants des lentilles de Peli rapportés dans la littérature, une équipe d'un centre de réadaptation s'est questionné sur la façon d'optimiser son offre de service pour cette clientèle, entre autre en y intégrant l'utilisation de cette aide optique. Cette équipe multidisciplinaire était composée d'ergothérapeutes, d'optométristes, de spécialistes en orientation et mobilité (SOM) et de spécialistes en réadaptation en déficience visuelle (SRDV).

Pour bénéficier des services de réadaptation, les individus répondant aux critères d'acuité ou de champ visuel doivent d'abord être référés au centre de réadaptation en déficience visuelle par un optométriste ou un ophtalmologiste. Une évaluation globale des besoins de l'usager est effectuée initialement par un intervenant du centre de réadaptation. Ensuite, l'usager peut être orienté vers d'autres professionnels de l'établissement, car la déficience visuelle exerce des effets sur tous les aspects de la vie. Ainsi, des éducateurs spécialisés, ergothérapeutes, opticiens d'ordonnances, optométristes, psychologues, SOM, SRDV et travailleurs sociaux peuvent collaborer, au besoin, au plan d'intervention de l'usager[11]. Le cas clinique suivant met l'emphase sur le rôle de l'optométriste au sein d'une équipe multidisciplinaire de réadaptation dans les cas de défauts de champs visuels d'origine cérébrale.

MÉTHODE

L'usagère a subi un examen oculo-visuel complet respectant les standards nord-américains[12] de pratique au service de basse vision de l'Institut Nazareth et Louis-Braille (INLB), un centre de réadaptation en déficience visuelle. Elle a été par la suite revue pour plusieurs suivis en lien avec la livraison et l'ajustement de différentes aides optiques. Elle avait préalablement accepté de faire partie d'un projet clinique visant à valider un protocole d'ajustement de lentilles de Peli au sein d'une équipe multidisciplinaire de réadaptation et à améliorer les services offerts par l'établissement pour la clientèle aînée atteinte d'HH. Quelques semaines après la fin de la période d'intervention, une collecte de données au dossier clinique de l'usagère a été effectuée avec son autorisation écrite et celle de l'établissement. Toutes les interventions se sont faites en respect de la déclaration d'Helsinki[13].

CAS CLINIQUE

Une femme de 72 ans a été référée à l'INLB, sur la recommandation d'un ergothérapeute d'un centre de réadaptation fonctionnelle intensive, pour des situations de handicap en lien avec une HH droite avec épargne maculaire. L'usagère a été évaluée une première fois par un optométriste du service de basse vision de l'INLB en octobre 2012. À l'histoire de cas, l'usagère affirme avoir subi un AVC en mai 2012. Le rapport d'imagerie cérébrale (effectué le 15 mai 2012) mentionne des lésions touchant la région occipitale et occipito-temporale gauche dans le territoire de l'artère cérébrale postérieure gauche. Le dossier d'hospitalisation indique qu'elle a reçu des services de réadaptation en ergothérapie, en orthophonie et en psychologie pendant trois mois en lien avec des séquelles d'héminégligence droite, d'aphasie anomique légère et de dyslexie modérée, menant à une récupération presque complète de ces fonctions. L'usagère est actuellement sous médication pour le traitement de l'hypertension artérielle, l'ostéoporose, la dyslipidémie et une maladie pulmonaire obstructive chronique. Depuis l'AVC, on lui a aussi prescrit un anticoagulant.

L'usagère explique avoir eu une forte myopie depuis son jeune âge. Suite à l'opération de cataractes subie en 1998, elle se dit moins dépendante de ses lunettes. Elle possède toujours des lunettes à foyers progressifs qu'elle porte en tout temps. Elle n'utilise aucune autre aide optique. Elle rapporte des situations de handicap en lien avec les déplacements, l'exploration visuelle et la lecture. Le résumé des résultats de l'examen optométrique est reporté au tableau 1. Avec les lunettes actuelles, l'usagère a une acuité visuelle au près de 0.8 M à 40 cm (*Light House International near acuity test*, New York, NY) et une sensibilité aux contrastes évaluée de façon binoculaire en vision de près de 1.44 log CS (*Mars Perceptrix Corporation*, Chappaqua, NY) correspondant à une perte modérée. Sa vitesse de lecture est d'environ 60 mots/min. (*Minnesota low-vision reading test*, version française, INLB, Longueuil, QC)[14].

Tableau 1. Examen optométrique initial octobre 2012

Correction portée	OD	-0.75/-0.50 x 108 add+2.50
	OS	-1.25/-1.00 x 033 add +2.50
Réflexes pupillaires	OD	3 mm R2+Lt MG-
	OS	3 mm R2+Lt MG-
Motilités oculaires	OD	Souples et complètes
	OS	Souples et complètes
Réfraction/ Acuité visuelle	OD	-0.50/-1.00 x 110 (6/12)
	OS	-1.50/-1.00 x 030 (6/7.5)
Sensibilité aux contrastes	OU	1.44 log CS
Test écran	VL	Orthophore
	VP	Orthophore
Pression intra-oculaire	OD	16mm Hg
(Goldmann @ 11h)	OS	16mm Hg
Champs visuels	OD	Hémianopsie droite complète avec épargne maculaire et une constriction importante du champ résiduel gauche.
(Octopus 900, Haag-Streit, méthode dynamique, cible III4e, 5deg/s)	OS	Hémianopsie droite complète avec épargne maculaire et perte en position supérieure liée à un blépharochalasis.

Tableau 2. Aides visuelles recommandées

Aides visuelles	Rendement
Bilentilles (progressives) Add +300	lit 0.8 M à 30 cm (*Light House International near acuity test*)
Lunettes de lecture +4.00 avec prismes jougués 5 d.p. posés à droite	lit 80 mots/min (*Minnesota low-vision reading test*, version française, INLB).
Loupe dôme 80 mm 2x	lit 0.6 M à 30 cm (*Light House International near acuity test*)
Filtre solaire de type *Fit over* ambre 15 %	Augmentation du confort visuel à l'extérieur, diminution des plaintes d'éblouissement
Lampe d'appoint Ott Lite (ampoule fluorescente 13W qui simule le spectre de la lumière du jour) (*Ott Lite Technology*, Tampa, USA)	Diminution de la fatigabilité en lecture par une augmentation des contrastes et une réduction de l'éblouissement
Canne de détection longue	Amélioration de la posture et augmentation de la vitesse de marche en permettant la détection des obstacles en position inférieure

L'examen au biomicroscope montre une ptose bilatérale liée à un blépharochalasis, des cornées claires et des lentilles intra-oculaires en chambre postérieure claires et bien centrées. L'examen du fond d'œil sous dilatation révèle des vitrés antérieurs clairs, des nerfs optiques présentant une insertion oblique, des croissants scléraux importants et des excavations papillaires centrales (rapport C/D= 0.2/0.2 OU). De plus, une zone d'atrophie chori-rétinienne circulaire est observée en zone paramaculaire supérieure OD. Finalement, l'examen de la rétine périphérique montre des zones étendues de dégénérescence de types pavimenteuses et palissadiques. Ces dernières observations sont compatibles avec un diagnostic de myopie dégénérative[15]. De plus, on note la présence d'une membrane épirétinienne (MER) inféro-nasale à la macula OD d'une taille d'environ un diamètre de disque optique.

Suite à des évaluations en salle d'examen par l'optométriste et dans le milieu de vie par l'équipe de réadaptation, certaines aides visuelles sont recommandées à l'usagère (tableau 2). Par la suite, des entraînements à domicile avec un SRDV sont effectués pour développer des stratégies compensatoires et faciliter l'utilisation des aides visuelles dans le cadre des activités de la vie quotidienne. De plus, suite à une évaluation par un SOM, un plan d'intervention est entamé afin d'augmenter la sécurité, l'aisance ainsi que l'autonomie dans les déplacements extérieurs, tout en développant les habiletés de balayage visuel (approche compensatoire).

