Canadian Eye Care Today

Canadian Eye Care Today
2024 Rising Stars in Ophthalmology

Event Summary & Evaluation Report

Toronto, ON • November 30, 2024

catalytic health
communications • advertising • strategy
15 years

In this report...

Acronyms

AAO	AMERICAN ACADEMY OF OPHTHALMOLOGY
AION	ANTERIOR ISCHEMIC OPTIC NEUROPATHY
AMD	AGE-RELATED MACULAR DEGENERATION
ASCRS	AMERICAN SOCIETY OF CATARACT AND REFRACTIVE SURGERY
BSS	BALANCED SALT SOLUTION
CISS	CONSTRUCTIVE INTERFERENCE IN STEADY STATE
COS	CANADIAN OPHTHALMOLOGICAL SOCIETY
CRAO	CENTRAL RETINAL ARTERY OCCLUSION
CRP	C-REACTIVE PROTEIN
CSR	CENTRAL SEROUS RETINOPATHY
CTA	COMPUTED TOMOGRAPHIC ANGIOGRAPHY
CTR	CAPSULAR TENSION RING
DED	DRY EYE DISEASE
ESCRS	EUROPEAN SOCIETY OF CATARACT AND REFRACTIVE SURGERY
ESR	ERYTHROCYTE SEDIMENTATION RATE
FIESTA	FAST IMAGING EMPLOYING STEADY-STATE ACQUISITION
GCA	GIANT CELL ARTERITIS
GCC	GANGLION CELL COMPLEX
HSV	HERPES SIMPLEX VIRUS
HZO	HERPES ZOSTER OPHTHALMICUS
HZV	HERPES ZOSTER VIRUS
IOL	INTRAOCULAR LENS
MNV	MACULAR NEOVASCULARIZATION
MOGAD	MYELIN OLIGODENDROCYTE GLYCOPROTEIN ANTIBODY-ASSOCIATED DISEASE
NK	NEUROTROPIC KERATITIS

Acronyms continued

NMO		NEUROMYELITIS OPTICA
NSAID		NON-STEROIDAL ANTI-INFLAMMATORY DRUG
OCT		OPTICAL COHERENCE TOMOGRAPHY
OCT-A		OPTICAL COHERENCE TOMOGRAPHY ANGIOGRAPHY
OSD		OCULAR SURFACE DISEASE
OSDI		OCULAR SURFACE DISEASE INDEX
OVD		OPHTHALMIC VISCOSURGICAL DEVICES
PCV		POLYPOIDAL CHOROIDAL VASCULOPATHY
PED		PIGMENT EPITHELIAL DETACHMENT
PPV		PARS PLANA VITRECTOMY
RK		RADIAL KERATOTOMY
RNFL		RETINAL NERVE FIBER LAYER
RPE		RETINAL PIGMENT EPITHELIUM
SANDE		SYMPTOM ASSESSMENT IN DRY EYE
SIRE		SHALLOW IRREGULAR RPE ELEVATION
TSNIT		TEMPORAL-SUPERIOR-NASAL-INFERIOR-TEMPORAL
VEGF		VASCULAR ENDOTHELIAL GROWTH FACTOR

Welcome and Opening Remarks

CLARA C. CHAN, MD

Dr. Chan welcomed everyone to the inagural Rising Stars in Ophthalmology conference and introduced the meeting objectives:

- Provide current and high-quality information on the latest developments in the management of ocular disease
- Create collegial learning opportunities to enable clinicians to share real-world experience and to directly apply new insights to their practice
- Foster discussions that allow for the sharing of knowledge and experience among delegates and industry representatives
- Respond to emerging professional needs for specific and in-depth information on the latest treatment approaches for ocular disease in the Canadian market

CLARA C. CHAN, MD

Management of Herpetic and Zoster Corneal Disease

MAHSHAD DARVISH, MD

Dr. Darvish provided an overview of the epidemiology, presentation, and treatment of HSV with ocular manifestations as well as HZO.

HSV

While almost everyone above the age of 60 has HSV, recurrent infections can lead to eye damage. HSV in the eye typically leads to epithelial keratitis, with fluorescein staining showing central staining and terminal bulbs. However, early HSV manifestations can present as a small number of keratic precipitates, without edema. Catching the disease at this stage can improve the patient's outcome. Therefore, Dr. Darvish encouraged ophthalmologists to consider HSV in the case of keratic precipitates, especially unilaterally. HSV ocular manifestations can also occur in the periphery, and should be part of the work-up of peripheral ulcerative keratitis. A geographic ulcer can develop with HSV epithelial keratitis if patients are treated with steroids.

Immune-mediated stromal keratitis causes deep neovascularization, infiltrates and, over time, lipid deposition. Another form of stromal keratitis is necrotizing stromal keratitis, believed to be a direct viral infection of the stroma.

Endotheliitis classically presents with a disciform, with a large amount of keratic precipitates and overlying stromal edema. However, rare presentations of endotheliitis can occur, such as the multiple parallel line endotheliitis recently summarized by Dr. Darvish.

When treating epithelial keratitis, debridement is an option when small numbers of keratic precipitates are present. Some physicians use surgical or needle debridement, but a Q-tip can be effective. After debridement, oral or topical antivirals can be used. Dr. Darvish presented the following oral antiviral therapies, and stressed the need to adjust the dose for renal function and to include copious topical lubrication.

Treatment dosing

- Acyclovir 400mg five times per day
- Valacyclovir 1g two times per day (this is the most commonly used treatment option)
- Famciclovir 500mg three times per day

Ganciclovir gel 0.15% is an option for people who want a topical option, and it is the only topical available in Canada for the treatment of HSV with ocular manifestations. The topical should be applied five times per day until the eye is healed and then three times a day for 2 weeks.

A practical option, ideal for patients who have private insurance, is oral valacyclovir (1g twice daily), in combination with ganciclovir gel (four times a day for 2 weeks). This regimen avoids the need for aggressive lubrication, compared to oral monotherapy. For non-healing ulcers, Dr. Darvish advised physicians to consider amniotic membrane grafting.

In the treatment of immune-mediated stromal keratitis, topical prednisone is prescribed to reduce the inflammatory drive that causes neovascularization and infiltrates. Some patients additionally need long-term steroid therapy. Dr. Darvish recommended continuing low dosage long-term steroid therapy until there is no activity in ghost vessels. Oral prophylaxis is also necessary to prevent the complication of infectious epithelial keratitis. Dr. Darvish presented the prophylactic options, adding that valacyclovir is his treatment of choice:

Prophylactic dosing

- Acyclovir 400mg twice daily
- Valacyclovir 500mg once daily
- Famciclovir 250mg twice daily

For endotheliitis, there is no standard treatment regimen. Dr. Darvish advised treating this occurrence with a therapeutic dose of oral antivirals for 2 weeks, followed by a suppressive dose. He recommended the same therapeutic and prophylactic doses as listed above. Dr. Darvish combines this treatment with prednisone (1%, 6-8 times per day) and dexamethasone ointment at night. He recommended continuing prednisone until the cornea clears, and then very slowly tapering the medication. He encouraged a "long tail" tapering approach (once daily, then once every other day, and then once a week) to avoid a flare. Suppressive oral antiviral treatment is required for as long as patients are taking steroids. As steroids stress the ocular surface, Dr. Darvish emphasized the need to aggressively lubricate the cornea.

Approximately 10% of HSV keratitis patients have anterior chamber uveitis. Steroids are not appropriate for these patients, due to the risk of a geographic ulcer. Isolated uveitis is difficult to diagnose and characterized by decreased corneal sensation, diffusely distributed keratic precipitates, acutely elevated intraocular pressure, unilateral findings, and iris atrophy. Stressing the importance of differentiating HSV uveitis from HZV uveitis in treatment decisions, Dr. Darvish recommended accounting for skin findings and assessing whether the patient has a dendrite, or a pseudo-dendrite. The therapeutic doses for antiviral treatments for HSV-caused uveitis are the same as listed above. Patients should additionally be treated with prednisolone 1% six to eight times per day and dexamethasone ointment at night. Patients should continue the suppressive oral antiviral treatment as long as they are taking cortisone. Lubrication of the cornea is a must.

Neurotrophic keratitis is another challenging ocular manifestation of HSV, resulting from damage to the corneal nerves. Treatment for neurotrophic keratitis caused by HSV or HZV are the same (described below).

HZV

Herpes zoster is a localized reactivation of the varicella-zoster virus. In Canada, there are 130,000 new cases of herpes zoster per year, and about 17,000 of these cases have postherpetic neuralgia and there are 20 deaths from the disease. HZO occurs most often in people in their 50s, and less than 10% of patients with HZO are immunocompromised. Herpes zoster is more common in women and well-known risk factors include previous chickenpox, depression, a family history of HZV, stress, traumatic brain injury, and heart failure.

