

# MIGS – Who, What, Where, When, Why, and How

Derek Leale, MD  
Sightline Ophthalmic Associates  
Sewickley, PA



# Financial Disclosures:

None 😞



# First up: Why MIGS?



# Traditional Training in Glaucoma Management

- Glaucoma is a progressive multifactorial disease characterised by damage to the optic nerve.
- It is strongly associated with elevated intraocular pressure (IOP).
- Glaucoma results in progressive visual field loss and is a leading cause of blindness worldwide, second only to cataract.
- An ideal treatment regimen should achieve glaucoma control with the lowest risk and fewest adverse effects, while preserving the patient's visual function and quality of life.
- Drops have been mainstay in Glaucoma Management for many years.
- ALT was introduced in the early 1970's.
- SLT was FDA approved in 2001.
- First MIGS device (Istent) was FDA approved in 2012.



# Traditional Glaucoma Treatment Pathway

1. Diagnose Glaucoma
2. Start on a drop
3. Add another drop or combination
4. Keep adding more drops and/or perform SLT
5. Trab/Tube time



# Goods and Bads of Drops for Glaucoma

## The Good:

- They Work!
  - Backed by years of use and numerous studies
  - Good safety profile
- Low Risk
  - Allergies
  - Interactions
- Lots of choices



# The Goods and Bads of Drops for Glaucoma

## The Bad:

- **Compliance/adherence** - worse as you add more drops or alter dosing intervals
- **Cost**
  - Patient
    - Cost of medication or copay
  - Practice
    - Phone calls (patient and pharmacy)
    - Refills
    - Authorizations
- **Side effects**



# Side Effects of Drops

- **Prostaglandin Analogs:** eye color change, darkening of eyelid skin, eyelash growth, droopy eyelids, sunken eyes, stinging, eye redness, and itching
- **Beta Blockers:** low blood pressure, reduced pulse rate, fatigue, shortness of breath; rarely: reduced libido, depression.
- **Alpha Agonists:** burning or stinging, fatigue, headache, drowsiness, dry mouth and nose, relatively higher likelihood of allergic reaction.
- **Carbonic Anhydrase Inhibitors:** in eye drop form: stinging, burning, eye discomfort; in pill form: tingling hands and feet, fatigue, stomach upset, memory problems, frequent urination.
- **Rho Kinase Inhibitors:** eye redness, corneal deposits, stinging, and small bleeds on the white of the eye, empty wallets





# Why **wouldn't** you use your medication?

- Perceived benefit vs lack of concern for vision loss
  - with limited symptoms, patients have a hard time believing there is benefit from treatment



# Adherence and Persistence

- Adherence - patient's "willingness" to stick to treatment
- Compliance - patients "comply" with doctor's orders
- Persistence - continued use of medication
- White Coat Adherence - use of medication as directed around the time of an appointment



# Are my patients are lying to me!!!

- Hard to measure Adherence and Persistence - survey vs. mechanical vs. pharmacy records
- In the Glaucoma Adherence and Persistence Study (GAPS), 89% of people reported taking their medication everyday, by pharmacy records, these patients **only had 64% of the medication** required to take every dose
- **Over half** of the 10,620 participants **(55%) stopped and restarted** their meds within a 12 month period
- **Only 10%** of participants filled their prescriptions continuously for 12 months
- In another study 25% of the participants (2,440) filled an initial prescription but **never filled a second.**
- Another study of 3,623 patients revealed that **nearly half discontinued all medications** by the end of 12 months



# Travatan Dosing Aid Study

- **CONCLUSIONS:**
- Nearly 45% of patients using an electronic monitoring device who **knew** they were being monitored and were **provided free medication** were non-adherent!!



- According to Schwartz and Quigley, research brings the “unwelcome conclusion that persistence with initial glaucoma medication is as low as 33%–39% at one year”.



# My patients follow my instructions!

- Do you have patients who:
  - Say they use their drops
  - Have consistently good IOP's
  - Attend most, if not all, of their scheduled visits
  - BUT THEY SHOW PROGRESSION IN FIELD LOSS OR NERVE FIBER LAYER LOSS.....
- MORE THAN 80% OF PATIENTS ADHERE TO THE PRESCRIPTION 5 DAYS BEFORE AND AFTER A SCHEDULED APPOINTMENT!!



# Reasons for Non-compliance

Glaucoma Adherence and Persistency Study identified the following barriers:

1. Cost (55%)
2. Forgetfulness (32%)
3. Fear or Denial (16%)
4. Lack of understanding of glaucoma (16%)
5. Regimen complexity (15%)

Consider patients ability to open bottle, squeeze it as well as accurately get it into the eye.



## Adherence With Glaucoma Medications

**Medication adherence among the nearly 3 million Americans with glaucoma has been reported to be as low as 20 percent.**

Gatwood J, Brooks C, Meacham R, et al. Facilitators and barriers to glaucoma medication adherence. *J Glaucoma* 2022;31:1:31-36.





Problem with Poor Adherence

**Unfortunately, medication adherence**  
**less than 80 percent has been**  
**associated with worsening visual field**  
**defect severity.**

Sleath B, Blalock S, Covert D, et al. The relationship between glaucoma medication adherence, eye drop technique, and visual field defect severity. *Ophthalmology* 2011;118:2398-2402



An obvious but unfortunate truth:

# Drops Only Work When Used!



# Interventional Glaucoma

Providing methods to control IOP that are independent of the patient.

Anticipatory treatment vs. reactive - Ian Conner, MD

“Glaucoma is a surgical disease.”

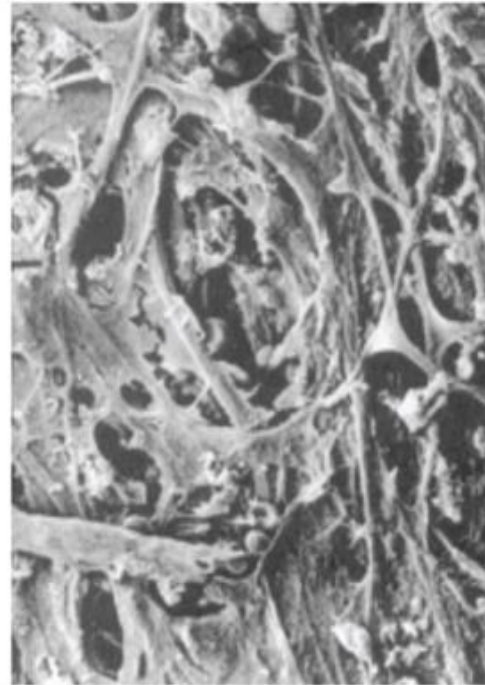
Steven Sarkisian Jr., MD

Can we create perfect compliance through procedures and/or surgery?