Un premier suivi optométrique est prévu en janvier 2013. Le champ visuel est refait. En effet, une récupération spontanée du champ visuel est souvent observée dans les cas d'hémianopsie récente[16]. Les dimensions du champ visuel sont stables. Malgré les entraînements et les aides visuelles reçus précédemment, l'usagère rapporte encore des situations de handicap en lecture ainsi que lors de ses déplacements dans les lieux publics achalandés. Elle ne se sent pas en sécurité dans ses déplacements extérieurs et elle rapporte une anxiété suffisante pour nécessiter un accompagnement du conjoint en tout temps. Elle omet occasionnellement les objets situés dans son champ visuel droit lors de son exploration visuelle et se fatigue rapidement en lecture au point de ne faire que de la lecture de décodage. L'essai de prismes de Peli lui est alors proposé. Toutefois, compte tenu de ses autres problèmes de santé et de ses difficultés à sortir à l'extérieur par temps froid, elle préfère attendre quelques semaines. Il est à noter qu'au moment des entraînements, l'usagère vivait aussi des difficultés d'adaptations psychosociales en lien avec sa déficience visuelle qui ont pu influencer le déroulement de la période de réadaptation. Une référence en ergothérapie est faite à ce moment par l'optométriste, dans le but de soutenir l'équipe de réadaptation dans l'analyse des problématiques perceptuelles et cognitives qui sont fréquentes avec un diagnostic d'hémianopsie et qui peuvent limiter le rendement dans la vie quotidienne. L'ergothérapeute confirme que l'état de l'usagère se situe dans les normes attendues en fonction de l'âge au niveau cognitif et perceptuel (incluant l'héminégligence) lors de l'évaluation fonctionnelle et lorsqu'objectivé avec des outils de dépistage standardisés (*Motor-free visual perception test* - MVPT-3[17]; *Occupational Therapy Adult Perceptual Screening Test* - OT-APST[18]; *Montreal Cognitive Assessment*, - MoCA[19]). Il est donc conclu que les situations de handicap observées sont surtout liées à l'HH.

L'usagère est revue en clinique de basse vision en juin 2013. L'essai des prismes de Peli a lieu à cette occasion après avoir confirmé la motivation de l'usagère. Une monture est sélectionnée par l'opticienne d'ordonnances pour la pose ultérieure des prismes de Peli. Même si certains auteurs ont affirmé que les prismes pouvaient être installés sur des lunettes à double-foyers[8,20], une lentille porteuse unifocale est commandée afin de faciliter l'adaptation. Une monture avec des plaquettes de nez ajustables et une grande dimension verticale (cote B = 39.5 mm) est retenue pour répondre aux suggestions du fabricant qui recommande un minimum de 35 mm pour la pose des prismes[21]. Afin de déterminer l'œil sur lequel les prismes seront installés, quelques tests supplémentaires concernant la vision binoculaire sont effectués. La vérification de la dominance oculaire avec embrouillement convexe montre une dominance de OS. Il y a fusion des images au filtre rouge à 40 cm et 6 m. Aucune suppression n'est notée au test de "Worth 4-dots" à 40cm. La décision est alors prise d'installer le prisme sur OD malgré une dominance OS afin de maximiser le gain de champ visuel à droite. Ross et collaborateurs ont d'ailleurs démontré que dans le cas d'une vision binoculaire normale le taux de détection des stimuli à

travers les prismes est équivalent, peu importe l'oeil sur lequel les prismes sont installés[22]. Par contre, ces auteurs soulignent que chez des usagers ayant une dominance oculaire marquée (vision binoculaire anormale), les taux de détection seraient inférieurs lorsque les prismes sont placés devant l'œil non dominant. Ainsi à la livraison des lunettes, un premier prisme de Fresnel sectoriel temporaire de 40 d.p. horizontal (*Chadwick Optical* Inc., Souderton, PA) est installé en position supérieure. Une première séance d'entraînement aux prismes est prévue la journée même de la livraison avec le SOM. Une autre séance dans l'environnement immédiat de l'usagère est prévue avant le prochain suivi en optométrie. Puisque l'usagère doit gérer maintenant trois lunettes différentes, un rappel de l'utilisation à faire avec chacune de celles-ci lui a été fait: les lunettes avec prismes sectoriels doivent être portées seulement lors des déplacements piétons à l'extérieur, les lunettes de lecture doivent être portées seulement pour les tâches nécessitant une vision précise à 25 cm (lecture, travaux manuels) et les lunettes à foyers progressifs doivent être portées pour toutes les autres activités, c'est-à-dire celles nécessitant l'utilisation de la vision intermédiaire (ordinateur) et lorsque l'usagère doit utiliser simultanément la vision de loin et de près.

Deux semaines plus tard, l'usagère est revue en optométrie. Elle rapporte peu de difficultés avec le prisme en position supérieure, mais aussi peu de bénéfices. La hauteur du prisme est donc diminuée, compte tenu de la ptose, afin de maximiser le gain de champ. Le deuxième prisme de 40 d.p. est alors installé en position inférieure avec une distance interprisme de 10,5 mm. L'acuité étant légèrement diminuée sur l'oeil droit, une évaluation du fond d'oeil est effectuée et permet de constater une progression de la MER. Une référence à un rétinologue est alors proposée à l'usagère pour une opinion sur la possibilité d'un traitement. Finalement, à la fin de cette quatrième visite, l'usagère est accompagnée à l'extérieur par le SOM pour la poursuite des entraînements.

L'usagère est revue en optométrie un mois plus tard. Un champ visuel binoculaire effectué avec les prismes confirme alors une augmentation de champ visuel d'environ 20 degrés en latéral autant en supérieur qu'en inférieur du point de fixation. L'évaluation du SOM démontre une amélioration du port de la tête car l'usagère applique maintenant un balayage visuel efficace. On observe également une augmentation de la vitesse de marche et l'usagère exprime une augmentation du sentiment de confiance à exécuter ses déplacements, et ce, même en milieu non-familier. Toutefois, puisque l'usagère se plaint que le rebord du prisme supérieur nuit en position primaire de regard (elle doit relever le menton) les deux prismes sont déplacés de 1 mm vers le haut de la lentille porteuse. Une commande est alors faite pour des prismes surfacés en PMMA de 57 d.p. horizontaux montés selon les nouvelles mesures. Cette puissance de prisme est disponible seulement dans la version permanente et devrait permettre d'augmenter le gain de champ visuel[8,9].

En octobre 2013, l'usagère est revue de nouveau en clinique de basse vision pour la livraison des lunettes avec prismes permanents. Un champ visuel binoculaire est refait et confirme une augmentation d'environ 30 degrés en latéral, en supérieur et inférieur du point de fixation, par rapport à l'examen initial. Un dernier entraînement est aussi effectué avec le SOM pour s'assurer de la sécurité des déplacements piétonniers avec les prismes de plus forte puissance. Le rapport de l'ophtalmologiste consultant est aussi reçu. Celui-ci confirme la présence d'une MER après imagerie de la rétine (OCT, tomographie par cohérence optique) et suggère une chirurgie. Toutefois, l'usagère préfère attendre.

Un mois après la livraison, un questionnaire téléphonique est administré par une opticienne afin d'évaluer le niveau de satisfaction de l'usagère aux lentilles de Peli. Elle affirme alors porter les prismes en moyenne 7 heures par jour. Ceux-ci seraient très utiles, selon elle, pour éviter les obstacles lors des déplacements à l'extérieur. Elle prévoit continuer à les utiliser dans le futur. Elle est très heureuse et accepte volontiers que l'on partage son expérience positive avec nos collègues.