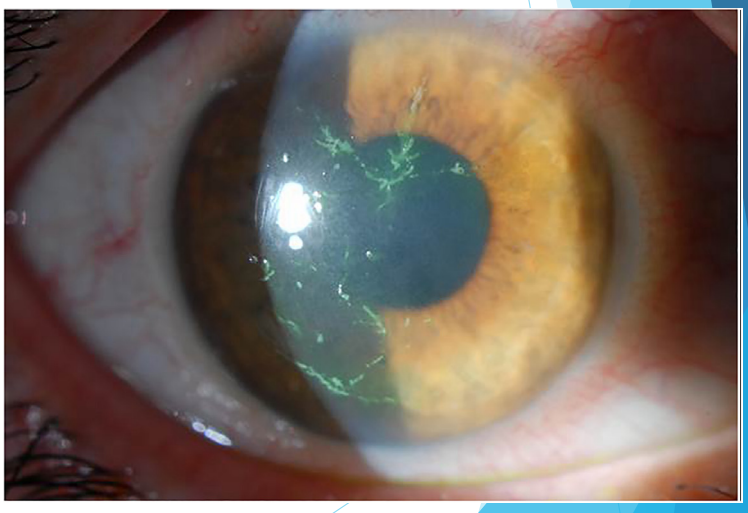
Ocular disease may occur early or up to 1 month after the onset of the rash. Any ocular tissue can be involved, with clinical manifestations including conjunctivitis, scleritis/episcleritis, and epithelial keratitis with pseudo-dendrites. These pseudo-dendrites are slightly elevated, with less regular branching, and a lack of terminal bulbs. If vital dye testing is available, pseudo-dendrites will appear with central staining and peripheral fluorescein staining. Mucus plaques are a later finding in patients with epithelial keratitis.

As with HSV, HZV can also lead to stromal keratitis, with or without ulceration, endotheliitis, and uveitis. Additionally, it can cause trabeculitis. Rare complications of HZV include acute retinal necrosis, stroke, transient ischemic attack, and optic neuritis. About a quarter of all HZO cases become chronic, lasting longer than 3 months. Post-herpetic neuralgia, a pain or itch lasting more than 3 months, occurs in at least 30% of patients with HZO, especially older patients, and is linked to depression and suicide.

Acute treatment for HZO involves 7 to 10 days of antiviral medication, with the goal of treatment

Acute Herpes Zoster Ophthalmicus

- Any ocular tissue can be involved
- Conjunctivitis
- Scleritis / Episcleritis
- Epithelial keratitis
  - Pseudo-dendrites
  - Mucus plaques
- Stromal keratitis
  - With/without ulceration
- Endotheliitis
- Trabeculitis
- Uveitis



to shorten the duration of the rash and reduce the occurrence of chronic eye disease from 50% to 30% at 6 months. Antiviral treatment for HZO is administered at higher doses, compared to HSV with ocular manifestations:

- Valacyclovir 1000mg 3 times daily
- Acyclovir 800mg 5 times daily
- Famciclovir 500mg 3 times daily

Topical antivirals (ganciclovir gel 0.15%) may help in the healing of persisting pseudo dendrites. Topical steroids should be used at any sign of inflammation (including conjunctivitis, keratitis, scleritis, or uveitis). If mucus plaques occur, they are a sign of under treated inflammation and these plaques should be debrided and treated aggressively with steroids, which should be very gradually tapered.

NK is very common in HZO, occurring in 13% of patients. Stage one presents with diffuse staining. Stage two is signified by persistent epithelial defect and requires urgent treatment. Therapy requires optimizing the ocular surface, with preservative-free lubrication, punctal occlusion, oral tetracyclines to prevent melting, serum tears (20% or 40%), and insulin drops (25 IU/mL), if serum tears are not available.

Surgical options for NK include amniotic membrane grafting (dry or cryo-preserved); tarsorrhaphy (temporary or permanent), bandage contact lens, scleral contact lens (long term), glue (perforation). Corneal neurotization is a later-line treatment option. Penetrating keratoplasty may be required for corneal perforation but is a high-risk procedure, requiring tarsorrhaphy and amniotic membrane transplantation.

Until recently, there was no evidence for long-term suppressive therapy for HZO. The ZEDS study, presented at AAO 2024, demonstrated that 12 months of 1g daily valacyclovir led to delayed time to development of new or worsening of HZO, versus placebo, at 18 months of follow-up. The study also found a significantly lower likelihood of disease flare-ups at 12 and 18 months. Based on this study, Dr. Darvish recommended prescribing valacyclovir at 1g daily for 12 months for all HZO patients, after they have received the HZV (Shingles) vaccine. Dr. Darvish concluded by strongly recommending the highly effective HZV vaccine for patients over 50.

Q&A

Do you treat with antibiotics after debridement?
No, because I don't use aggressive debridement treatments. If I were to use a needle or blade, however, I would prescribe antibiotics.

If the disease recurs while on oral prophylaxis, do you switch to a different agent?
I would increase the dose of the oral prophylaxis. Now that the ointment is available, another option is to add the ointment in the event of a recurrence.

What is your approach for patients who have a history of HZO or HSV with ocular manifestations and require eye surgery?
If they have had a flare within the past year, I prescribe oral steroids; if they haven't had a flare in this time, I prescribe topical steroids. The oral or topical medication should be administered every 2 hours, beginning 2 days before the surgery and continuing for 1 week. For the next month, the dosing is every four hours, followed by a slow taper. With HSV, the taper can be more rapid; HZV requires a slow taper.


adian
Care
ay
024
ars in

Review of Management Options for Dry Eye Treatment

ALLAN SLOMOVIC, MD

DED remains a challenge in clinical practice due to its complex, multifactorial nature and the lack of standardized diagnostic criteria. The disease can be broadly classified into two categories: aqueous tear deficiency, typified by Sjögren syndrome, and evaporative dry eye, which results from rapid tear film evaporation and is commonly exemplified by meibomian gland dysfunction, but may also be due to thyroid dysfunction, incomplete blinks, computer work, and cosmetic surgery. Approximately 80% of patients with aqueous deficiency also exhibit features of evaporative dry eye.

A comprehensive ocular history is essential. This should include questions about previous ocular surgery, allergy, and computer use, as well as the use of antihistamines, antidepressants, or hormonal therapy. The physician should also ask about diagnoses of autoimmune diseases, such as rheumatoid arthritis, and look for potential signs of these diseases, like fatigue, dry mouth, and joint disease. Dr. Slomovic recommended the use of validated questionnaires such as the OSDI and the SANDE to better assess disease severity and evaluate treatment responses. As patients can complete these questionnaires in the waiting room, these tools do not hamper practice efficiency.

The slit-lamp examination is a cornerstone of the diagnosis for DED. Before beginning the examination, Dr. Slomovic recommended assessing the face for dilated blood vessels and assessing the eye for fissures and hydration. It is important to consider not only the number of secreting meibomian glands but also the liquidity of the secretion (secretions in dry eyes often exhibit a pasty texture.) This will help to rule out differential diagnoses, such as superior limbic keratoconjunctivitis, allergy, and blepharitis.

The third step is staining. Diagnostic dyes (fluorescein and lissamine green) are very effective in confirming the diagnosis of DED, assessing its severity, and differentiating aqueous from evaporative tear film deficiency. Dr. Slomovic encouraged the early diagnosis and treatment of DED, underscoring the significant impact it has on patients' quality of life, and noting that DED worsens outcomes of cataract and refractive surgeries.

Noting that DED is a chronic condition and that topical steroids are not appropriate long-term, Dr. Slomovic recommended lifitegrast 5% and cyclosporine. Lifitegrast inhibits T-cell activation and cytokine release, with effects noticeable in 2 to 4 weeks. Cyclosporine, available in multiple concentrations, enhances tear film stability, goblet cell density, and tear film production. Effects of cyclosporine are generally observed by 1 to 2 months and increase over time. Dr. Slomovic often combines the treatment with a soft steroid induction to more rapidly alleviate symptoms and enhance treatment compliance.

Treatments derived from blood products include autologous serum tears (15% - 50%); platelet rich plasma; and platelets enriched with growth factors. A meta-analysis published by Dr. Chan in *Cornea* in 2024 found that plasma-rich growth factors can be an effective treatment of DED refractory to traditional therapies, with minimal safety concerns. Dr. Slomovic said that he uses platelet rich plasma, and to a lesser extent, platelets enriched with growth factors only after lifitegrast and cyclosporine have failed. Blood product-derived treatments are expensive, and can be cumbersome for patients, with few compounding pharmacies offering these therapies. For patients who don't have access to platelet rich plasma, Dr. Slomovic recommended autologous serum tears. Dr. Slomovic emphasized that a treatment that works in one patient may not work in another, and recommended trialing various treatments and setting patient expectations accordingly.