# Alternative to drops - Laser Trabeculoplasty

- ALT approved 1979 and SLT approved 2001



# Benefits of SLT

Long Term Control - works 24 hrs/day independent of patient's actions

- Can eliminate the adherence issues discussed previously
- Limits IOP fluctuations over time

## Effective

- Works in 80% of patients
- As first line treatment, expect 30% reduction
- Most effective when used as first line treatment



# Benefits of SLT

## Repeatable

- Since there is no thermal damage to TM, procedure can be repeated
- First treatment is indicator for subsequent treatments
- Second treatment shown to get IOP back to baseline of first treatment

## Does not damage trabecular meshwork

- Allow for retreatment
- No effect on other treatment options (surgical or medical)



# Issues with SLT

- Potential for IOP spike post treatment
  - Most likely in heavily pigmented angles
  - Less than 5% of patients treated
  - Almost always temporary, resolves in 24 hours
- May not have measurable effect on all patients (80% have effect)



# Issues with SLT

- Treatment is not permanent and may need repeated
- Not effective for all types of glaucoma
- Post op inflammation
  - This can be 50% or more of patients, believed to be some of the “effect”, usually not treated, if significant could treat with an NSAID or steroid





# Selective Laser Trabeculoplasty

- Contraindications for use:
  - Patients with a previous or current history of anterior segment inflammation
  - Patients who have extensive anterior synechiae
  - Patients who had a traumatic injury to the trabecular meshwork
  - Patients with narrow angles that limit access with laser



# LiGHT Study – Conclusion

Selective laser trabeculoplasty is associated with lower cost, good clinical outcomes, with lower symptom scores, and drop-freedom for most patients and **should be offered as an alternative to intraocular pressure-lowering drops.**



# LiGHT Study Conclusion

- Selective laser trabeculoplasty is a safe treatment for OAG and OHT, providing **better long-term disease control than initial drop therapy**, with reduced need for incisional glaucoma and cataract surgery over 6 years.



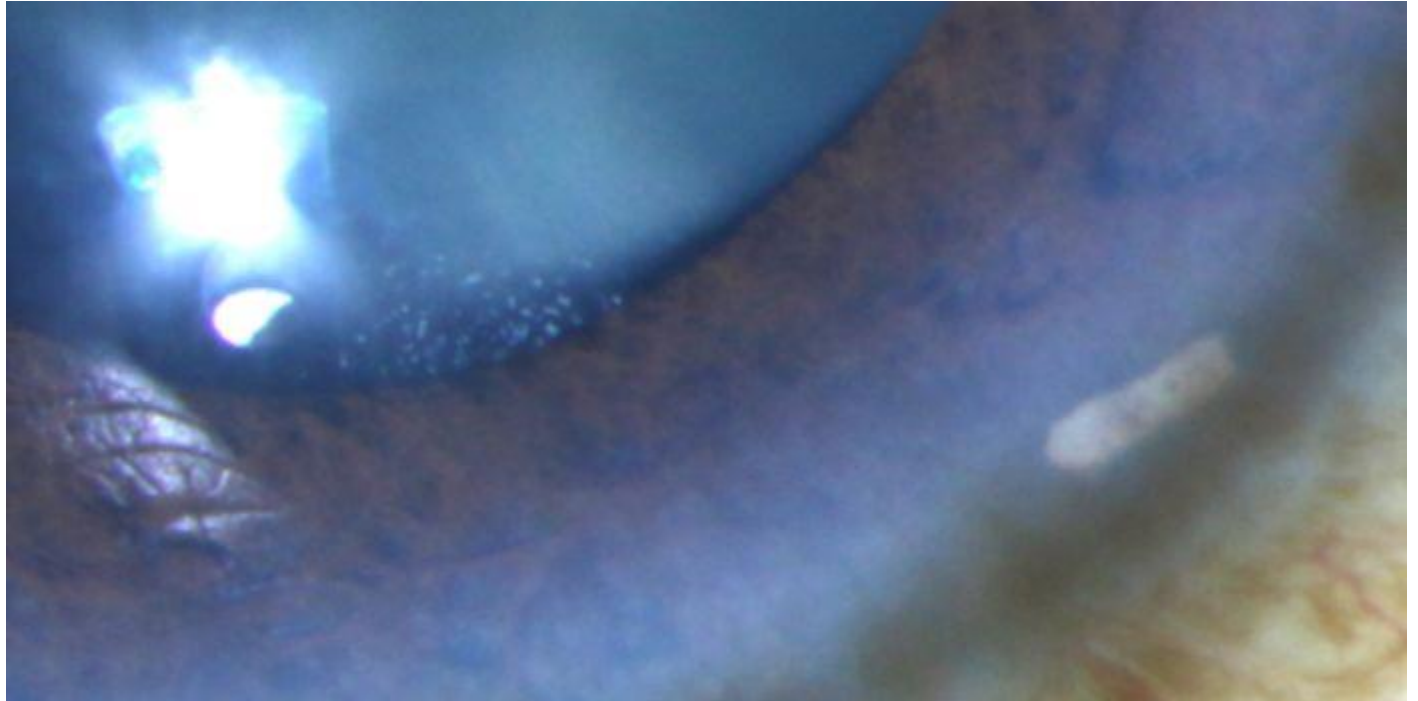
# Other Options for IOP Treatment Without Drops

- Durysta
  - Bimatoprost sustained release implant for treatment of open angle glaucoma or ocular hypertension
  - 10mcg with solid polymer matrix that slowly biodegrades over time
  - At 12 weeks, 30% reduction in IOP
  - 40% had IOP control at 12 months
  - 28% had IOP control at 24 months
  - Treatment with Durysta is limited to one administration per eye.