DISCUSSION

L'optométriste a donc un rôle significatif à jouer dans la réadaptation des usagers atteints d'HH. La réussite de l'ajustement des prismes de Peli peut être influencée par plusieurs facteurs. En effet, puisque l'HH touche davantage les individus âgés, les professionnels de la vision qui souhaitent prendre en charge cette clientèle ont souvent à tenir compte des effets d'autres pathologies concomitantes (oculaires ou autres). Dans le cas présent, l'usagère présentait une rétinopathie myopique, une membrane épirétinienne et un blépharochalasis affectant l'acuité visuelle et les champs visuels. Ces conditions sont susceptibles d'influencer le pronostic visuel à moyen et long terme, et ce, indépendamment du succès des aides optiques proposées pour l'HH. Les articles publiés sur l'efficacité des prismes de Peli font peu mention des pathologies concomitantes ou rapportent le cas d'usagers sans autres pathologies ou avec une bonne acuité visuelle[7,8,9,10]. Ceci ne représente pas la majorité de la clientèle en centre de réadaptation. De plus, et même si notre usagère en était exempte, il est important de considérer les autres séquelles cognitives, perceptuelles ou physiques souvent associées à l'étiologie de l'HH (AVC, tumeur, traumatisme). Ces dernières peuvent influencer la réussite de l'adaptation aux aides optiques, incluant les prismes de Peli, d'où la nécessité d'une approche multidisciplinaire pour cette clientèle.

Ce cas clinique met aussi en évidence les nombreuses visites requises et la quantité d'intervenants impliqués pour la réadaptation des usagers âgés atteints d'HH. Toutefois, les bénéfices peuvent être grands au niveau du maintien de l'autonomie et de la prévention des chutes. La déficience visuelle étant l'un des plus importants facteurs de risque de chutes[23,24], toute intervention permettant de diminuer ce risque de manière significative est souhaitable. Cependant, il est important de considérer que les prismes peuvent aussi engendrer un risque de chute supplémentaire par l'ajout d'information visuelle, d'où l'importance d'une sélection rigoureuse des usagers. Les traitements décrits dans le présent cas clinique combinent deux différentes approches, soit l'approche par substitution (lentilles de Peli) et l'approche compensatoire (entraînements avec SOM, effectués avant et après l'ajout des prismes). D'autres études seraient nécessaires afin de comparer l'efficacité relative de chacune de ces approches auprès de la clientèle aînée, ainsi que l'effet de la combinaison de certaines de ces approches sur la diminution des situations de handicap.

Le protocole d'ajustement utilisé à l'INLB est très semblable à celui décrit par Bowers et coll[8]. La différence majeure est que nous n'avons pas permis l'utilisation des lentilles à double-foyers et que l'usagère a bénéficié de plus de temps d'entraînement avec un SOM. Ces deux éléments pourraient avoir augmenté les chances de succès de l'adaptation aux prismes. Aussi, il a été suggéré que les deux prismes temporaires pourraient être posés en même temps pour accélérer l'entraînement avec certains usagers. Toutefois, compte tenu des visites requises pour les ajustements et la prise des mesures, il n'est pas certain que le nombre de visites en optométrie serait ainsi réduit. Il serait intéressant de documenter l'impact d'un protocole accéléré de ce type d'intervention chez la clientèle âgée.

L'usagère a reçu des prismes dont l'orientation était horizontale et non oblique. Or des résultats intéressants ont été obtenus avec des prismes de puissance équivalente mais avec une orientation oblique, qui permettent une augmentation de champ en vision centrale[25]. Il faudrait par contre vérifier si la confusion possiblement associée aux prismes obliques pourrait influencer le succès de l'adaptation, particulièrement auprès de la clientèle aînée. Aussi, malgré le fait que certains auteurs montrent que ces lentilles aident à développer les habilités compensatoires permettant la reprise du permis de conduire[26,27], des études avec un plus grand nombre d'individus devraient être faites pour conclure à la sécurité de cette aide optique sur la route et déterminer la méthode d'entraînement optimale. Dans le cas présent, il a été recommandé à l'usagère de ne pas conduire avec les lentilles de Peli.

Les usagers des centres de réadaptation en déficience visuelle du Québec ayant un diagnostic d'hémianopsie complète se qualifient maintenant au programme des aides techniques de la RAMQ et les lentilles de Peli sont incluses dans les aides attribuables selon le décret de la

RAMQ depuis 2013. Compte tenu de la particularité de la clientèle avec HH, le travail en équipe multidisciplinaire permet de cibler plus efficacement tous les besoins de l'usager en utilisant les ressources de différents professionnels. De façon plus spécifique, la contribution des SOM pour l'entraînement des usagers avec prismes de Peli apparaît essentielle. L'importance de leur rôle a d'ailleurs déjà été mentionnée dans la littérature[28]. Ainsi, les auteurs croient que les conditions actuelles du système québécois, où l'usager a accès aux équipes spécialisées des centres de réadaptation ainsi qu'aux aides visuelles requises, sont facilitantes pour les usagers et assureraient peut-être un meilleur succès pour la réadapation de la clientèle avec HH.

CONCLUSION

Tel que l'illustre ce cas, les lentilles de Peli peuvent améliorer le quotidien d'une usagère atteinte d'HH en augmentant sa confiance dans les déplacements. Par contre, la littérature mentionne que ce type d'aides visuelles ne serait pas utile pour tous les usagers atteints d'HH. D'autres études seraient requises pour établir une méthode plus efficace de sélection des candidats. Les ergothérapeutes sont des alliés importants dans la sélection et l'orientation vers les autres approches selon l'état et les besoins de l'usager (déficits cognitifs, perceptuels ou moteurs). Finalement, l'apport de l'optométriste est essentiel afin d'établir un plan d'intervention efficient qui considère l'ensemble des approches d'intervention auprès d'un usager cérébrolésé. Il est important que les optométristes interviennent auprès de cette clientèle et qu'ils fassent valoir leur expertise complémentaire au niveau de la santé oculaire et de l'optique ophtalmique

BIBLIOGRAPHIE

1. Pouget MC, Lévy-Bencheton D, Prost M, Tilikete C, Husain M, Jacquin-Courtois S. (2012), Acquired visual field defects rehabilitation: critical review and perspectives. Ann Phys Rehabil Med; 55(1):53-74.
2. Gilhotra JS, Mitchell P, Healey PR, et al. (2002), Homonymous visual field defects and stroke in older population. Stroke;33:2417-20.
3. Pambakian AL, Kennard C. (1997), Can visual function be restored in patients with homonymous hemianopia? Br J Ophthalmol;81:324–8.
4. Suchoff IB, Kapoor N, Ciuffreda KJ, Rutner D, Han E, Craig S. (2008), The frequency of occurrence, types, and characteristics of visual field defects in acquired brain injury: a retrospective analysis. Optometry;79(5):259-65.
5. Hakim A M, Silver F, Hodgson C, (1998), Organized stroke care: A new era in stroke prevention and treatment, Can Med Assoc J; 159(6): S1.
6. Pollock A, Hazelton C, Henderson CA, Angilley J, Dhillon B, Langhorne P, Livingstone K, Munro FA, Orr H, Rowe FJ, Shahani U. (2011). Interventions for visual field defects in patients with stroke. Cochrane Database Syst Rev (10):CD008388. doi: 10.1002/14651858.CD008388.pub2. Review
7. Peli, E. (2000), Field expansion for homonymous hemianopia by optically induced peripheral exotropia. Optom Vis Sci; 77(9):453-464.
8. Bowers A.R., Keeney K, Peli E,(2008), Community-based trial of a peripheral prism visual expansion device for hemianopia. Arch Ophthalmol;126(5):657-664.
9. O'Neil EC, Connell PP, O'Connor JC, et al. (2011), Prism therapy and visual rehabilitation in homonymous visual field loss, Optom Vis Sci. ;88(2):263-8.
10. Bowers A.R., Keeney K, Peli E,(2014), Randomized crossover clinical trial of real and sham peripheral prism glasses for hemianopia, JAMA Ophthalmol.;132(2):214–222.
11. Institut Nazareth et Louis-Braille (2013). Les programmes-cadres de l'Institut Nazareth et Louis-Braille. Longueuil : Qc.
12. Carlson N.B., Kurtz D,Clinical Procedures for Ocular Examination, third edition. McGraw Hill Professional; 2003.
13. Déclaration d'Helsinki de l'Association Médicale Mondiale - Principes éthiques applicables à la recherche médicale impliquant des êtres humains, http://www.wma.net/fr/30publications/10policies/b3/, consultée en ligne le 4 juin 2014
14. Sénécal, M.J., Gresset, J. & Overbury, O. (2003). Version française du Minnesota Reading Test, L'incapacité visuelle et la réadaptation (Vol. V, pp. 31-34). Montréal: Université de Montréal.
15. Kanski, J. J. Acquired macular disorders, In: Kanski, J. J., Clinical Ophthalmology: A Systematic Approach, 6th Edition, Butterworth-Heinemann,2007: 389-437.
16. Zang X, Kedar S. Lynn M.J. et al, (2006) Natural history of homonymous hemianopia, Neurology, 66;903.
17. Colarusso, R.P. & Hammill,D.D. (2003). Motor free visual perceptual test 3rd edition, examiner's manual, Novato, CA: Academic Therapy Publications, Inc.
18. Cooke, D. M., McKenna, K., Fleming, J. (2005). Development of a standardized occupational therapy screening tool for visual perception in adults. Scand Occup Ther, 12:59-71.
19. Nasreddine, Z.S., Phillips, N.A., Bédirian, V, Charbonneau, S, Whitehead, V, Collin, I, Cummings, J.L., Chertkow, H. (2005).The Montreal Cognitive Assessment (MoCA): A brief screening tool for mild cognitive impairment. J Am Geriatr. Soc. 53:695-699.
20. The Low Vision Center of Indiana. http://www.hemianopsia.net/the-ep-lens-for-hemianopsia/, consulté en ligne le 22 avril 2014.
21. Chadwick Optical Inc, (2010) Peli Lens Fitting kit. http://www.chadwickoptical.com/index_files/pelilensforhemianopia.htm , consulté en ligne le 13 juillet 2014.
22. Ross N.C., Bowers A.R., Peli E.(2012) Peripheral glasses : Effects of dominance, suppression and background. Optom Vis Sci; 89(9):1343-1352.
23. Harwood, R. (2001). Visual problems and falls. Age and Ageing, 30-S4, 13-18. Vu dans Duquette, McClure, Baril (2013). La prévention des chutes chez les aînés ayant une déficience visuelle. Institut Nazareth et Louis-Braille. Récupéré du site de l'éditeur : http://inlb.qc.ca/librairies/sfv/telecharger.php?fichier=1309