It is imperative to assess cataract patients for OSD. This condition is prevalent in elderly patients, who often use multiple medications, including anti-glaucoma drugs. Dr. Slomovic advised ophthalmologists to explain to patients that they have two separate problems, their cataract and their OSD, and that the ocular surface must be optimized prior to and after surgery. Screening and management of OSD prior to cataract surgery is critical as it can significantly affect biometry, visual outcomes, and patient satisfaction following cataract surgery. NSAIDs, frequently used postoperatively in cataract patients, should be avoided in the perioperative period in patients with DED, as this can lead to corneal melts and perforations. Dr. Slomovic stressed that patients will

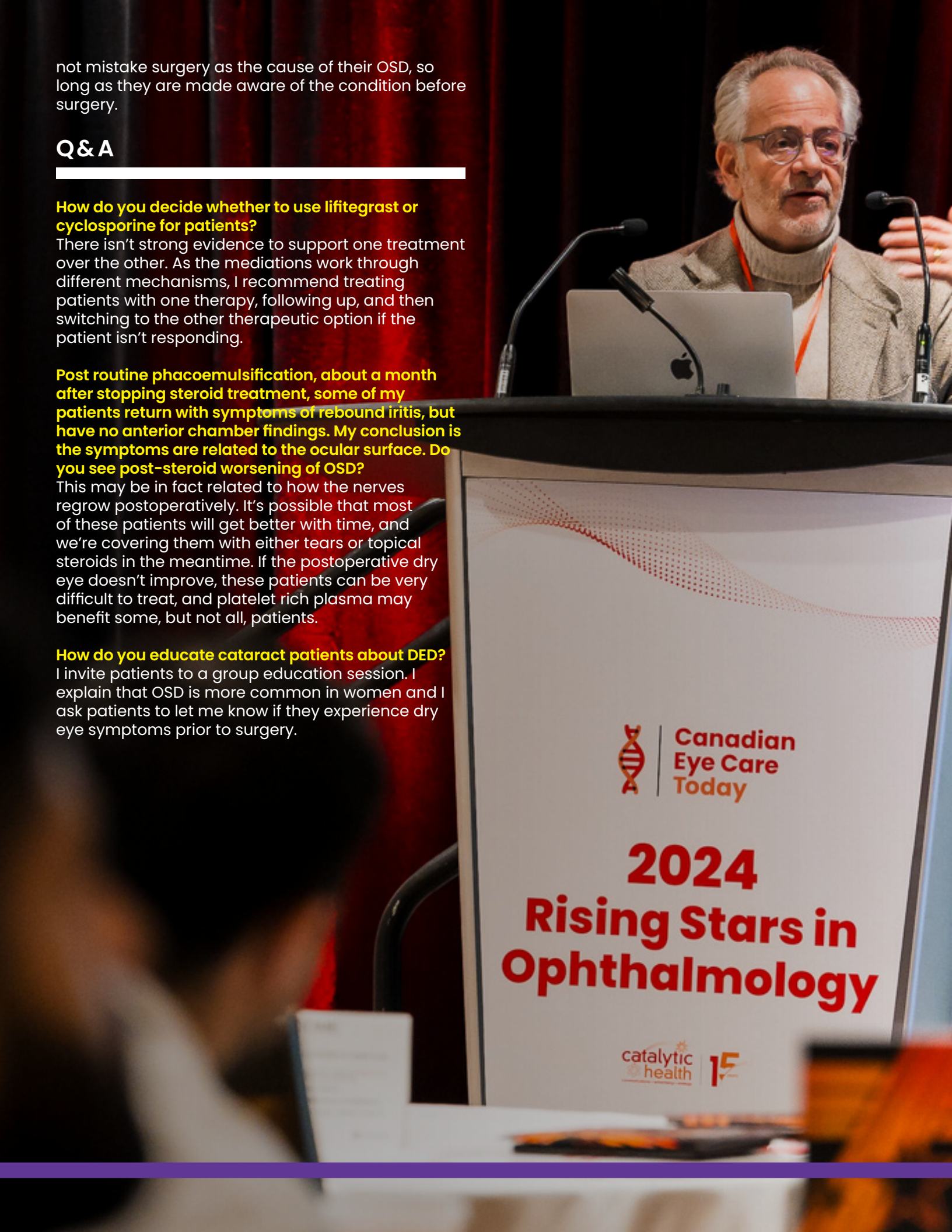
not mistake surgery as the cause of their OSD, so long as they are made aware of the condition before surgery.

Q&A

How do you decide whether to use lifitegrast or cyclosporine for patients?
There isn't strong evidence to support one treatment over the other. As the mediations work through different mechanisms, I recommend treating patients with one therapy, following up, and then switching to the other therapeutic option if the patient isn't responding.

Post routine phacoemulsification, about a month after stopping steroid treatment, some of my patients return with symptoms of rebound iritis, but have no anterior chamber findings. My conclusion is the symptoms are related to the ocular surface. Do you see post-steroid worsening of OSD?
This may be in fact related to how the nerves regrow postoperatively. It's possible that most of these patients will get better with time, and we're covering them with either tears or topical steroids in the meantime. If the postoperative dry eye doesn't improve, these patients can be very difficult to treat, and platelet rich plasma may benefit some, but not all, patients.

How do you educate cataract patients about DED?
I invite patients to a group education session. I explain that OSD is more common in women and I ask patients to let me know if they experience dry eye symptoms prior to surgery.



Review of Glaucoma Imaging and Diagnostics

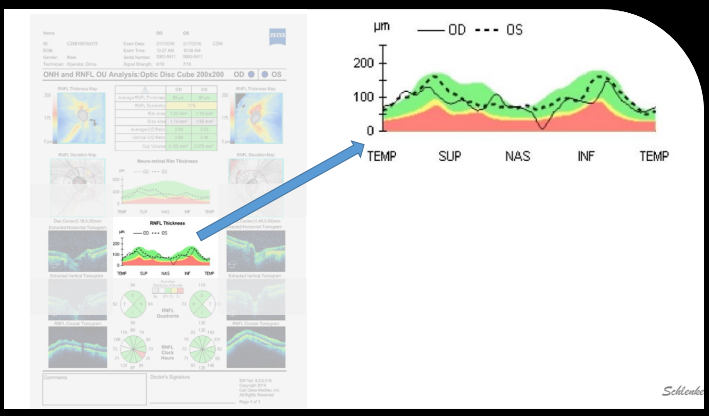
MATTHEW SCHLENKER, MD

Dr. Schlenker described best practices in glaucoma imaging and diagnostics, noting that expanding knowledge of the condition necessitates more thorough OCT reviews. He recapped the three controls for OCT. One is the normative database, but this only includes 296 patients (Cirrus database), and will not reflect all individual cases. The other eye can be a robust control for most patients, but comorbidities and differences between eyes can render this control less useful for many patients. The third control is comparing imaging results over time.

The OCT is sometimes easier to interpret than the visual field, which can have significant variability between testing sessions. Within the OCT, the TSNIT is the most important part for the glaucoma evaluation (see image below on this page). This information comes from the circular tonogram. He advised his fellow ophthalmologists to look out for acquisition defects and segmentation issues when analyzing the TSNIT. The TSNIT plot can be compared to normative controls as well as to the other eye, and then also against itself over time.

Another pitfall in interpreting the OCT is assuming that red-coded RNFL thickness always indicates glaucoma. "Red" disease on the deviation map can be true nerve loss, atypical anatomy, or unclear, due to segmentation or aquisision artifacts.

When acquisition is adequate, and segmentation has been performed properly, another potential reason for red on the deviation map could be atypical anatomy. Dr. Schlenker showed scans of a patient with a split RNFL. The OCT showed red on the superior pole, but on closer inspection of the anatomy, there was a gap between superior vessels, which suggests there could be a gap between the RNFL nerve bundles. For such a patient, the GCC is an important piece of corroborating evidence. Dr. Schlenker noted that GCC is now an essential part of a glaucoma evaluation.



Dr. Schlenker then presented the following GCC report (see top of next page), explaining if that he received this report, he would ask for the macular thickness. If the macular thickness report is heavily blue, with little yellow, that is a warning signal. In this case, the patient has a hemi retinal vein occlusion. He added that high pressure selectively affects the ganglion cell and does not affect the outer retina, whereas a vein occlusion spares no part of the retina: the entire retina is thin in a vein occlusion.

After showing various examples of OCTs that could be misinterpreted as glaucoma, Dr. Schlenker presented OCTs for patients with glaucoma. He explained macular vulnerability zone defect is quite specific for glaucoma damage. Dr. Schlenker recommend assessing patients with a macular vulnerability zone defect for visual field defects in the macula, using a 24-2C or a 10-2 visual field test.

The next GCC report also is quite specific for glaucoma, a defect which has been to the horizontal raphe sign. Dr. Schlenker concluded by reminding the audience that glaucoma often spares the central vision. For this reason, patients can sometimes see 20/20 or 20/25, even though they have profound visual field loss.

Q&A

If I see the characteristic defect in the macular vulnerability zone, and a correlating visual field defect, but pressures are normal, should I start drops right away?

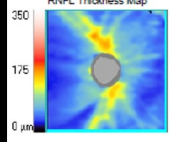
I would check if the eye pressure is fluctuating in a patient like this, because while this sounds like glaucoma damage, very few people will have these findings with a low pressure. Other possibilities could be prior uveitis or pigment dispersion syndrome that has "burned out." If the patient is elderly, treatment may not be beneficial, depending on vision in the other eye.