# Durysta Implant

<https://youtu.be/3FoFcjiqa8Y>



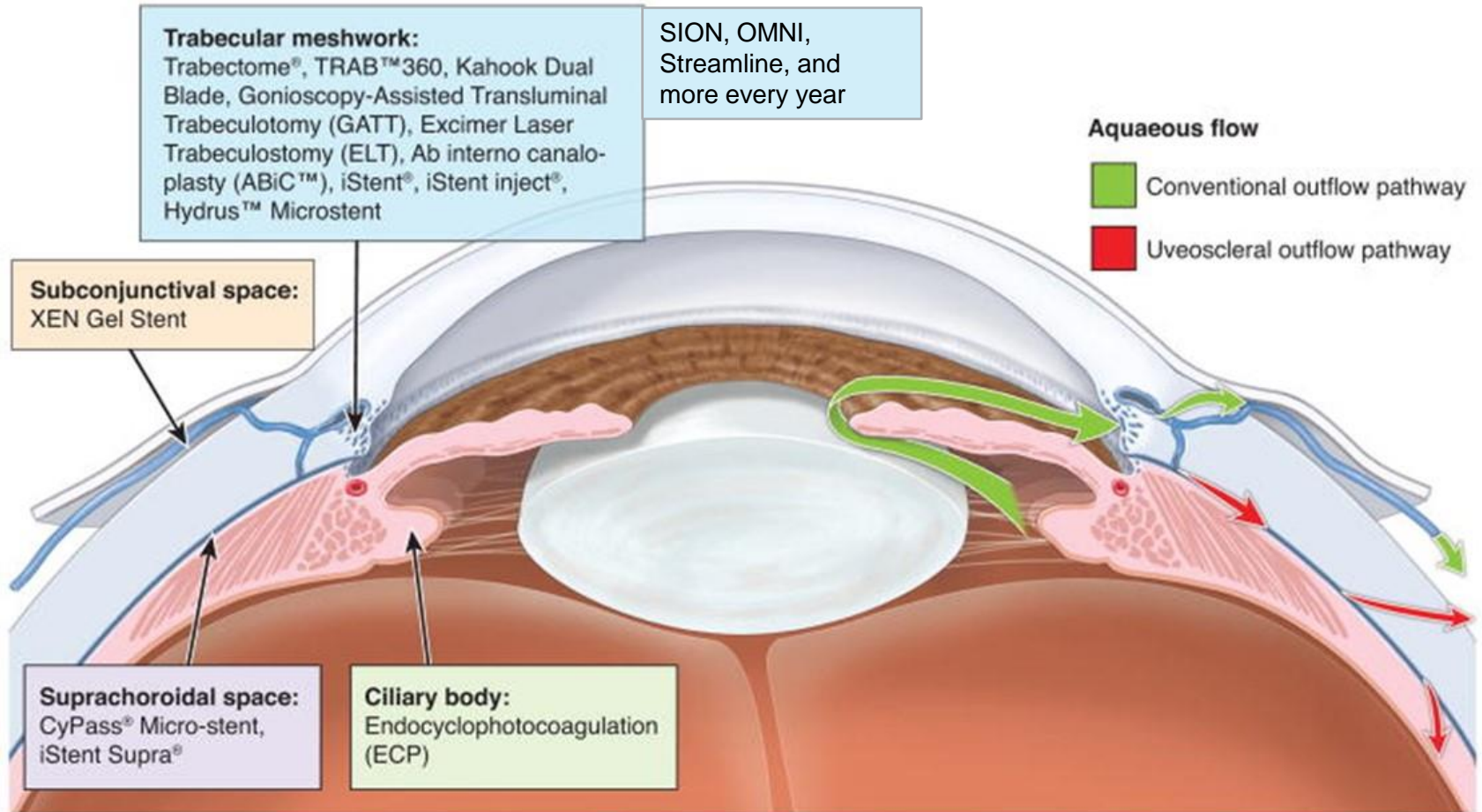
# MIGS – What and Where??

MIGS – Micro (or minimally) –invasive glaucoma surgery  
- term coined in 2009 by Ike Ahmed

- Diverse group of procedures that share 5 common criteria

1. *High safety profile:* VS traditional surgeries - lower risk of serious complications such as hypotony, choroidal effusions, or choroidal hemorrhages
2. *Minimal disruption of normal anatomy:* MIGS enhance physiological outflow mechanisms without major alterations in normal ocular anatomy.
3. *Ab interno approach:* MIGS are typically performed *ab interno* through a traditional clear corneal wound with direct visualization of the anatomical target.
4. *Efficacy:* MIGS should offer meaningful IOP lowering effect. The level of IOP reduction is often inferior to traditional filtering surgery but should be at least 20%. Alternatively, patients who do not experience an IOP decrease should attain the reduction of at least one medication.
5. *Ease of use for patients and physicians:* MIGS should allow for a rapid recovery with minimal additional downtime for patients. They should also be easily incorporated into traditional phacoemulsification surgery.





# MIGS – TM microbypass Stent

1. iStent (first generation)
2. iStent Inject (second generation)
3. Hydrus Microstent

Only done with cataract surgery. Not approved as a stand alone surgery.

Indicated for mild or moderate POAG only.

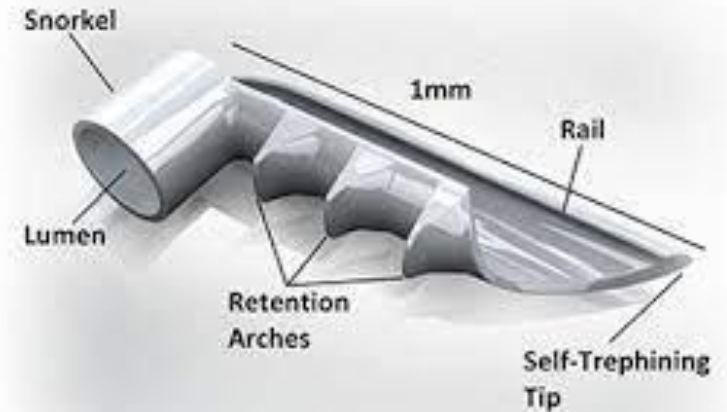
Not indicated for OHTN or other glaucomas.





# MIGS - iStent

- First MIGS device approved in US in 2012
- Single device inserted in TM
- Snorkel protruded through TM
- Open half pipe within TM
- Lumen 120 microns



# MIGS - iStent (first generation)

- Pivotal Study
  - 240 eyes with mild to moderate glaucoma and intraocular pressure less than or equal to 24 mmHg on one to three drops
  - primary endpoint was an IOP  $\leq 21$  mmHg without ocular hypotensive medications
  - At 12 months, 72% of iStent group and 50% of phaco only group were at primary endpoint
  - 66% of iStent group and 48% of phaco only group had IOP reduction of at least 20%