24. Ivers R.Q., Norton R., et al. (2000) Visual Impairment and risk of hip fracture, Am J Epidemiol 152(7):633-639.
25. Bowers AR, Tant M, Peli E. (2012). A pilot evaluation of on-road detection performance by drivers with hemianopia using oblique peripheral prisms. Stroke Res Treat.;2012(3):176806-10.
26. Bowers AR, Ananyev E, Mandel AJ, Goldstein RB, Peli E. (2014). Driving with hemianopia: IV. Head scanning and detection at intersections in a simulator. Invest Ophthalmol Vis Sci.;55(3):1540-8.
27. Moss AM, Harrison AR, Lee MS.(2014). Patients with homonymous hemianopia become visually qualified to drive using novel monocular sector prisms. J Neuroophthalmol.;34(1):53-6.
28. Toffel K, Rumer D, Jun W. (2012) Hemianopsia and falls prevention, Insight : research & practice in visual impairment & blindness; 5(1):41-46.

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Peak Performances at the American Academy of Optometry in Denver, CO

Kristine Dalton, OD, PhD, MCOptom, FAAO, FBCLA
AAO Faculty-Student Liaison for Waterloo

Etty Bitton, OD, MSc, FAAO, FBCLA
AAO Faculty-Student Liaison for Montreal and Committee Chair

The annual American Academy of Optometry (AAO) meeting had another record-breaking year in Denver this past November. A total of 6,323 attendees made this meeting the largest on record, despite the sub-zero temperatures and biting winds. Among the attendees were 218 Canadian optometrists and 71 students, residents, and librarians from both Canadian schools. Overall student attendance hit a record high this year, with 995 optometry students attending in total. The faculty and students from the two Canadian schools were once again very involved in the meeting, presenting posters, research talks, and CE lectures and being honoured with awards.

Tenue en novembre dernier à Denver, la rencontre de l'American Academy of Optometry a, encore cette année, connu une participation sans précédent : malgré le froid intense et les vents cinglants, 6323 personnes y ont assisté, dont 218 optométristes canadiens et 71 étudiants, résidents et bibliothécaires des deux écoles d'optométrie canadiennes. Au total, 995 étudiants en optométrie étaient présents, établissant un nouveau record de participation étudiante. Comme dans le passé, les facultés et les étudiants des deux universités canadiennes, en plus de recevoir des prix, ont beaucoup contribué à la rencontre en présentant des affiches ou en donnant des conférences et des exposés de formation continue.

OPTOMETRY STUDENTS

In just its third year, the student fellowship program offered by the AAO had a record number of students register (559) and complete the program (419). The student fellowship program offers first-time students the chance to collect points by attending different aspects of the conference program, including courses, papers, posters, symposiums, award ceremonies, and business meetings, as well as by volunteering. By attending these events, students have an opportunity to see what the AAO is all about. Fifteen students from the École d'optométrie, Université de Montréal, obtained student fellowship this year, so please congratulate them on this accomplishment when you see them wearing their lapel pin in clinic!

In addition to the annual student-networking luncheon, where students can receive information on residencies and graduate programs, the AAO held a students-only session in the exhibit hall. During this two-hour session, students had exclusive access to exhibitors and were encouraged to visit many booths by participating in an exhibit-hall treasure hunt. All students who completed the treasure hunt received an entry into a draw for a Zenlens™ scleral trial lens set, generously donated by Alden Optical. The students who participated enjoyed the individual attention they received from the industry representatives; it was a great opportunity for the students to jumpstart their networking.

GRADUATE STUDENTS

The AAO has always opened its arms to graduate students by providing them with the opportunity to present their work as posters or short research talks and by providing travel fellowships that make it possible for them to attend the meeting. This year there were eight graduate students from the School of Optometry and Vision Science at the University of Waterloo who presented posters and papers at the AAO, two of whom were supported by travel fellowships of $750 (Ali Almustanyir and William Ngo). A summary of optometry and graduate student presentations are presented in Table 1.

William Ngo, OD, a PhD candidate from Waterloo, was awarded the American Academy of Optometry Ezell Fellowship at this year's meeting. Ezell fellowships are the flagship program of the American Optometric Foundation; they're designed to encourage students who are enrolled in a full-time program of study and training in vision-related research that leads to a Master's or PhD degree to pursue full-time careers in optometric research and education. Fellowships are awarded based on students' research experience, scientific publication record, academic achievement, professional accomplishments, and recognition from mentors. Please join us in congratulating Dr. Ngo on the award.

Table 1. Optometry and Graduate Student Presentations at the AAO Annual Meeting in Denver, CO

Author (s)	**Presentation Title**	
Almustanyir AH*, Hovis JK (graduate student, Waterloo)	Comparison of a prototype ColorDx and printed pseudoisochromatic color vision tests.	Poster
Babaei Omali N, Subbaraman L, Heynen M, Thangavelu M, Dare E, Canavan K, Fadli Z, Jones L (post-doctorate, Waterloo)	Protein deposition on senofilcon A contact lenses in symptomatic and asymptomatic lens wearers.	Poster
Babaei Omali N, Subbaraman L, Schulze M, Heynen M, Canavan K, Fadli Z, Jones L (post- doctorate, Waterloo)	Clinical signs, symptoms, tear film, and meibum composition in asymptomatic senofilcon A contact lens and spectacle wearers.	Poster
Babu RJ, Clavagnier S, Bobier W, Thompson B, Hess RF (post- doctorate, Waterloo)	Mapping of peripheral suppression in amblyopia.	Paper
Boucher J, Roy E, Quesnel NM, Giasson C (optometry student, Montreal)	Does the freezing of disposable contact lenses affect their power and water content or the visual acuity or comfort of patients wearing those lenses ?	Poster
Guilbert C, Philie MP, Marinier JA (optometry student, Montreal)	Central scotomas detection with the Octopus-900 perimeter and the Amsler Grid in low vision.	Poster
Haines L, Sorbara L (graduate student, Waterloo)	Complications related to mini-scleral contact lens wear: case series.	Poster
Hui, A, Jones, LW (graduate student, Waterloo)	Uptake and release of myopia control drugs from commercial contact lenses.	Paper
Leger S, Lacroix Z, Bitton E (optometry student, Montreal)	Conjunctivochalasis: the other reason for dry eye.	Poster
Ngo W*, Luensmann D, Srinivasan S, Feng Y, Keir N, Simpson T (graduate student, Waterloo)	Comparison of two sensory panel selection strategies for beginning and end of day lens discomfort.	Paper
Perugino C, Bitton E (optometry student, Montreal)	Demographics of a dry eye clinic.	Poster