Name:

			OD	OS	
ID:	34923	Exam Date:	2/6/2020	2/6/2020	CZMI
DOB:		Exam Time:	10:57 AM	10:58 AM	
Gender:	Male	Serial Number:	5000-6112	5000-6112	
Technician:	Operator, Cirrus	Signal Strength:	9/10	8/10	

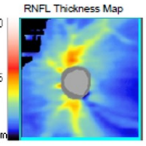
ONH and RNFL OU Analysis:Optic Disc Cube 200x200 OD ● ● OS

RNFL Thickness Map

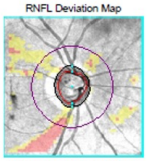


	OD	OS
Average RNFL Thickness	76 µm	80 µm
RNFL Symmetry	81%	
Rim Area	0.77 mm²	0.87 mm²
Disc Area	2.06 mm²	2.07 mm²
Average C/D Ratio	0.79	0.75
Vertical C/D Ratio	0.78	0.71
Cup Volume	0.749 mm³	0.529 mm³

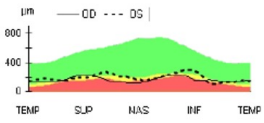
RNFL Thickness Map



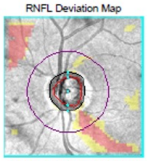
RNFL Deviation Map



Neuro-retinal Rim Thickness

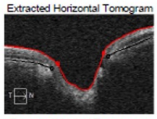


RNFL Deviation Map

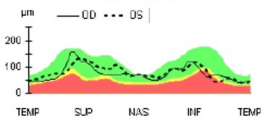


Disc Center(-0.06,0.03)mm

Extracted Horizontal Tomogram

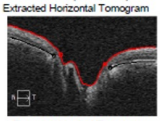


RNFL Thickness

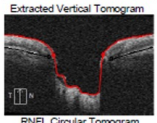


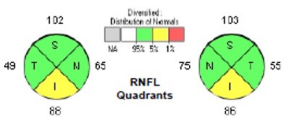
Disc Center(-0.24,-0.18)mm

Extracted Horizontal Tomogram

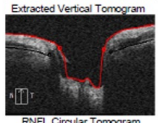


Extracted Vertical Tomogram

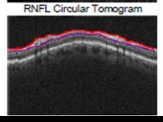




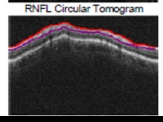
Extracted Vertical Tomogram



RNFL Circular Tomogram



RNFL Circular Tomogram

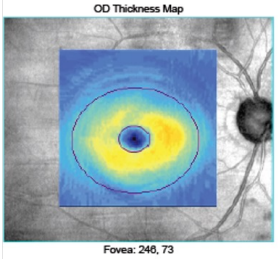


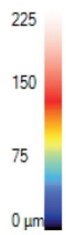
Name:

			OD	OS	
ID:	34923	Exam Date:	2/6/2020	2/6/2020	CZMI
DOB:		Exam Time:	10:56 AM	10:58 AM	
Gender:	Male	Serial Number:	5000-6112	5000-6112	
Technician:	Operator, Cirrus	Signal Strength:	9/10	7/10	

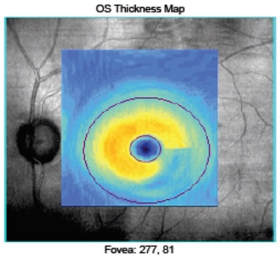
Ganglion Cell OU Analysis: Macular Cube 512x128 OD ● ● OS

OD Thickness Map





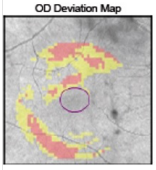
OS Thickness Map



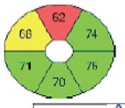
Fovea: 246, 73

Fovea: 277, 81

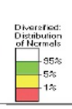
OD Deviation Map



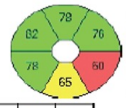
OD Sectors



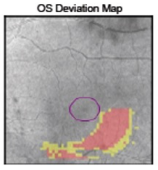
Diversified Distribution of Normals



OS Sectors

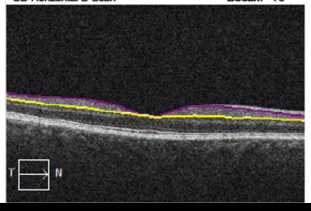


OS Deviation Map

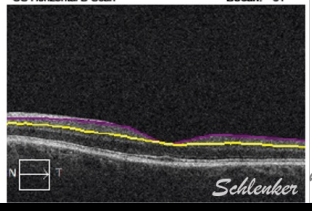


	OD µm	OS µm
Average GCL + IPL Thickness	70	73
Minimum GCL + IPL Thickness	64	69

OD Horizontal B-Scan BScan: 73



OS Horizontal B-Scan BScan: 81

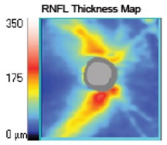


Name:

			OD	OS	
ID:	8948	Exam Date:	11/27/2019	11/27/2019	CZMI
DOB:		Exam Time:	8:27 AM	8:27 AM	
Gender:	Female	Serial Number:	5000-6112	5000-6112	
Technician:	Operator, Cirrus	Signal Strength:	9/10	7/10	

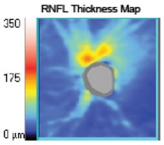
ONH and RNFL OU Analysis:Optic Disc Cube 200x200 OD ● ● OS

RNFL Thickness Map

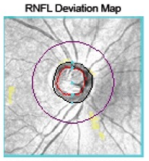


	OD	OS
Average RNFL Thickness	87 µm	64 µm
RNFL Symmetry	30%	
Rim Area	1.15 mm²	0.88 mm²
Disc Area	2.34 mm²	2.27 mm²
Average C/D Ratio	0.71	0.77
Vertical C/D Ratio	0.68	0.78
Cup Volume	0.554 mm³	0.428 mm³

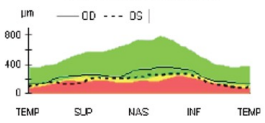
RNFL Thickness Map



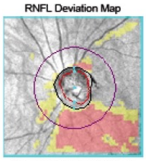
RNFL Deviation Map



Neuro-retinal Rim Thickness

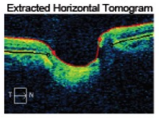


RNFL Deviation Map

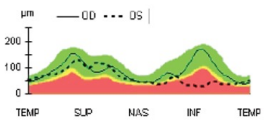


Disc Center(-0.03,0.21)mm

Extracted Horizontal Tomogram

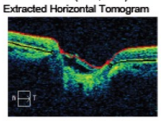


RNFL Thickness

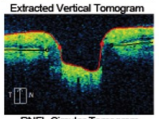


Disc Center(0.06,-0.03)mm

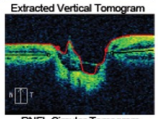
Extracted Horizontal Tomogram



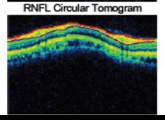
Extracted Vertical Tomogram

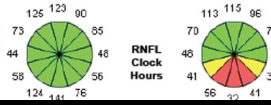


Extracted Vertical Tomogram

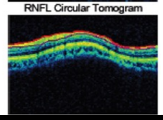


RNFL Circular Tomogram





RNFL Circular Tomogram

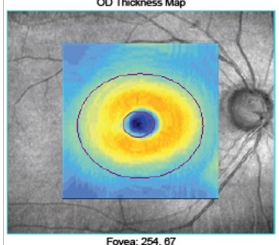


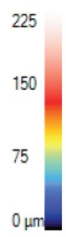
Name:

			OD	OS	
ID:	8948	Exam Date:	11/27/2019	11/27/2019	CZMI
DOB:		Exam Time:	8:27 AM	8:28 AM	
Gender:	Female	Serial Number:	5000-6112	5000-6112	
Technician:	Operator, Cirrus	Signal Strength:	10/10	8/10	

Ganglion Cell OU Analysis: Macular Cube 512x128 OD ● ● OS

OD Thickness Map





OS Thickness Map

Fovea: 254, 67

Fovea: 265, 68

OD Deviation Map

OD Sectors

Diversified Distribution of Normals

OS Sectors

OS Deviation Map

	OD µm	OS µm
Average GCL + IPL Thickness	83	69
Minimum GCL + IPL Thickness	81	80

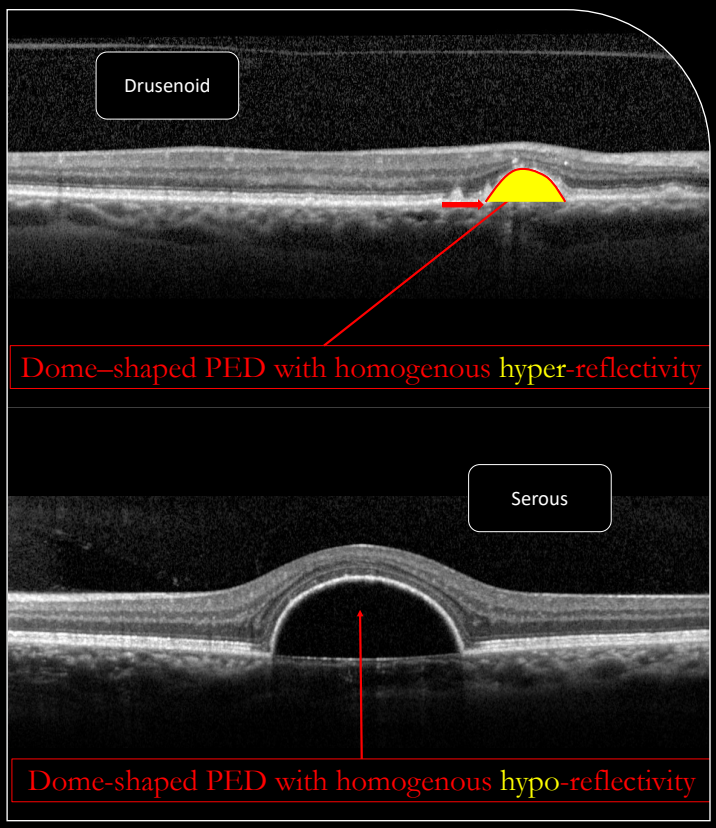
OD Horizontal B-Scan BScan: 67

OS Horizontal B-Scan BScan: 68

The Notorious PED

R. RISHI GUPTA, MD

Dr. Gupta explained that a PED occurs when the basal lamina of the RPE cell separates from the inner collagenous Bruch's membrane. He described different types of PEDs. A drusenoid PED is a dome-shaped PED with homogenous hyper-reflectivity, while a serous PED is a dome-shaped PED with homogeneous hypo-reflectivity. A fibrovascular PED is characterized by MNV, and may be associated with subretinal fluid, intraretinal fluid, and subretinal hyper-reflective material. OCT-angiography can be helpful in identifying new vessels.