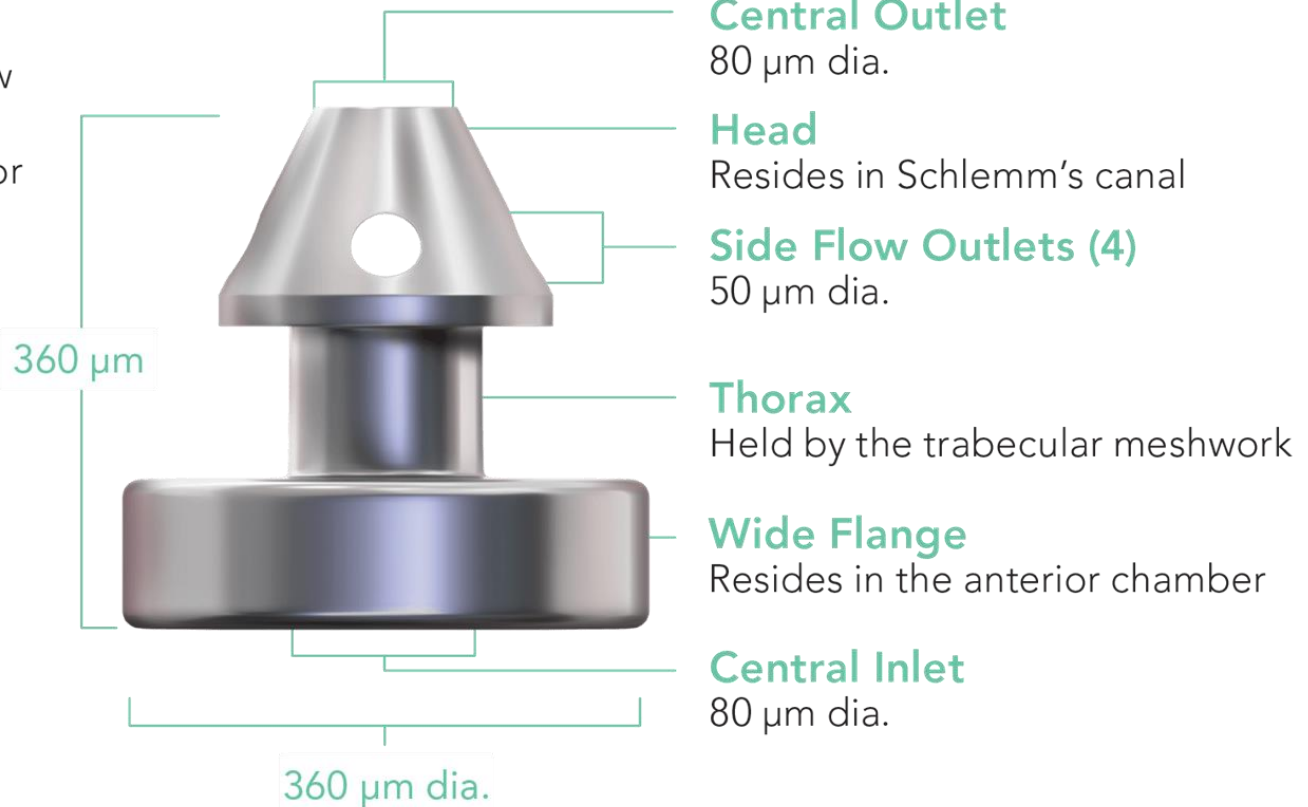
# MIGS - iStent Inject (2nd generation)

- 2 small stents placed 2-3 clock hours apart
- Head of iStent resides in Schlemm's Canal
- Flange resides in AC
- 80 micron lumen for each device
- FDA approval 2018

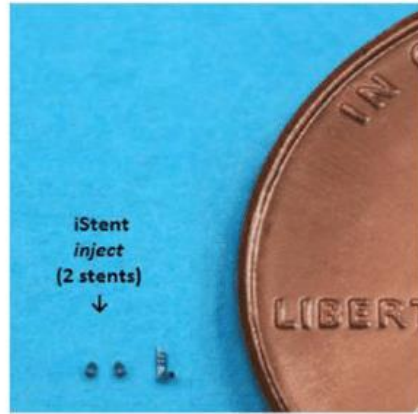


# MIGS - iStent Inject (2nd generation)

A central inlet and multiple flow outlets optimise flow and collector channel access.



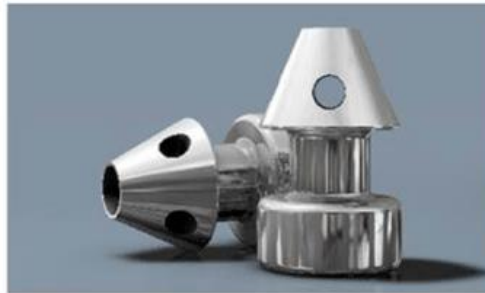
# MIGS - iStent Inject (2nd generation)



↑  
iStent



iStent®  
(1 stent per device)



iStent inject®  
(2 stents per device, each with 4 lateral outlet lumens for multidirectional outflow)

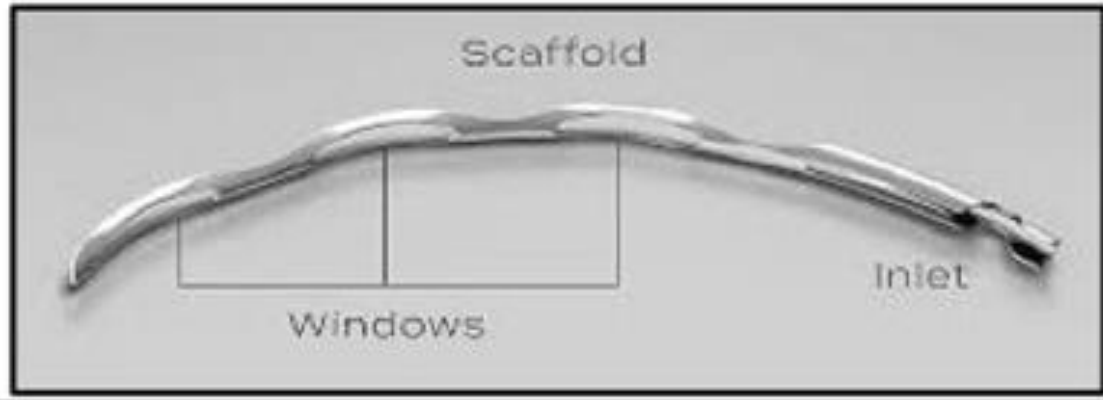
# MIGS - iStent Inject (2nd generation)

- Pivotal Study
  - 505 eye with mild or moderate POAG on up to 3 drops with preop IOP of less than or equal to 24
  - Primary endpoints - # of patients with >20% IOP reduction and change in unmedicated IOP at 24 months
  - iStent group - 75.8% had 20% or greater IOP reduction and had mean IOP reduction of 7.0mm Hg
  - Phaco only group - 61.9% had 20% or greater IOP reduction and had mean IOP reduction of 5.4mm Hg