**Supported by an AAO Student Travel Fellowship*

Figure 1. *American Academy of Optometry Ezell Fellow William Ngo (third from left) surrounded by former Ezell Fellows from Waterloo (from left to right: Lakshman Subbaraman, Kristine Dalton, Alex Hui, Vidyapria Sreenivasan, and Sruthi Srinivasan).*

RESIDENTS

Each year the AAO hosts a dedicated residents' day, where optometry residents from across Canada and the US have the opportunity to present posters and talks based on cases they have seen in clinic and to participate in a resident-practitioner networking luncheon, as well as unique education seminars exclusively designed for them. A highlight of this year's meeting was the special residents education event, Clinical Problem Solving and the Study of Diagnostic Expertise, by Gurpreet Dhaliwal, MD, Professor of Medicine at the University of California, San Francisco. The event focused on the current understanding of how clinicians arrive at diagnoses and strategies that could be used to improve this vital skill. In addition to a lecture, students had the opportunity to participate in breakout groups to put their new knowledge into practice solving eye-specific cases in an evidence-based manner.

This year was a great year for Canadian optometry residents, with five of them attending the meeting and four presenting posters (Table 2). Chelsea Bray from the School of Optometry and Vision Science, University of Waterloo, was also the recipient of a Cornea, Contact Lens, and Refractive Technologies Resident Travel Fellowship, which helped her attend and present at the meeting.

Table 2. Residents' presentations at the AAO, Denver 2014

Author (s)	Presentation Title	
Arthurs M, Canuto T, Marinier JA (Montreal)	Visual rehabilitation for the achromatic patient: challenges and solutions.	Poster
Bray C, Yeung D, Haines L, Sorbara L (Waterloo)	Case report: management of keratoconic patient with neovascularization due to low Dk lens wear.	Poster
Mailanson-Tremblay S, Tremblay J, Michaud L (Montreal)	Comparative study of two strategies to reduce contact-lens- related eye dryness.	Poster
Pham MT, Marcotte R, Bitton E (Montreal).	Volume of tears in the inferior gaze: Schirmer versus the cotton thread test.	Poster

OPTOMETRISTS

Every year, the AAO continues to grow and offer an increasing number of opportunities for attendees to participate in and obtain continuing education (CE) credit. This year the meeting included nearly 300 hours of CE courses in addition to company-sponsored breakfast courses to highlight new products, topic-specific symposia hosted by various optometry special interest groups (SIGs), clinical workshops and leadership programs, and a robust scientific program consisting of oral presentations (paper sessions) and poster sessions presenting the latest in research and/or clinical case reports that could be attended by all. Nearly all of these events offer CE credits to optometrists.

FELLOW OF THE AAO (FAAO)

Every year at the annual meeting, clinicians and researchers can sit for their oral examination to become a Fellow of the AAO (FAAO). Candidates who have successfully completed the registration process and submitted the required body of written work are invited for a peer-review interview process, which is held annually at the meeting. Candidates who successfully complete this last step (the interview) obtain their fellowship and are inducted at the annual Fellowship Banquet. This year 242 new Fellows were inducted, including 15 Canadians (Table 3). Among the Canadians were four from the École d'optométrie, Université de Montréal (Drs. Marie-Eve Corbeil, Anne-Josée Gauthier, Elise Kramer [presently in Florida], and Rim Maklouf [presently in Florida]), and five from the School of Optometry and Vision Science, University of Waterloo (Drs. Alex Hui, Alison Leung [presently in British Columbia], Christina E. Morettin [presently faculty at Illinois College of Optometry], Annie Valerie Micucci [presently in Ontario] and Averi Van Dam [presently in Manitoba]).

Table 3. New Canadian Fellows

New Fellow	Alma Mater
Jim P Ng Cheong Tin, OD	Pacific College of Optometry
Marie-Eve Corbeil, OD, Msc	École d'optométrie, Université de Montréal
Anne-Josee Gauthier, OD	École d'optométrie, Université de Montréal
George Hanna, OD	Nova Southeastern University College of Optometry
Alex Hui, OD, PhD	University of Waterloo
Elise Kramer, OD	École d'optométrie, Université de Montréal
Andrea N Lasby, OD	Northeastern State University Oklahoma College of Optometry
Alison Leung, BSc, OD	University of Waterloo
Rim Maklouf, OD	École d'optométrie, Université de Montréal
Annie Valerie Micucci, OD	University of Waterloo
Christina E Morettin, OD	University of Waterloo, Illinois College of Optometry
Sunni Raman Patel, PhD, BSc (Hons Optometry)	Aston University
Annie Valerie Micucci, OD	University of Waterloo
Averi Van Dam, OD	University of Waterloo
David A Wilkinson, OD	Illinois College of Optometry

Figure 2. *New Fellow Alex Hui, OD, PhD, University of Waterloo, proudly displaying his new Fellow yellow ribbon.*

Figure 3. *New Fellows (from left to right) Drs. Elise Kramer, Marie-Eve Corbeil, Anne-Josée Gauthier, École d'optométrie, Université de Montréal, proudly displaying their Fellowship certificates at the Fellowship Banquet.*

MAINTENANCE OF FELLOWSHIP

Since 2010, the AAO has introduced a new resolution for fellowship maintenance. To encourage new FAAOs to remain active and continue to be at the forefront of information, a maintenance of fellowship (MOF) program was initiated. The MOF includes elements such as attendance to the annual meeting, presentation of a paper or poster, giving a course, publication of an article in a peer-reviewed journal, and more. Each of these elements offers one point towards the 15 points that are required every 10 years. Practitioners and researchers who have obtained their FAAO prior to 2010 do not need to participate in this program; however, all Fellows can track their MOF status on the AAO website under "My MOF" and submit their contributions directly to their profile.

FACULTY

Once again, the faculties from both Canadian schools were very involved in the annual meeting, making impressive contributions in leadership roles within the AAO as CE course presenters, clinical and basic vision science paper and poster presenters, and award recipients. A summary of the presentations from each school is included in Tables 4 and 5.

Table 4. Presentations by faculty from the École d'optométrie, Université de Montréal

Author (s)	Presentation Title	
Bitton E.	Yellow, green or red: understanding ocular staining.	CE lecture
Gresset J, Marinier JA.	Cost and demographic trends in visual rehabilitation services in the province of Quebec, Canada, over a 12-year period (1999—2010).	Poster
Michaud L, Brazeau D.	Understanding the basic and not-so-basic essential tips in fitting scleral lenses.	CE lecture
Selvin G, Downie L, Hinel E, Michaud L.	Ellerbrook presents: grand rounds II.	CE lecture
Wittich W, Johnson A, Overbury O.	Comparison of reading speed in persons with low vision using CCTV and iPad.	Poster

Particular mention this year goes to Dr. Susan Leat and Dr. Sarah MacIver from the University of Waterloo, who had important roles within their respective Special Interest Groups (SIGs) at this year's annual meeting.

Dr. Leat, now immediate-past chair of the Vision in Aging SIG, was acting chair of this SIG in Denver and was responsible for organizing the Vision in Aging Grand Rounds: Multidisciplinary Health Care and Insights symposium held on Saturday morning. This symposium comprised several speakers discussing the importance of multidisciplinary health care for our patients, challenges that can be encountered implementing this approach, and insightful solutions for working through them. With our aging population and the increasing rate of co-morbidities in individuals, this was a very timely and important symposium to be part of.