PED is most commonly seen in AMD, CSR, and PCV. Dr. Gupta advised his peers to look for drusen and reticular pseudodrusen for AMD, a thicker choroid for CSR and hemorrhagic sharp-peaked PEDs for PCV.

Dr. Gupta then presented a case of a drusenoid PED with subretinal drusenoid deposits. Reticular pseudodrusen deposits, found above the RPE line, are a risk factor for advanced AMD. A 2024 *Ophthalmology* paper by Dr. Agron revealed that patients with four points on the Simplified Severity Scale for Age-Related Macular Degeneration and the presence of reticular pseudodrusen have a 70% chance of progressing to late AMD within 5 years (compared to 50% of patients with a score of 4 without reticular pseudodrusen), so it is important to forewarn patients about this probability, and set patient expectations.

In addition, research shows that approximately 20% of drusenoid PEDs will develop central geographic atrophy over a 5-year period and approximately 25% develop neovascular AMD over the same period. Dr. Gupta clarified that a drusen is classified as a PED at 350 microns.

With the next case, the OCT revealed sub-RPE, hyper-reflective material, subretinal fluid, subretinal hyper-reflective material, drusen, hyper reflective foci and focal RPE thickening. The OCT was not conclusive, so Dr. Gupta ordered fluorescein angiography and an ICG, which did not reveal MNV, and only pooling of the PED. The OCT-A showed no flow, leading to the diagnosis of exudative non-neovascular AMD. He emphasized that even though subretinal fluid was present, this would not respond to anti-VEGF.

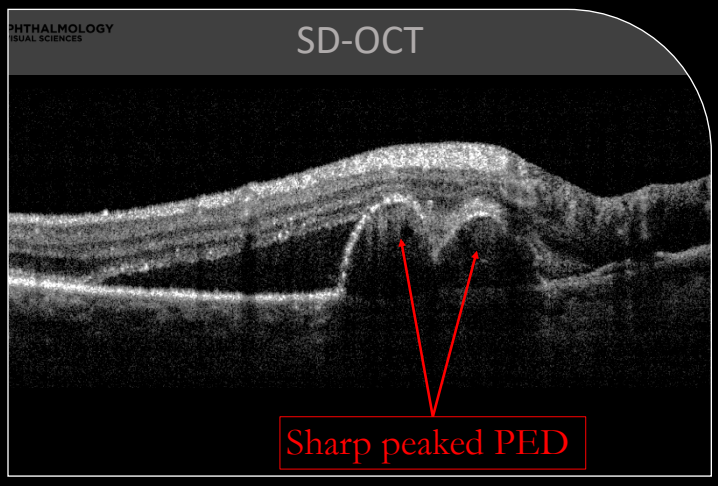
The OCT for another case looked very similar to the one described above. It revealed a large PED, subretinal fluid, and focal RPE thickening. However, in this patient, fluorescein angiography revealed a notch, which was suggestive of new vessels and an ICG confirmed macular neovascularization. The diagnosis was exudative neovascular AMD. The patient had an impressive response after just one injection of anti-VEGF. Summarizing, Dr. Gupta explained that clues to fibrovascular PED include intraretinal fluid, hemorrhage, subretinal fluid, subretinal hyper-reflective material, irregular PED (notch), and MNV on fluorescein angiography, ICG, or OCT-A. He explained that just as subretinal fluid can be present in the absence of MNV, MNV can be present in the absence of subretinal fluid.

The next case demonstrated fluid over drusen. Multimodal imaging, however, did not reveal MNV. Hence, this was another case of exudative non-neovascular AMD. Fluorescein angiography and OCT-A can help to distinguish neovascular and non-neovascular AMD in these cases. Dr. Gupta recommended using the classification of non-neovascular or neovascular AMD (rather than "dry" AMD or "wet" AMD), and to comment on whether it is non-exudative or exudative.

Dr. Gupta then showed a case of a PED that slowly resolved over many injections over 24 months. A post-hoc analysis from HARBOR published in 2016 in *Ophthalmology* revealed that

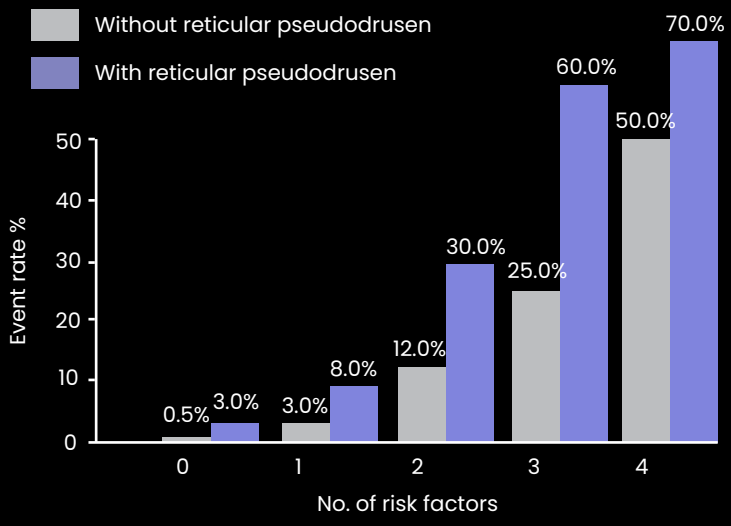
at 24 months, about half of PEDs have complete resolution with monthly/PRN ranibizumab treatment. The VIEW trial published the same year, found complete resolution occurred at one year in more patients treated with aflibercept compared to ranibizumab (with complete resolution occurring at 40% in the former group and 28% in the latter group). In this case, the OCT revealed a shallow separation of RPE and the Bruch's membrane, or a SIRE. A SIRE is characterized by:

- Flat morphology (contrast to dome-shaped drusenoid)
- 1000µm minimum transverse diameter
- Height <100µm
- Sub-RPE non-homogenous internal reflectivity



An updated simplified severity scale for AMD incorporating reticular

Pseudodrusen: Study report number 42



Five-year rate of progression to late AMD (nAMD or any GA)

This was ultimately a case of non-exudative neovascular macular degeneration. In general, these cases should be observed. In one case, a patient with non-exudative, neovascular macular degeneration was followed for 10 years without treatment, and remained with 20/25 vision.

Dr. Gupta also discussed sharp, peaked PEDs. These are highly indicative of a polypoidal choroidal vasculopathy (now called aneurysmal type 1 MNV). They require aggressive anti VEGF therapy.

Dr. Gupta reminded the audience that a PED may vanish, collapse, atrophy, and rip. Dr. Gupta presented an example of a collapsed PED, noting that focal RPE thickening and hyperreflective foci are highly associated with atrophy. He also presented an RPE tear, with RPE scroll and an RPE defect seen on multimodal imaging. Corrugation on the OCT when injecting a patient with anti-VEGF is indicative that an RPE tear is imminent, so it's important to look out for this pattern.

In conclusion, Dr. Gupta recommended considering AMD, CSR, PCV and identifying which PEDs are vascularized and require anti-VEGF. Meticulous multi-modal imaging is often necessary for challenging diagnostic cases.

Q&A

When you are treating a patient with MNV and PED, are you injecting anti-VEGF with the goal of seeing the PED flatten?

My main goal is to achieve resolution of intraretinal fluid and subretinal fluid. In that case, if the PED is stable, I may consider a treat and extend regime. However, if the PED is growing, I would err on the side of more frequent injections.

Should every patient going for cataract surgery have an OCT to look for macular pathology?

If the resources are available, I firmly believe it is an important part of the evaluation. This will help verify that the change in vision is from the cataract, and not from a macular issue.

For patients with macular degeneration, how long do you wait between injections before cataract surgery?

Ideally, the surgery would happen at the mid-point between the last injection and the next one. In reality, this can be challenging to control.

Complex Cataract Surgery on Your Own (Video Sessions)

JOSH TEICHMAN, MD, MPH

Dr. Teichman discussed a range of complex cataract surgeries, beginning with cataract surgery in short eyes. The first step in these surgeries is to assess axial hyperopia, relative anterior microphthalmos, microphthalmos, and nanophthalmos. It is paramount not to let the anterior chamber shallow. For short eyes, Dr. Teichman recommended considering preoperative mannitol, noting the high risk of intraoperative malignant glaucoma. In addition, he advised always injecting BSS or OVD when removing instruments from the eye, and rarely considering prophylactic dry PPV, however, this can be at increased risk due to anterior retinal insertion in these eyes. These patients may need special order, high-power IOLs.