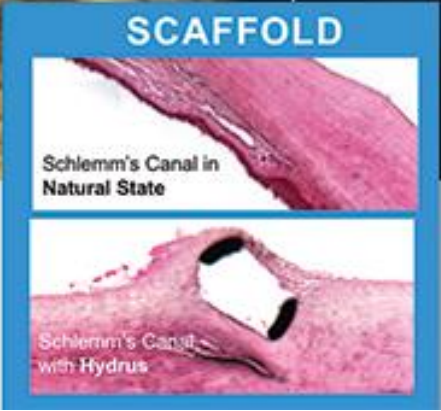
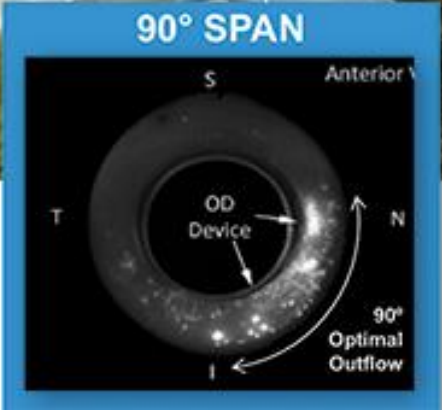
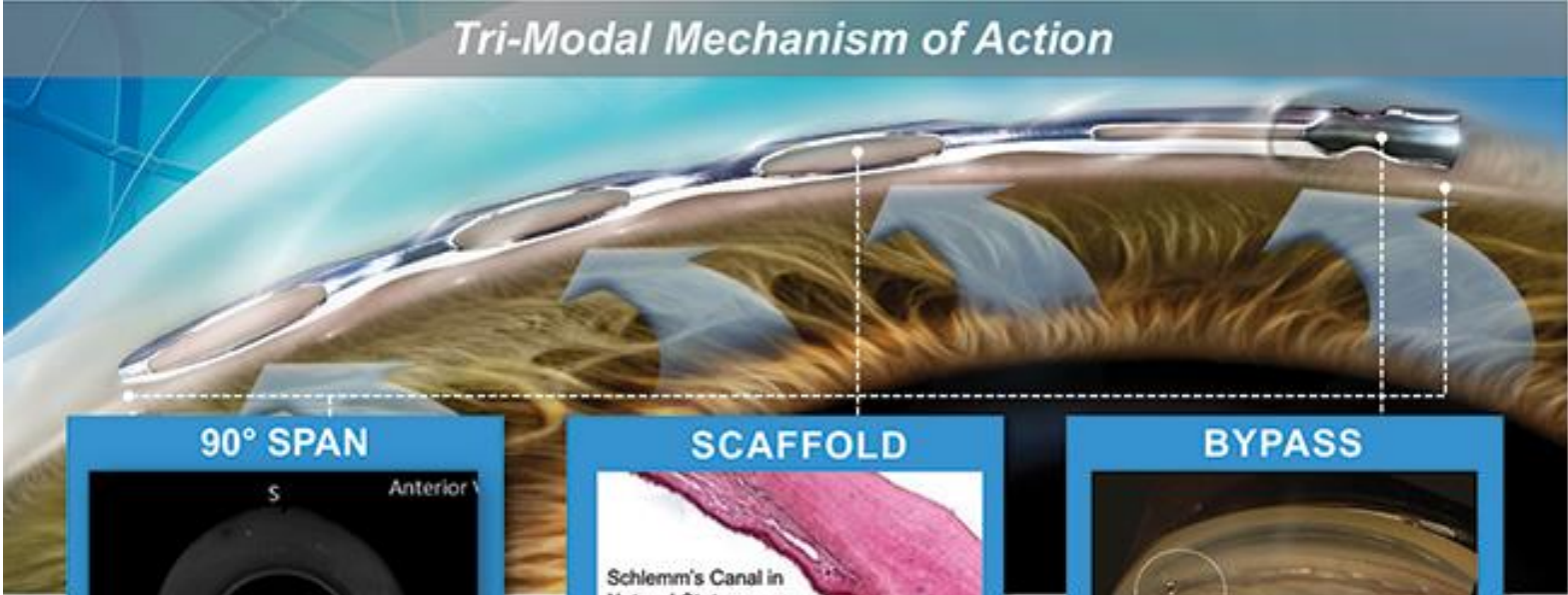
# MIGS - Hydrus Microstent

- FDA approved 2018
- 8mm long by 290 micron diameter
- Majority of stent resides in Schlemm's Canal and the inlet resides in AC
- Works by bypassing TM as well as expanding/dilating Schlemm's Canal



# MIGS - Hydrus Microstent

## Tri-Modal Mechanism of Action





# MIGS - Hydrus Microstent

- Pivotal Study - Horizon Study
  - 556 eyes with mild or moderate POAG on 1 or more drops with a washed out IOP between 22 and 34mm Hg
  - Main outcome measures: IOP, medication use, repeat glaucoma surgery, visual field and endothelial cell loss
  - Five year follow up in 80% of patients.
  - Results:
    - IOP of 18 or less unmedicated
      - 49.5% vs 33.8%



# MIGS - Hydrus Microstent

- Pivotal Study - Horizon Study
  - Results:
    - IOP reduction of 20% or more without medication
      - 54.2% vs 32.8%
    - Number of glaucoma medications
      - 0.5 vs 0.9
    - Rate of visual field progression
      - -0.26 dB/year vs. -0.49 dB/year in mean deviation
    - Medication free
      - 66% vs. 46%
    - Risk of incisional glaucoma surgery
      - 2.4% vs. 6.2%
    - No statistical difference in endothelial cell loss over 5 years



M



# MIGS - TM bypass by Tissue Removal (goniotomy)

- Kahook Dual Blade
- Trabectome
- Omni
- SION
- Streamline (technically)

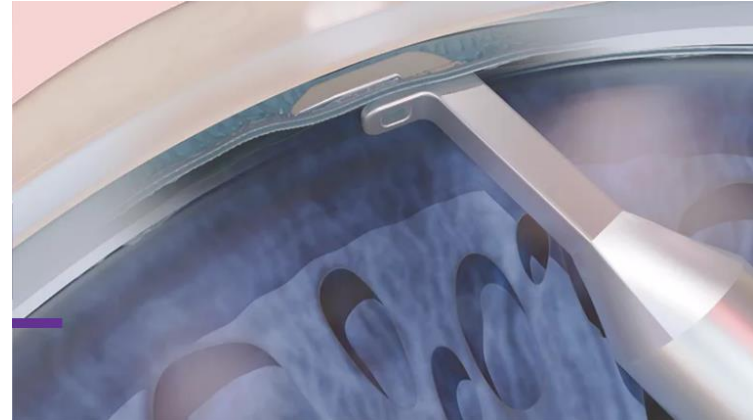
Can be performed with cataract surgery or stand alone.

Can be done in all types of glaucoma and ocular hypertension.