Dr. MacIver is a member of the AAO Nutrition SIG and was instrumental in conducting the "Feed your Eyes" study in the exhibit hall this year. The purpose of this study was to investigate the relationship between macular pigment, visual function, and diet. For the study, investigators asked participants to complete a short nutritional habits questionnaire online, in addition to measuring their contrast sensitivity and macular pigment density. The study was a joint effort by the Nutrition SIG and the Fellows Doing Research SIG. The booth was staffed by faculty, students, and residents from Waterloo, as well as by a number of faculty and students from other universities. It was a great success; no doubt the results will be very interesting!

The Fellows Doing Research SIG was created to attract interested Academy Fellows to become involved in active clinical research; they have been conducting annual studies in the exhibit hall at the AAO for the past three years.

Dr. Etty Bitton, in her second year as chair of the Faculty-Student Liaison Committee, welcomed the students at the student fellowship orientation breakfast and students' networking luncheon and presided over the liaison's meeting. Direct interaction with faculty and student liaisons from each school allowed for new initiatives to continue improving the student experience prior to and during the annual meeting and for mentorship through the fellowship process.

Contributors to the CE program included Dr. Etty Bitton and Dr. Langis Michaud (Montreal) and Dr. Susan Leat and Dr. Thomas Freddo (Waterloo).

Table 5. Presentations by faculty from the School of Optometry and Vision Science

Author (s)	**Presentation Title**	
Dalton K, Cinelli M, Khaderi K, Willms A.	Visual characteristics of varsity athletes.	Poster
Dalton K, Hutchings N.	Visual characteristics of precision air pistol and air rifle shooters.	Poster
Freddo T.	A logical approach to differential diagnosis of peri-orbital lesions.	CE lecture
Freddo T.	Medical work-up of the Red Eye.	CE lecture
Hovis JK, Almustanyir AH, Reimer S.	Validity and repeatability of the color vision response time test.	Poster
Irving EL, Yakobchuk-Stanger C.	Myopia Progression Control (MPC) lens design reverses previously induced myopia in chicks.	Paper
Jones L.	Soft lenses: so much more than just a piece of plastic.	Glenn Fry Award Lecture
Lorentz H, McCanna D, Subbaraman L, Jones L, Salapatek A, Soong F.	Changes in cytokine expression for dry-eye and non-dry-eye subjects exposed to a low humidity environmental exposure chamber.	Paper
Luensmann D, Situ P, Fonn D, Jones L.	Evaluation of the performance of a new silicone hydrogel colour contact lens.	Poster
Paudel N, Jacobs R, Thompson B, Yu TY, Chakrapborty A, Anstice N.	Do age appropriate clinical vision tests at 2 years predict visual outcome at 4.5 years?	Poster
Richdale K, Sorbara L, and CLAY Study Group.	Contact Lens Assessment in Youth (CLAY): case-control pilot study of patients with symptomatic corneal inflammatory events.	Paper
Schulze M, Luensmann D, Hickson-Curran S, Toubouti Y, Cox S, Plowright A, Nichols J, Morgan P, Jones L.	Analysis of lid wiper epitheliopathy in habitual soft lens wearers.	Paper
Sorbara L and CLAY Study Group.	Multi-center testing of a risk assessment survey for soft contact lens wearers with adverse events.	Paper
Srinivasan S, Pucker A, Jones-Jordan L, Li W, Kwan J, Sickenberger W, Marx S, Lin M, Jones L.	Meibomian gland atrophy rate in pre-presbyopic contact lens and non-contact lens wearers.	Paper
Stahl U, Luensmann D, Lemp J, Moezzi A, Schulze M, Varikooty, Dumbleton K, Jones L.	Determination of higher order aberrations with two silicone hydrogel toric lenses.	Poster
Subbaraman L, Babaei Omali N, Heynen M, Lakkis C, Morgan P, Bertsen D, Nichols J, Jones L.	Impact of different lens care solutions on protein deposition on various soft contact lenses: a multicenter study.	Paper
Leat S.	Catching up on falls: vision and falls in older adults and the optometrist's role.	CE lecture
Leat S, Sheppard K, Newton L, Swanson M, Kaminski J.	Vision in aging grand rounds: multidisciplinary health care and insights.	Symposium

AWARDS AND SPECIAL RECOGNITION

Every year the AAO, the AOF, and industry sponsors offer several student travel awards that partially alleviate the costs involved in attending the annual meeting. These travel awards are often competitive in nature, and some require that the student present at the meeting to be eligible. Industry sponsors and the AOF are to be congratulated in their continued efforts to provide travel grants for optometry students, residents, and graduate students. Award recipients are detailed below.

AOF-VSP/FYi [DOCTORS Student Travel Scholarship
Zoé Lacroix (Montreal)
Ashala Mah (Waterloo)
Diane Sayah (Montreal)
Diana Trieu (Waterloo)

Essilor Private Practice Student Travel Fellowship
Judy Breskott (Montreal)
Stéphanie Leger (Montreal)
Alan Ng (Waterloo)
Wylie Tan (Waterloo)

Student Travel Fellowship
Ali Almustanyir (Frank W. Weymouth Student Travel Fellowship; Waterloo)

Section on Cornea, Contact Lenses, and Refractive Technologies–Resident Travel Fellowships
Chelsea Bray (Waterloo)

Figure 4. *Danne Ventura, director of professional relations, Essilor of America, is flanked by Montreal student travel scholarship recipients Judy Breskott and Stephanie Leger.*

Figure 5. *Dr. Jean-Louis Blanchard accepting the Founder's Award from the Section on Cornea, Contact Lenses & Refractive Technologies at the annual meeting in Denver, CO.*

In addition to providing students with travel fellowships, the AAO also honours people who have made significant contributions to the profession of optometry. Among this year's distinguished honorees were Dr. Jean-Louis Blanchard (Montreal) and Dr. Lyndon Jones (Waterloo).

Dr. Blanchard received the Section on Cornea, Contact Lenses and Refractive Technologies Founder's Award for his pioneering, innovation, and dedication leading to the establishment of one of the eminent contact lens manufacturing labs in Canada and North America: Blanchard Laboratories. The Founder's award was established in memory and honour of Academy Fellows who were pioneers in the contact lens industry. Dr. Jean-Louis Blanchard graduated in 1946 from l'École d'optométrie, Université de Montréal, and started a private practice in Sherbrooke, Quebec. He quickly became interested in contact lenses as an option for optical correction, exploring scleral lenses and PMMA lenses, and later became one of the first practitioners to introduce soft lenses in Quebec. His interest in contact lens design motivated him to sell his practice and open VERACON lab in 1963 to produce contact lenses. The company grew to become Blanchard Laboratories in 1986, which remains the premier gas permeable and specialty lab in central and eastern Canada. Four decades later, Blanchard Laboratories has become a leader in specialty contact lenses. Dr. Jean-Louis Blanchard leaves a legacy we can be proud of.

Dr. Jones (Waterloo) received the Glenn A. Fry Lecture Award, sponsored by the American Optometric Foundation (AOF). The award is given annually to a distinguished scientist or clinician scientist in recognition of the quality, significance, impact, and relevance to optometry of their current research contributions. Dr. Jones' lecture on innovations in contact lenses highlighted a significant number of major developments in contact lens use over the past two decades and provided an exciting glance into the future of the industry. As director of the Center for Contact Lens Research (CCLR), Dr. Jones and his team of dedicated researchers and graduate students continue to push the boundaries of contact lens care, developing innovative new materials and furthering our understanding of how contact lenses interact with the human eye.

Figure 6. *Dr. Lyndon Jones accepting the Glenn A. Fry Lecture Award from Dr. Kathy Dumbleton, president of the AOF.*

We heartily congratulate both honorees for their prestigious awards!

Dr. Kristine Dalton (Waterloo) was the recipient of two Beta Sigma Kappa Research Fellowships awarded this year at the AOF celebration luncheon. These fellowships are sponsored by the Beta Sigma Kappa International Optometric Honor Society and the AOF and benefit individuals early in their career whose academic curiosity has them asking professional questions covering a wide area of vision science, clinical practice, or eye-related public health. Congratulations on this achievement!