With cataract surgery in long eyes, Dr. Teichman warned about the higher risk of severely weakened zonules, especially when PPV is performed. Also lens-iris diaphragm retropulsion syndrome (LIDRS) is common in these eyes and can be alleviated with an instrument to lift the iris from the capsule.

In patients with small pupils, the iris may be floppy and/or protrude through the wounds. Dr. Teichman strongly recommended expanding the pupil, such as with intracameral non-preserved bisulfite-free lidocaine and, phenylephrine/epinephrine, or pupil expansion devices. To insert a Malyugin ring, Dr. Teichman suggested using a Kuglen hook to bring the proximal iris to the ring, rather than vice versa as a tip.. The iris should not be flattened onto the capsule with OVD as this can make the pupil margin more difficult to grasp. For patients with additional complexities as well as a small pupil, Dr. Teichman recommended employing iris hooks, stressing that iris hooks can be used at any point in a difficult surgery. He recommended making all incisions for iris hooks at the same time; nicking vessels for visibility; and placing all iris hooks before grabbing the pupil.

Dr. Teichman also presented his techniques of choice for cataract surgery with zonulopathy, including capsule retractors, capsular tension rings (CTRs) and capsular tension segments (CTSs).

With very dense lenses, Dr. Teichman reiterated the importance of the "basics," including ensuring adequate pupil size, adding VisionBlue for visualization, and looking out for loose zonules, as these often coexist with dense lenses. He explained that while some very dense lenses require sculpting or the stop-and-chop approach, the 'divot chop' can be an effective technique for less severely dense lenses. In this technique, Dr. Teichman cautioned about avoiding excessive lateral separation during this method, due to the risk of zonule tearing.

White cataracts also pose a challenge for the surgeon. As with other complicated cases, VisionBlue to improve visualization and increased intralenticular pressure are vital. Dr. Teichman recommended puncturing the capsule with a 25-gauge needle when withdrawing fluid. Another tip he shared was to ensure the syringe is half-filled with BSS to create a strong vacuum and to puncture the lens capsule before aspiration begins to prevent the syringe becoming clogged with OVD. Once the lens is punctured, Dr. Teichman advised gently balloting the lens to release the posterior fluid. This prevents posterior fluid from pushing the lens forward, causing intralenticular pressure. A pressurized white cataract, signified by a lens thickness of more than 5.5 mm or an anterior chamber depth of less than 2 mm, is at a very high risk of rupture. Dr. Teichman recommended sculpting these lenses as a precaution.

Post-RK eyes render IOL calculations less reliable, and for these situations, Dr. Teichman suggested a Barrett True K calculation. He underscored the need to never cross incisions, even with a paracentesis. If there are eight cuts, it is possible to perform a 2.2 mm incision between cuts. If there are 16 or more cuts, a scleral tunnel will likely be necessary.

Small pupil treatment grid

Type of small pupil	Intracameral dilation	Malyugin ring		Iris hooks
Normal eye otherwise	✅	✅	OR	✅
Shallow AC / complex eye	✅	❌		✅
Synechiae	✅	✅	OR	✅
Very small / syndromic	✅	❌		✅

He warned his fellow surgeons to be prepared to suture RK incisions, and include this possibility in the informed consent document ahead of surgery. If RK incisions are leaking, options for closing them include 'T' sutures (in opposing directions), a cross stitch, or a purse stitch.

Focusing on posterior polar cataracts, Dr. Teichman emphasized that the capsule may have a pre-existing defect or may be very thin. Patients with posterior polar cataracts are generally younger (often in their 40s), with bilateral cataracts that often have a bullseye appearance. An anterior segment OCT can help in these cases. Hydrodissection is contraindicated in these patients. Instead, hydrodelineation is the recommended approach. Viscodissection, in which OVD is added judiciously and stopped as soon it begins to go around the equator, may also be beneficial. It is important not to rotate the nucleus, as this can rupture the posterior capsule. Dr. Teichmann recommended holding the OVD- or BSS-containing syringe in the second hand to fill the anterior chamber so it doesn't shallow.

When performing cataract surgery in a patient with zonulopathy, Dr. Teichman advised avoiding pulling the cortex to the center, but instead using the tangential/hurricane technique. He also recommended gently inserting the CTR to the left and moving clockwise around the curve of the capsule. Dr. Teichman also suggested opting for a lens that is more forgiving for decentration. With more severe zonulopathy (more than 4 clock hours), Dr. Teichman recommended Chang-modified capsule retractors. These cases require the suture-assisted placement of a modified CTR (such as Cionni and Malyugin).

When there is no capsule present, Dr. Teichman recommended performing cataract surgery by sliding the lens into the sulcus, and placing an optic capture. When that is not possible, the options are scleral suture or intrascleral haptic fixation with a double needle flange technique (known as the Yamane technique). Marking well is key to ensuring the proper placement of the lens, and avoiding a tilted lens.

In summary, Dr. Teichman stressed that the way to become a great surgeon is comprehensive planning, which entails picking the right surgery for the right patient. He recommended treating every patient as if they're a complex case, and therefore becoming familiar with best practices to optimize visualization and anterior chamber depth and maintaining diligence throughout the surgical process.

Building the Practice you Want

CHRYSSA MCALISTER, MD

Dr. McAlister discussed her career trajectory, including in academic and community ophthalmology; practice ethics, especially in the context of the growth of for-profit practices; and tips and pearls about building a rewarding and thriving practice.

Career Trajectory

Dr. McAlister studied medicine at Dalhousie University and pursued her ophthalmology residency at the University of Toronto in 2007. Following her residency, she completed a Master's in Health Science Bioethics. While she had intended to pursue a career as an academic physician, she decided to build her community practice after her husband was offered a position in Kitchener, Ontario.

The advantages of a community practice include work-life balance, due to shorter commutes and the option to limit or scale up academic commitments as desired. In addition, outside of fulfilling operating room time and meeting call requirements, community ophthalmology offers a high degree of autonomy and allows for a diverse practice. Dr. McAlister performs cataract surgery, pterygium surgery, the full range of laser surgeries, intravitreal injections, as well as minor pediatric surgeries and strabismus surgeries. Disadvantages include that community physicians may feel less engaged in academics, there is less subspecialty support for patients with complex eye disease, and in-person continuing medical education is less easily accessible.

Dr. McAlister stressed that there are many opportunities for academic engagement and leadership for community ophthalmologists if they look for them. Academic pursuits include teaching, committee involvement with the Royal College of Physicians of Canada and provincial college committees, hospital leadership, medical education for generalists and more. As an example of a local leadership initiative, Dr. McAlister presented the Waterloo Regional Eye Program that she developed with her colleagues. The website for the Program includes videos and downloadable patient handouts on a wide range of surgical procedures. The website also shows wait times for the surgeons in the region, as well as listing physicians by geographic location and specialty. The site is also a valuable resource for referring providers in the Waterloo region.

Practice Standards and Ethics

Dr. McAlister emphasized that new-to-practice doctors are expected to know the CMA's Code of Ethics as well as their provincial College's guidelines for ophthalmologists. When it comes to billing, Dr. McAlister emphasized that the CMA details two main imperatives: to avoid tests and procedures that patients don't need and to use health resources judiciously. These principles are especially important to protect amid the shift toward large, corporate, for-profit practices, through which inappropriate practices can become protocolized.

Two vulnerabilities that are taken advantage of in profit-driven practices include that non-insured services in Canada are not well regulated, and most provincial billing systems are exclusively based on trust. Dr. McAlister encouraged the physicians in attendance to protect this trust and practice stewardship of the Canadian health care system.

While there are benefits of mega practices, such as accessing technology and work-life balance, Dr. McAlister emphasized that these practices, with the goal of attracting private equity, can incentivize the inappropriate use of non-insured testing, refusal to see less lucrative patient populations, such as pediatric patients, inappropriate procedures and encouraging surgeries that are not necessary. While starting out as an associate can be ideal, Dr. McAlister encouraged physicians to advocate for appropriate care, recognizing that ophthalmologists are ultimately responsible for their patients, even when care is delegated to another provider.

Tips and Pearls

Dr. McAlister encouraged ophthalmology residents to do community electives, form relationships with good mentors, do more non-cataract rotations and seek out exposure to rare ophthalmological cases that occur in the community as well. Dr. McAlister strongly recommended a diverse practice, as it ensures resilience against disruptive technologies that can transform specific procedures. She stressed that the more diverse one's skillset, the easier it will be to learn new skills as well as to adjust one's practice to changing needs in the community. She encouraged community ophthalmologists to step outside of their comfort zone, especially in the early years, when their practices are taking shape.

Another key pearl is to find a mentor. Dr. McAlister recommended that those who want to practice in the community find a community ophthalmologist as a mentor. She stressed that surgery comes with triumphs and disappointments, and it helps to have someone who understands these emotions.

When setting up an office, Dr. McAlister recommended buying all of the equipment that is necessary for an efficient practice, and hiring an optometrist to help with post-operative patient follow-up. Dr. McAlister explained she only sees post-operative patients if they have a problem, which greatly frees up her time. She recommended 3.5 full time staff, which includes redundancy to ensure availability. She also discharges stable chronic patients to their optometrists, unless they have more advanced disease.