# MIGS - TM bypass by Tissue Removal (goniotomy)

- Different methods of unroofing the TM
  - Kahook/SION - physically cut the TM



# MIGS - TM bypass by Tissue Removal (goniotomy)

- Different methods of unroofing the TM
  - Kahook/SION - physically
  - Trabectome - electrocauter

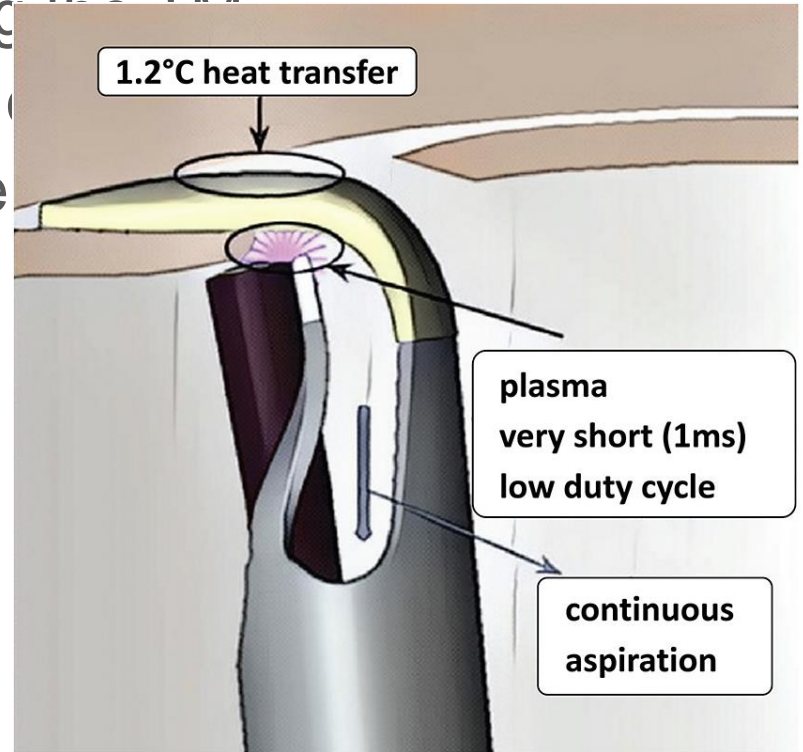
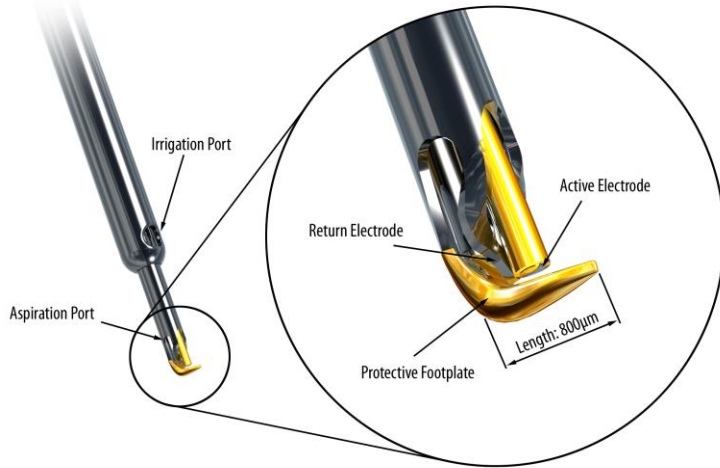


IMAGE PROVIDED BY AUTHORS



# MIGS - TM bypass by Tissue Removal (goniotomy)

- Different methods of unroofing the TM
  - Kahook - physically cut the TM
  - Trabectome - electrocautery with I&A
  - Omni - microcatheter threaded into Schlemm's Canal and then retracted, tearing the TM, similar to iTrack/GATT
  - Streamline – pokes a 150um hole into the TM



# MIGS - TM bypass by Tissue Removal (goniotomy)

- Omni – Goniotomy





# MIGS - TM bypass by Tissue Removal (goniotomy)

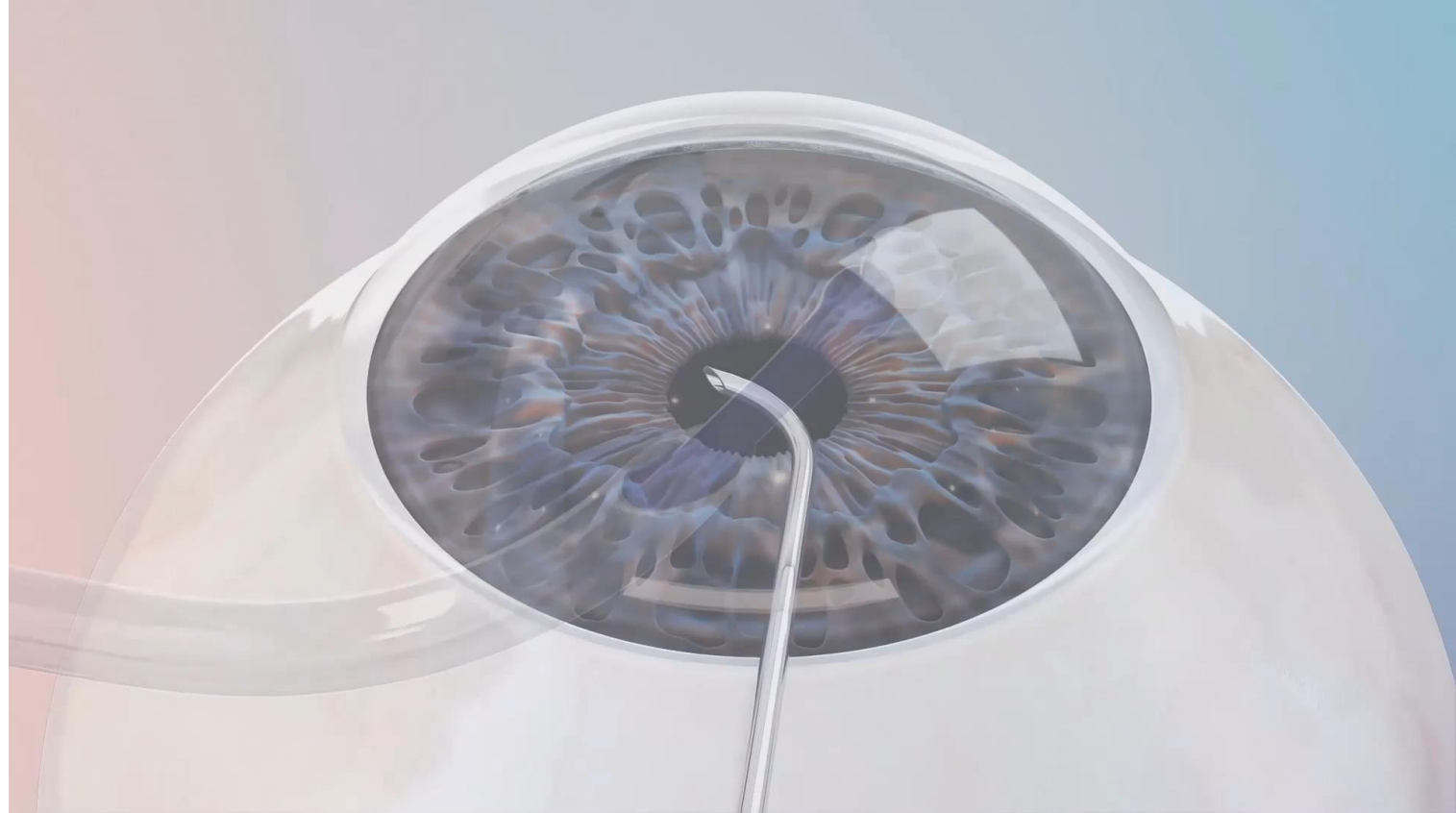


# MIGS - Canaloplasty

- Dilation of schlemm's canal, usually performed with viscoelastic gel
- OMNI, ABiC, Streamline (sort of)