THE LOST FACULTIES

Attendees of the AAO in Denver were treated to the final performance of The Lost Faculties (Waterloo) at the Australia Party on Friday night. Faculty members at the School of Optometry & Vision Science, University of Waterloo, founded the band in 2000 for the annual student skit night competition. This year they said their final goodbyes to a fabulous crowd in Denver and will be remembered fondly. Thank you for 14 amazing years of music and entertainment and good luck to you all!

Figure 7. *The "Lost Faculties" play for the last time at the famous Australian party of the AAO.*

Next year's meeting is scheduled for October 7—10, 2015, in New Orleans, Louisiana. Mark your calendar now so that we can set new records in the home of Mardi Gras!

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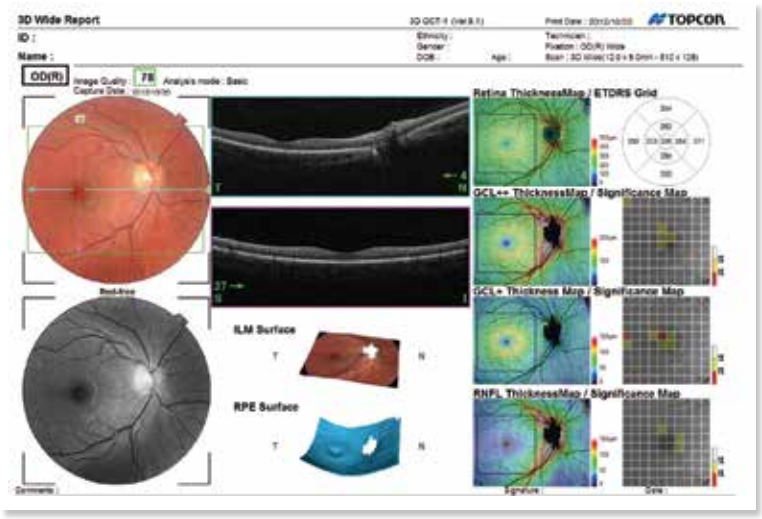
Dr. Joseph Chan, Optometrist at Queensway Optometric Centre and former president of the Vision Institute of Canada as well as the Ontario Association of Optometrists.



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Summer Lovin'

Pauline Blachford

Pauline Blachford consults optometrists on how to reduce unbooked appointments, increase eyewear sales, and improve employee productivity. She has abundant experience in the eye health industry, including 17 years at White Rock Optometry in B.C. Pauline frequently presents at optometry conferences and is a regular columnist for the CJO. For more information, visit paulineblachford.com.

Summer is a wonderful season for optometrists. It's a time to take that much-needed vacation, rest-up, spend time with your family, and enjoy the fruits of your hard work.

One of the greatest things about owning a practice is that your business can continue to heat up, even while you cool down poolside, icy drink in hand. All it takes is a little bit of foresight and planning. In anticipation of my favourite season, here are four recommendations I give my clients to ensure they maximize their revenue potential and improve their business practices, all while they and their staff take time for fun in the sun.

1. Strategic Telephone Recalling

Over two decades in the eye health field, I have found that summer can be one of the busiest times of year. This contradicts the wide-held belief that summer is inherently slow because our clients are on holiday. The key to maximizing bookings during the summer is strategic telephone recalling. If your clinic does not already have a rigorous telephone recalling strategy, read my article, Take Action to Ensure Client Loyalty.[1]

Strategic telephone recalling is when your "recaller" phones clients based on a particular characteristic in each client's profile—not just because the client is the next person on your list who is due for an exam. In preparing for the summer, I coach recallers to target their senior citizen clients when booking appointments for June. This is when young families are busy with exams, class parties, graduations, the works. Things settle down during the summer, and that's when I coach my recallers to reach out to families. It goes something like this:

"Hi Mrs. Smith; it's Suzie from Brooksfield Optometry. I'm calling to book Jimmy and Ashley for their yearly eye health exam. I thought it would be good to book them in July, when they're not busy with school. You're also due for an exam . . . "

This type of recalling will keep your practice busy right through the summer. And the children you serve this summer will be the adolescents and adults you service in years to come.

2. Hire A Locum

Maximizing your revenue means maintaining momentum and continuing to operate your business, even when you are on vacation. Doing this requires having an optometrist on staff to carry your workload forward. Hiring a locum generates revenue in the short term, while providing the long-term benefits that come from offering your clients the continuous care they deserve.[2]

I always tell my clients that if it takes more than five to seven days for your patients—especially your new patients—to get an appointment, then you're doing a favour to the optometrist down the street. Our CAO president, Dr. Geneau, has worked as a locum and hired locums himself. He says he only hires locums he is sure will provide high-quality service to his patients. He asks optometrists he went to school with to fill in for him or to recommend someone trustworthy.[3]

3. Cross-Train Your Staff

Having a cross-trained staff brings big benefits to your business all year round. Research shows that when each of your employees knows the roles, responsibilities, and duties of her colleagues, it helps to provide quality control, pleases patients, promotes teamwork, generates greater employee buy-in, and boosts morale.[4] If you still expect your practice will slow down come summer, use this extra time to cross-train your staff. This will give you experienced substitutes when employees take vacation. It will also serve the practice when an employee falls ill or takes parental leave. Cross-trained staff provides affordable options for mitigating the impact of labour shortages.[5]

Implementing an effective cross-training program, however, requires a plan.[6] Start by having your staff identify the skills they hold as a team. This talent inventory will highlight team strengths and hidden skills, while illuminating areas where a staff shortage could result in operational challenges. From there, establish job-training sessions that focus on the areas where your practice could grow or improve. These can range from hiring a skilled expert to coach certain members of your team to having your employees take turns shadowing one another.

4. Catch-Up and Improve

If your practice does experience some downtime in the summer, another way to stay productive is by completing the chores that have piled-up over the year[3]. Begin by asking your staff to compile a list. Start now, while your practice is busy; that's when uncompleted chores and inefficiencies are most glaring. Items on the list may include catching up on telephone recalling; updating your website; calling patients who have not picked up their contact lenses; sorting and re-ordering contact lens samples; purging your inventory of expired products; shipping back returned items; cleaning; scanning paper files into your computer system, or catching up on other filing.[7]

Leading up to the summer, have each employee sign up to complete one or two of the chores on the list. To motivate your staff, talk to them about how much better it will be once these tasks are complete. Have them decide how the team will celebrate at the end of the summer, if everyone completes their chores.

Summer brings just as many opportunities for your practice to shine as it does occasions for great holidays. Vacation time and staff shortages don't have to burn your bottom line. Strategic telephone recalling and a trusted locum can make this summer your most profitable yet. And if your business does see some downtime, make productive and profitable use of it to enhance your employees' skill sets, and knock off piled-up chores so your practice can hit the ground running in the fall.

REFERENCES

1. Blachford P. Take Action to Ensure Client Loyalty. CJO 2013;75(4):14. http://gpintegrated.ca/CJORCOv75n5/CJORCOv75n5.html#p=16 2 Lowes, R. Locum tenens: when you need one, how to get one. Medical Economics 2007: 33-45.
2. Lowes R. "Locum tenens: when you need one, how to get one", *Medical Economics*, vol. 84, nº 9 (May 2007), p. 33-45.
3. Here are some other suggestions for hiring a locum: Clarke, P. Locum finding tips 2002;38(38): 37,39.
4. The benefits of cross-training staff. Medical Economics 2005: 42-45.
5. Hertzfeld, E. Cross-training: Expanded roles help staff serve guests better. Hotel Management. 38-39.
6. Reference for Business. In Encyclopedia of Business, 2nd Ed. Retrieved from http://www.referenceforbusiness.com/small/Co-Di/Cross-Training.html.
7. Dealing with seasonal changes in workload. [*Mind Tools website*]. Available at: www.mindtools.com/pages/article/seasonal-workload-changes.htm. Accessed February 23, 2015.
8. Smith J. "10 things to do on a slow day at work." [Forbes website]. Available at: http://www.forbes.com/sites/jacquelynsmith/2013/01/09/10-things-to-do-on-a-slow-day-at-work. Accessed: February 23, 2015.