To retain staff, Dr. McAlister recommended considering a health and wellness account, RRSP matching, a yearly bonus, incremental raises (these should be planned in advance), providing office snacks that staff prefer and a lunchroom to provide a break space. Dr. McAlister also suggested acts of kindness, such as providing earlier appointment offerings for health care professionals, and buying coffee and donuts for the operating room team. Such acts make one's day more positive and boost morale.

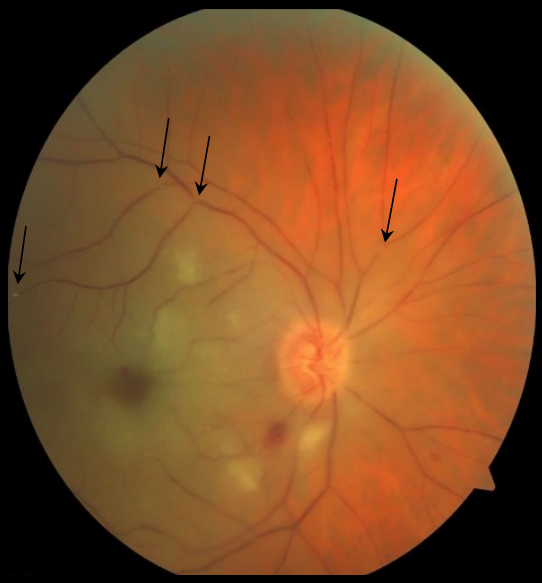
Neuro-ophthalmological Pitfalls Not to Miss on Call

LAURA DONADLSON, MD

Sudden, painless vision loss is a concerning presentation that requires timely diagnosis and intervention. Possible diagnoses include anterior ischemic optic neuropathy, retinal vascular occlusion, retinal detachment, and vitreous hemorrhage.
One major pitfall to avoid is not missing GCA. This condition can cause irreversible, bilateral vision loss if not treated urgently with steroids. Dr. Donaldson emphasized that up to
20% of all patients will not present with systemic GCA symptoms, such as headache and jaw claudication, and it is imperative to consider this possibility in all patients with anterior ischemic optic neuropathy. Whenever GCA is a possibility, immediate ESR and CRP testing is essential.

The clinical exam and history are key in determining the likelihood of GCA and distinguishing GCA from other causes of optic nerve ischemia. Dr. Donaldson recommended asking about transient monocular vision loss, which occurs in approximately a third of patients who develop GCA. Other signs to look for include bilateral simultaneous or closely sequential AION, absence of a crowded, "disc at risk" in the unaffected eye, pallid optic disc edema, and severe central vision loss. GCA is also very probable whenever there is involvement of multiple ocular circulations, including:

- Bilateral, simultaneous or immediately sequential anterior ischemic optic neuropathy
- Anterior ischemic optic neuropathy in combination with CRAO, cilioretinal artery occlusion, or cotton wool spots outside of the peripapillary region
- Ischemic vision loss in combination with cranial nerve palsy



Dr. Donaldson then highlighted a case of CRAO (see image below on this page) emphasizing these patients are stroke patients for whom an urgent embolic workup can be life-saving. Prompt imaging of the carotid arteries is required and in some cases, carotid stenting or another surgical intervention may be necessary to prevent further ischemic events.

Subacute vision loss, particularly with pain on eye movement, raises suspicion for optic neuritis. It is very important to distinguish typical optic neuritis from atypical presentations, most importantly antibody-mediated optic neuritis in NMO and MOGAD. Red flags for atypical optic neuritis include the following:

- Occurrence in children
- Occurrence in older adults
- Occurrence in a non-Caucasian patient
- Bilateral involvement (this is very uncommon and should trigger treatment)
- Severe disc edema
- Severe vision loss (no light perception)

MRI findings include:

- Longitudinally extensive enhancement of the optic nerve
- Chiasm involvement
- Perineuritis
- Lack of typical white matter lesions of MS

Treatment for NMO and MOGAD includes high-dose IV steroids and plasma exchange. In addition, long-term maintenance therapy is recommended for the first event of NMO and usually after a second event of MOGAD. Neurologists will typically manage these patients.

The diagnostic workup for acute optic neuritis should include brain and orbital MRI with contrast. Dr. Donaldson also recommended testing for NMO/MOG antibodies, noting she usually orders this test for any patient who doesn't have a known diagnosis of multiple sclerosis. An urgent spinal MRI is also

warranted in these cases. Dr. Donaldson emphasized the need to strongly consider initiating IV steroid treatment for patients with the red flags listed above. Oral high dose prednisone may be substituted if IV is not available though due to the high dosage, pharmacists are highly likely to call for clarification, so it is vital for clinicians to include their contact number on the prescription.

Another potentially difficult neuro-ophthalmological concern is acute unilateral vision loss with a normal fundus exam. Possible diagnoses include retrobulbar optic neuritis, early compressive optic neuropathy, traumatic optic neuropathy, and hyperacute CRAO. Posterior ischemic optic neuropathy should be considered but it is almost always seen in one of two settings: post-operative (most commonly with spinal surgery) or in GCA. Other potential causes include early or retrobulbar infiltrative, inflammatory, or infectious optic neuropathy. If there is no relative afferent pupillary defect, possibilities are very limited and include occult maculopathy such as cancer-associated retinopathy and non-physiologic vision loss.

Diplopia, another common presenting symptom in neuroophthalmological emergencies, can be especially challenging. Early management requires determining whether the cause is an isolated cranial nerve palsy or a more complex neurological issue. Dr. Donaldson encouraged ophthalmologists to look for red flags indicative of a more serious condition, including a history of cancer, GCA symptoms, a thunderclap headache, severe pain, vision loss, brainstem symptoms such as dizziness and dysphagia, ataxia, other focal neurologic symptoms, and orbital signs.

For an isolated sixth cranial nerve palsy in a patient in their 50s with vascular risk factors and no red flags, Dr. Donaldson recommended observation after 2 to 3 months. However, if patients have any red flags, urgent MRI is necessary, using the CISS or FIESTA protocol.

For patients with an isolated fourth cranial nerve palsy, it is necessary to determine whether the cause is congenital or acquired. While congenital cases are referred for further follow-up, an MRI with CISS/FIESTA protocols is necessary for acquired disease.

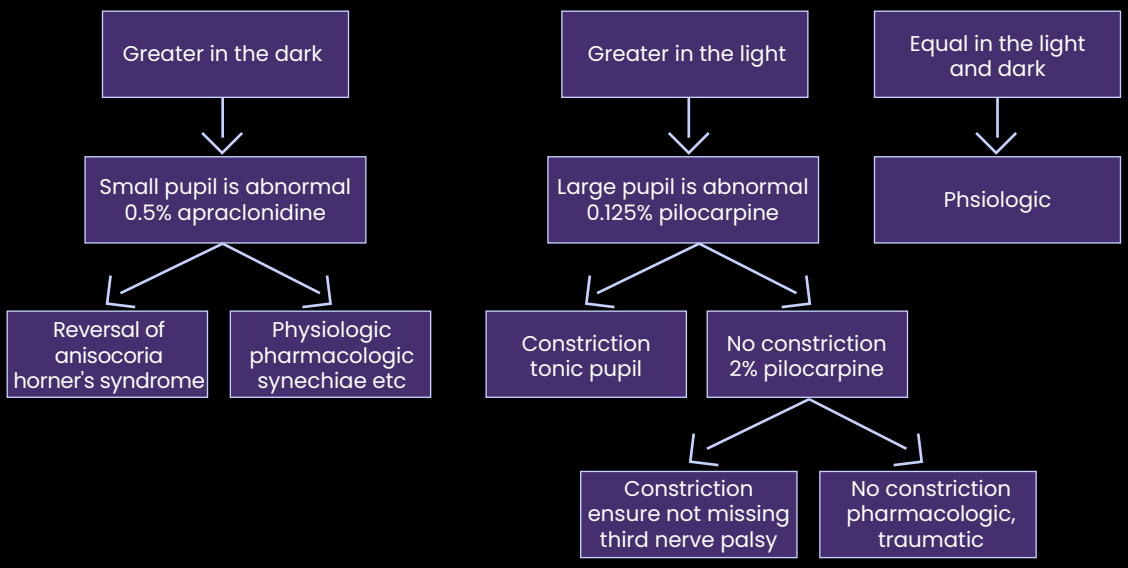
In cases of suspected third nerve palsy, an emergency CT angiogram is essential, as aneurysms compressing the third nerve are at high risk of rupture within the first 2 weeks after becoming symptomatic.

In patients with an abnormal pupil, not-to-be-missed diagnoses include Horner's syndrome in the case of a small pupil and third nerve palsy in the case of a large pupil. It is important to note though, that an isolated dilated pupil does not represent a third nerve palsy, so carefully examine for ocular motility defects. If there is a high suspicion for carotid artery dissection with acute Horner syndrome, Dr. Donaldson recommended initiating the patient on low dose aspirin even with negative imaging. Cervical artery dissection accounts for only 1–2% of all ischemic strokes, but in young people it accounts for 10–25% of strokes. Almost all occur within 2 weeks after dissection. Dr. Donaldson summarized the diagnostic algorithm for small and large pupil abnormalities.

Q&A

In the case of a patient with CRAO, would you recommend starting them on low-dose aspirin?
Yes, I think you should be very comfortable starting someone on aspirin low dose, so long as you ask about bleeding concerns.