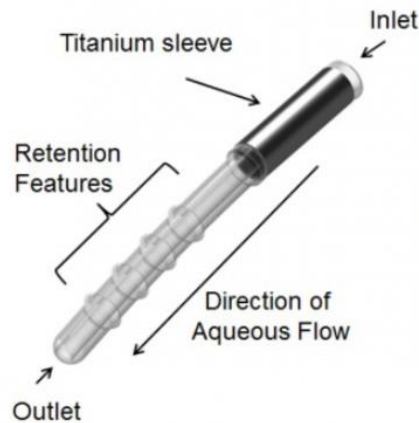
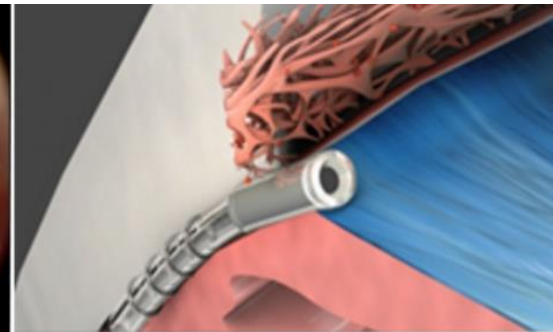


# OMNI Canaloplasty



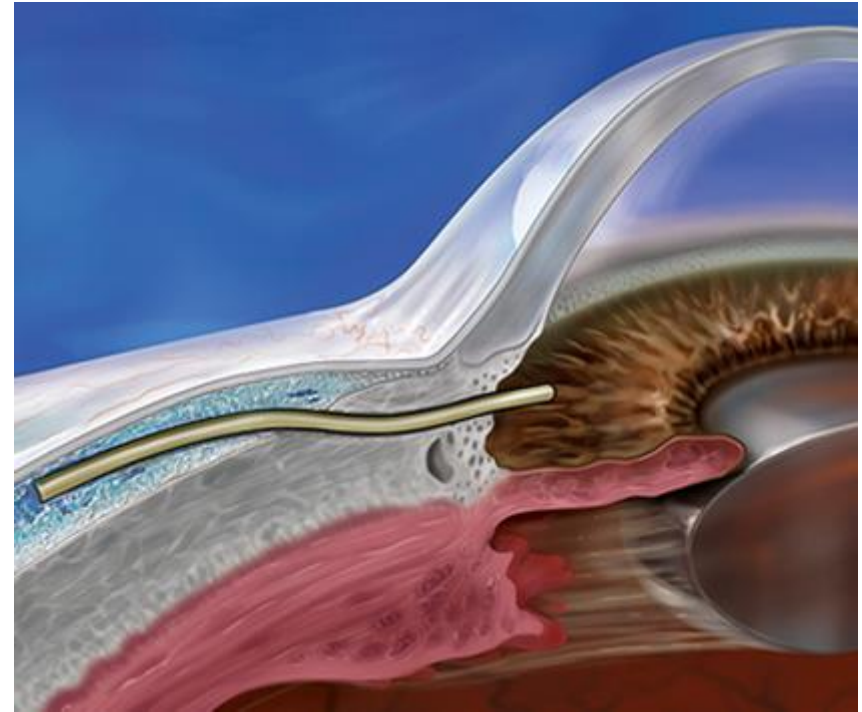
# MIGS – Aqueous Outflow via Suprachoroidal Space

- CyPass – Taken off market due to endothelial damage
- iStent Supra – Not yet approved



# MIGS – Aqueous shunting to subconjunctival space

- XEN Glaucoma Implant
  - Small 45 micron gel tube implanted through the TM and Sclera into the subconjunctival space to create a small filtering bleb.
  - Typically combined with MM-C
  - Can be thought of as a mini-tube



# MIGS – Combination Procedures

- Single-device:
  - OMNI – Single device can combine goniotomy and canaloplasty
  - Streamline – Goniotomy + Canaloplasty
- Multiple-device:
  - OMNI + stent (Hydrus vs iStent)
  - Endocyclophotocoagulation + almost any other device
  - iStent + iStent supra (part of a study)
  - OMNI + CyPass (now off market)



# MIGS – WHO and WHEN?

- Patient selection for MIGS is critical
  - Each MIGS device has its own indications for use – not all devices can be used for all patients with glaucoma
    - Stents – generally only in mild to moderate POAG (not severe), must be done with cataract surgery
    - OMNI, KDB, SION – Much wider range of indications
      - OHTN, POAG, MMG (steroid/uveitic)
      - Standalone or with cataract surgery



# MIGS – WHO?

- Indications vary by device – PLEASE SEND TESTING with your referrals!
- Current AAO staging guidelines:
  - Early/Mild – Normal HVF but has OCT or optic nerve changes consistent with glaucoma
  - Moderate – HVF showing abnormalities limited to one hemifield and not within 5 degrees of fixation
  - Severe/Advanced – HVF with defects in both hemifields or within 5 degrees of fixation

We do not have the capacity to get visual field testing on all potential MIGS candidates – PLEASE send fields if you have them, or well documented POAG staging as per the AAO guidelines





# MIGS – WHO?

- General Guidelines for MIGS candidates:
  - Any patient with POAG on drops
    - Risk profile for MIGS is so low that all patients with glaucoma should at least be counseled about MIGS as an option
    - Patients motivated to stop or decrease drop burden (cost, ADRs, etc)
  - High-risk OHTN (e.g. family history or on drops)
    - Limited in which MIGS devices can be used
  - Cataract surgery is an excellent time to discuss MIGS
    - More bang-for-your-buck: controlling IOP while the patient will already be in the OR anyway for their cataracts
  - Well-controlled patients are still great candidates
    - Any reduction in drop use puts a tool back in your toolbox for the future



# MIGS – WHO?

- **Contraindications:**

- Again varies by device but in general:
  - Angle closure glaucoma
  - Traumatic/angle-recession glaucoma
  - Patients with no view of the TM (for TM-based devices)

- **Anticoagulation??**

- Preference varies by surgeon
- Ideally pts can stop/hold their AC preop
- Some surgeons may alter choice of MIGS device if pt cannot stop blood thinners



# MIGS – HOW?

- Pre-op counseling and Post-op care/co-management
- Pre-op Counseling:
  - Less is more when it comes to specific devices
  - Counsel patients that there are various surgeries that can be done in combination with cataract surgery to help manage their glaucoma
    - When we see the patients for their cataract evals, we can review their testing and discuss which specific MIGS device we would recommend (varies by surgeon and disease staging)