La plus belle saison

Pauline Blachford

Pauline Blachford consulte les optométristes sur la façon de réduire les rendez-vous non pris, d'accroître les ventes d'articles de lunetterie et d'augmenter la productivité des employés. Elle a acquis une vaste expérience dans l'industrie de la santé oculaire, dont 17 ans pour White Rock Optometry en Colombie-Britannique. Pauline donne fréquemment des conférences sur l'optométrie et elle est une chroniqueuse régulière de la RCO. Pour de plus amples renseignements, consultez le paulineblachford.com.

L'été est une saison merveilleuse pour les optométristes : ils peuvent prendre enfin des vacances, se reposer, consacrer du temps à leur famille et recueillir les fruits de leur dur labeur. L'un des principaux avantages d'avoir sa propre entreprise, c'est que les affaires peuvent continuer à rouler, même pendant qu'on relaxe au bord de la piscine avec une boisson glacée; il faut simplement faire preuve d'un peu de prévoyance et de planification. Pour que mes clients et leurs employés puissent profiter au maximum de l'été – ma saison préférée – tout en maximisant leurs revenus potentiels et en améliorant leurs méthodes de travail, je leur adresse quatre recommandations.

1. Faire des rappels stratégiques

Depuis une vingtaine d'années que je travaille en santé oculaire, j'ai eu l'occasion de me rendre compte que l'été pouvait être une période très occupée, même si on croit souvent que les affaires ralentissent parce que les clients sont en vacances. Pour remplir au maximum votre carnet de rendez-vous pendant l'été, il faut faire des rappels téléphoniques. Si votre clinique ne s'est pas déjà donné une stratégie rigoureuse de rappels téléphoniques, lisez mon article *Take Action to Ensure Client Loyalty*[1].

Pour agir de façon stratégique, il faut rappeler chaque client en fonction de ses caractéristiques particulières – pas seulement parce qu'il est le suivant sur la liste. Lorsque l'été approche, j'explique aux employés qu'ils doivent cibler les personnes âgées pour les rendez-vous du mois de juin, car à cette période, les jeunes familles sont très occupées par les examens et les fêtes de fin d'année, les bals de finissants, etc. C'est pendant l'été, lorsque les choses se sont calmées, qu'il faut tenter de joindre ces familles, avec un message comme celui-ci : « Bonjour Mme Tremblay, c'est Suzie, chez Optométrie Caron. Je vous appelle pour fixer un rendez-vous pour l'examen annuel de Philippe et Geneviève. Ce serait peut-être une bonne idée de les voir en juillet, puisqu'ils n'ont pas d'école. Je vous rappelle que vous avez aussi besoin d'un examen de la vue... »

Ce type de rappel vous assurera des rendez-vous tout l'été, et les enfants que vous soignerez cette saison deviendront des adolescents, puis des adultes qui reviendront vous consulter pendant des années.

2. Embaucher un remplaçant

Pour maximiser vos revenus, il faut garder le rythme et continuer à faire fonctionner votre entreprise, même lorsque vous êtes en vacances; pour cela, il faut qu'un autre optométriste se charge de vos dossiers en votre absence. L'embauche d'un remplaçant génère des revenus à court terme, et le fait d'offrir à vos clients une continuité de service vous apportera des avantages à long terme[2]. Comme je le dis à mes clients, si un patient – surtout un nouveau patient – doit attendre plus de cinq à sept jours pour avoir un rendez-vous, il ira voir un autre optométriste.

Le président de l'Association canadienne des optométristes, le Dr Geneau, a lui même travaillé comme remplaçant, et il en a embauché. Il dit n'embaucher que des remplaçants qui fourniront un service de haute qualité à ses patients; il confie sa clientèle à des collègues avec qui il a fait ses études, ou demande à ces derniers de lui recommander quelqu'un de fiable.[3]

3. Avoir un personnel polyvalent

Avoir un personnel polyvalent est un avantage pour votre entreprise tout au long de l'année. Les recherches montrent que lorsque chaque employé connaît le rôle, les responsabilités et les tâches de ses collègues, le contrôle de la qualité s'améliore, tout comme la satisfaction des patients, l'esprit d'équipe, la motivation des employés et leur moral[4]. Si vous vous attendez à ce que les affaires ralentissent pendant l'été, utilisez le temps ainsi libéré pour accroître la polyvalence de votre personnel. Les employés qui prennent des vacances, des congés de maladie ou des congés parentaux pourront ainsi être remplacés par des collègues expérimentés. La polyvalence du personnel permet de trouver une solution abordable lorsqu'un employé s'absente[5].

Pour améliorer efficacement la polyvalence de votre personnel, il faut avoir un plan[6].

Commencez par demander à vos employés de faire une liste des compétences qu'ils ont en tant qu'équipe; cet inventaire mettra en lumière les forces et les talents de l'équipe, tout en soulignant les secteurs où un manque de personnel pourrait entraîner des problèmes.

À partir de là, prévoyez des séances de formation pratique axées sur les secteurs qui pourraient être améliorés; il peut s'agir d'embaucher un expert pour encadrer certains membres de l'équipe, ou de demander aux employés de suivre, chacun leur tour, un collègue dans ses tâches quotidiennes.

4. Rattraper les retards et s'améliorer

Si votre entreprise ralentit pendant l'été, vous pouvez rester productif en réalisant les tâches qui se sont accumulées pendant l'année. Demandez d'abord à votre personnel d'en dresser une liste et commencez maintenant, pendant que les affaires roulent; c'est à ce moment-là que les lacunes et les tâches laissées en suspens sont les plus évidentes.

On peut inscrire sur la liste les rappels téléphoniques, la mise à jour du site Web, le rappel des patients qui ne sont pas venus chercher leurs verres de contact, le tri et la commande des échantillons de verres de contact, l'élimination des produits expirés, le retour de produits, le nettoyage, la numérisation des dossiers papier ou d'autres tâches de classement[7, 8].

Demandez à chaque employé de se charger d'une ou deux tâches d'ici l'été. Pour les motiver, rappelez-leur à quel point ce sera agréable lorsque ce sera fini, et laissez-les décider comment célébrer en équipe à la fin de l'été si tout le monde a fini ses tâches.

L'été, tout en apportant un repos bien mérité, est pour votre entreprise une occasion de briller. Les vacances et les absences n'auront pas nécessairement des effets désastreux; grâce à des rappels téléphoniques stratégiques et à un remplaçant fiable, cet été pourrait être le plus profitable de votre histoire. Et si les affaires ralentissent vraiment, profitez de ce temps libre de façon productive en améliorant les compétences de vos employés et en vous débarrassant des tâches laissées en suspens afin d'avoir une entreprise en pleine forme pour l'automne.

REFERENCES

1. Comment faire le lien avec l'article *Take Action to Ensure Client Loyalty?*
2. Lowes R. "Locum tenens: when you need one, how to get one", *Medical Economics*, vol. 84, nº 9 (mai 2007), p. 33-45.
3. Clarke P. *Locum finding tips* nº 38 (2002), p. 37-39.
4. Weiss G.G. "The benefits of cross-training staff", *Medical Economics*, vol. 82, nº 13 (juillet 2005), p. 42-45.
5. Hertzfeld E. "Cross-training: expanded roles help staff serve guests better", *Hotel Management*, vol. 226, nº 5 (avril 2011), p. 38.
6. Reference for business. *Cross-training*, [En ligne] http://www.referenceforbusiness.com/small/Co-Di/Cross-Training.html. Page consultée le 23 février 2015.
7. Mind Tools. *Dealing with seasonal changes in workload*. [En ligne] www.mindtools.com/pages/article/seasonal-workload-changes.htm. Page consultée le 23 février 2015.
8. Smith J. "10 things to do on a slow day at work", *Forbes*. [En ligne] http://www.forbes.com/sites/jacquelynsmith/2013/01/09/10-things-to-do-on-a-slow-day-at-work. Page consultée le 23 février 2015.

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