Assessment of Anisocoria



Ask Me Anything!

With the field so rapidly evolving, which ophthalmology journals are best for staying up to date with little time?

Dr. Chan: I recommend EyeWorld, the official magazine of the ASCRS for which I formerly served as an editor. A great deal of thought and expertise are put into what the general readership may benefit from, and you can search the magazine's website by topic.

Dr. McAlister: I find the ASCRS and the AAO memberships useful, as they provide a large database of searchable information. For general ophthalmologists, review articles in high-impact journals can help you determine the current and potential future treatment standards. I find Canadian Eye Care Today often publishes thoughtful summaries of topics by someone I respect.

Dr. Teichman: I agree that EyeWorld and the AAO's EyeNet are very useful for staying up to date, generally. I find the University of Toronto's Ophthalmology Rounds to be helpful as well. My personal strategy is to order physical copies of journals. I look at the table of contents and if there is one article I'm interested in, I rip the article out of the journal. If there is more than one article, I circle them on the table of contents and keep the whole journal. Then, I take a morning to read the saved articles all at once, when I have the time and energy.

Dr. Darvish: I do the same thing with journals. Rather than reading them in one sitting, however, I try to read one article a week. I find kera-net, the online resource of the Cornea Society, to be a high-yield resource. There is also a service you can sign up to that scours ophthalmology journals and sends out emails that summarize and link to articles. I occasionally find out about a relevant article through this service. I find smaller meetings like the Walter Wright Symposium and the Sally Letson Symposium to be much more digestible and valuable than large meetings.

I like to give patients handouts before and after either a surgical or laser procedure, as well as to educate patients about a new diagnosis. Are there any non-paper options?

Dr. Donaldson: I don't think you can avoid paper, unfortunately. When you're educating patients about a new diagnosis and the next steps, there is too much information to take in at once. Patients are in a high stress moment and will remember, sadly, very little of what you say. Paper handouts aren't a waste of paper, in my view.

Dr. McAlister: I agree that paper is helpful. I also use QR codes to direct patients to the online versions of handouts, as these websites also contain useful videos and other information.

Dr. Saheb: I've just recently used large language models to draft standard guides, such as a post-operation handout for various kinds of surgeries. You can start with ChatGPT or Perplexity and then edit and personalize the AI write-up to your practice.

Dr. McAlister: I ask the referring physician to discuss the procedure with the patient to print the appropriate patient handout from www.waterlooeye.ca. Patients often come to see me and they have the printout in front of them, because their optometrist provided it.

If you were to pick two conferences to go to each year, which two would you choose?

Dr. Teichman: I recommend the COS meeting for all Canadian ophthalmologists, especially for networking. That said, the smaller meetings are typically better if the goal is to keep up with new developments.

Dr. Darvish: I prefer ESCRS, because there is more a diversity of opinion and you can see what's coming, because the field is more advanced in Europe.

How do you manage efficiency with volume and patients?

Dr. Gupta: I will tell people, "I will give you all the time in the world, and I will answer every single question, but I may not be able to do that right now." If I don't have time to address the patient's concerns, I schedule their next appointment as the last appointment of the day, so I can take more time. In an extreme case, I have called a patient on my walk home several days in a row to answer their questions.

Dr. McAlister: Some patients need to be able to tell their story. If you look at them without looking at your screen, and let them speak freely for a minute or so, they will feel heard. I also recommend providing handouts and using body language, like standing up, to make it clear when you need to move on.

Dr. Chan: I also ask patients to send a list of typed questions in advance, as I can't read all patients' handwriting. This consolidates the patient's

concerns, and gives me time to provide the patient handouts that they need.

Dr. Saheb: Sometimes I ask patients to think of their two most important questions, if possible. I explain that way, I'll be able to answer the questions properly.

How do you manage billing efficiently as a new attending?

Dr. McAlister:: I recommend CabMD, even though my EMR includes billing services, because it is so intuitive. I don't need to know the numbers of the codes. The software automatically pops up the additional codes that may be relevant, such as after-hours codes or in-hospital codes. In CabMD, I can print out a monthly report that will highlight in red where the amount submitted is different than the amount paid. This makes it easy to find rejections, which are often paid at $0, rather than rejected with a notification.

Dr. Darvish: I meet with several peers about once a year to discuss our billing practices. This can be helpful to ensure we are billing appropriately and there aren't important codes that we could be missing.

For those who own a clinic or pay fixed fees, how do you find work-life balance?

Dr. Gupta: There are two currencies in life, time and money. Take some time off.

Dr. McAllister: I have a solo practice and I take about 6 weeks of vacation a year. I have no difficulty covering my overhead and don't worry about taking vacation. When I'm on vacation, my staff are either doing preoperative testing that has non-insured services associated with it, or I have an optometrist taking care of my post-op patients. Approximately 30% of revenue goes toward overhead costs, even accounting for 6 weeks of vacation. I work 5 days a week.

Dr. Donaldson: I am an associate at a couple of different clinics. I recommend choosing the clinic that you're going to work in very carefully. The clinics I work in make it very easy for me to work, as well as to take time off, because there are several doctors in the office who cover each other. This means that the scripts don't pile up for my glaucoma patients while I'm on vacation.

How do you feel the most efficient cataract patients are run?

Dr. Darvish: Surgical counselling is very important. I recommend having a surgical counsellor talk to patients about lens options. Once I began employing a surgical counsellor, I find my efficiency and conversion rate went up significantly.

Dr. Teichman: Surgical counsellors can be very helpful. However, other practices can achieve clinic efficiency by relying on optometrists for counselling or, in my case, I have a fellow who works with me and provides counselling. We use the Rendia videos, but you have to watch them and be selective, because the videos are made for the U.S. and some are focussed on upselling.

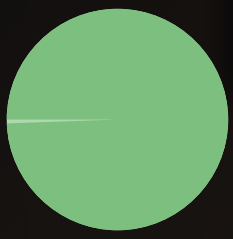
Dr. McAlister: I ask my technician to talk to patients about their goals, I find surgical consultants can be useful, but they also get a commission, so I have had to spend time undoing what the consultant has done. I recommend avoiding the terms "premium" and "upgrade". Trifocal implants are not ideal for all patients, for example. I use the term "non-insured services."

Dr. Darvish: My opening line is that "All the lenses are the same quality. What you're going to pay for is reducing the prescription of your glasses." That builds trust, and helps patients make the decision.

Attendee Feedback

The topics covered during the conference provided a comprehensive discussion of patient and disease management for ocular diseases.

Clinician feedback survey prompt

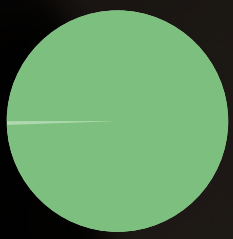


STRONGLY AGREE	98%
AGREE	2%
DISAGREE	0%
STRONGLY DISAGREE	0%

100% AFFIRMATIVE

The information presented during the conference was high-quality, useful, and relevant to my ophthalmology practice.

Clinician feedback survey prompt

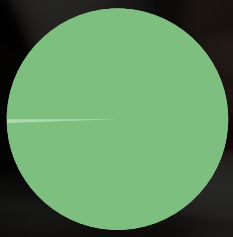


STRONGLY AGREE	99%
AGREE	1%
DISAGREE	0%
STRONGLY DISAGREE	0%

100% AFFIRMATIVE

Conference presentations were appropriate for my level and provided new information or perspectives.

Clinician feedback survey prompt



STRONGLY AGREE	97%
AGREE	3%
DISAGREE	0%
STRONGLY DISAGREE	0%

100% AFFIRMATIVE

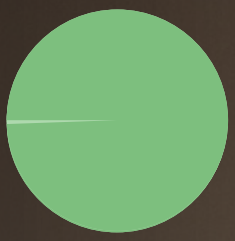
The timing of the agenda (length of lectures, panels, Q&A) was appropriate.

Clinician feedback survey prompt

STRONGLY AGREE	98%
AGREE	2%
DISAGREE	0%
STRONGLY DISAGREE	0%

100% AFFIRMATIVE

The conference offered good networking opportunities with colleagues and industry representatives.



STRONGLY AGREE	95%
AGREE	5%
DISAGREE	0%
STRONGLY DISAGREE	0%

100% AFFIRMATIVE

Clinician feedback survey prompt

"Really appreciated having longer presentations that went in depth"

"Thanks so much. Can I be invited next year?"

"I really loved the question-and-answer period at the end as well. Great job!"

"Great topics. Great speakers."

Closing Remarks and Adjournment

HADY SAHEB, MD

Dr. Saheb thanked the speakers for their excellent talks and thanked the participants for their engagement throughout the conference.

Dr. Saheb also took a moment to thank the sponsors of the 2024 Rising Stars in Ophthalmology Conference and reiterated that the steering committee is looking forward to planning 2025's conference!

About the Organizer

Founded in 2009, Catalytic Health is one of Canada's largest medical education agencies and reaches over 50,000 Canadian clinicians a year with its educational programs, services and platforms.

As the largest independent medical publisher in Canada, our peer-reviewed open access scientific journals are a practical resource for Canadian healthcare practitioners, providing insights based on real-world experience.

Learn more about us at catalytichealth.com.

catalytic health
communications • advertising • strategy

15 years