# MIGS Post Op Management – Routine Cases

- Postop drop regimen from us is the same as normal
- Continue all pre-op IOP meds after surgery
  - Helps to smooth any perioperative IOP spikes
  - IOP ~25 or less at POD1/POW1 – monitor
  - If IOP remains well-controlled, can try weaning drops around 1mo postop once steroids are tapered
- Most patients will have some level of circulating RBCs in the AC, generally inconsequential



# MIGS Post Op Management – IOP Spikes

- Generally rare past POD1 unless steroid responder
- Mild elevation mid 20s/low 30s – consider adding topical agent
- Severe spike – Diamox, Aqueous release (burping)
- Closely monitor patients to make sure IOP remains controlled



# MIGS Post Op Management – Hyphema

- Many patients will have a microhyphema after MIGS
  - usually transient and self-limiting <1 wk
    - 1-2+ mixed RBCs in AC with normal postop cell
    - Sleep with head elevated, limit strenuous activity
- Layering Hyphema/Clot in AC
  - Careful IOP monitoring, add agents if necessary
  - Anticoagulation – STOP if possible, have patient reach out to prescribing Dr if unsure



# MIGS Post Op Management – Hyphema

- In rare cases of large hyphema with IOP resistant to treatment or corneal concerns, patients may need to go back to the OR for an anterior chamber washout



# MIGS Post Op Management – Hypotony

- Generally caused by small cyclodialysis cleft formed at the time of surgery
- Most will self-resolve within the first 1-2 weeks
  - STOP IOP-lowering meds
  - Topical cycloplegics to relax the ciliary body
  - Some argue decreasing steroids to increase scarring to close cleft
- MUST dilate patients to assess for choroidal effusions and monitor for resolution if present
- If not resolving, may need laser or surgical intervention to close cleft





# MIGS Post Op Management – Corneal Edema

- Rarely MIGS instrumentation may contact the endothelium causing a small, localized DM tear, flap, or detachment
- If only a small area is involved, localized corneal edema can be expected but should resolve quickly as endothelial cells repopulate the damaged area
- Can treat corneal edema with topical sodium chloride preparations



# MIGS Post Op Management – Endgame

- After initial postop concerns have been addressed (~1mo)
  - Wean patients from topical agents as able
  - Resume normal IOP monitoring and HVF/OCT testing as before
    - Set new baseline IOP for patients 4-8wks postop
  - Monitor and treat glaucoma as needed
    - SLT still potentially an option depending on what MIGS procedure they had done



# MIGS @ Sightline

- Dr. Leale (me)
  - Currently OMNI canaloplasty and/or goniotomy
  - Soon to trial a few combo OMNI/Hydrus cases
  - Trained on iStent, Hydrus, Kahook Dual Blade in residency
- Dr. Philips, Dr. Espandar
  - Hydrus Micro-stent or combination OMNI/Hydrus
- Currently not performing any MIGS as standalone procedures – only in combination with cataract surgery

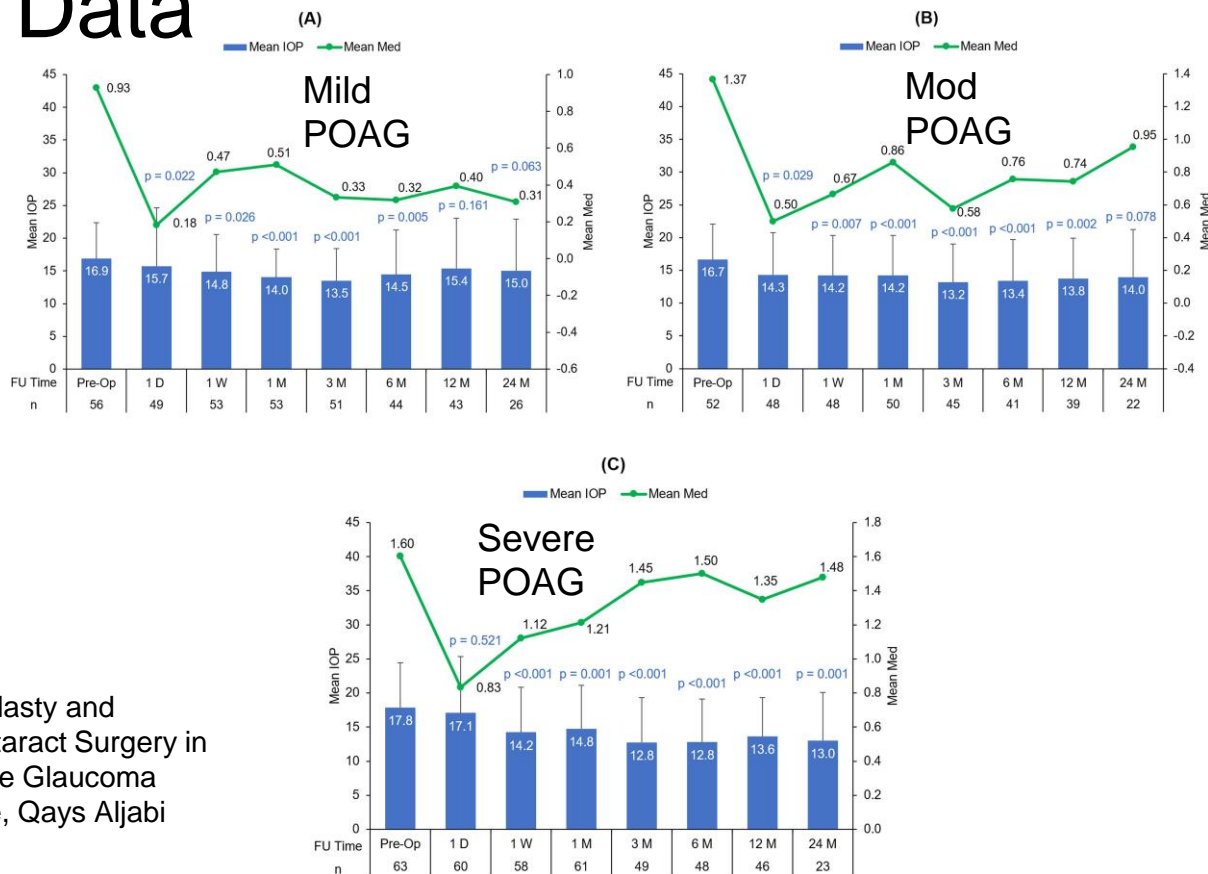


# OMNI Study Data

- Canaloplasty (180 to 360 deg) AND Goniotomy (Minimum 90 degrees)

- Single-center, 2yr data. N=171 eyes

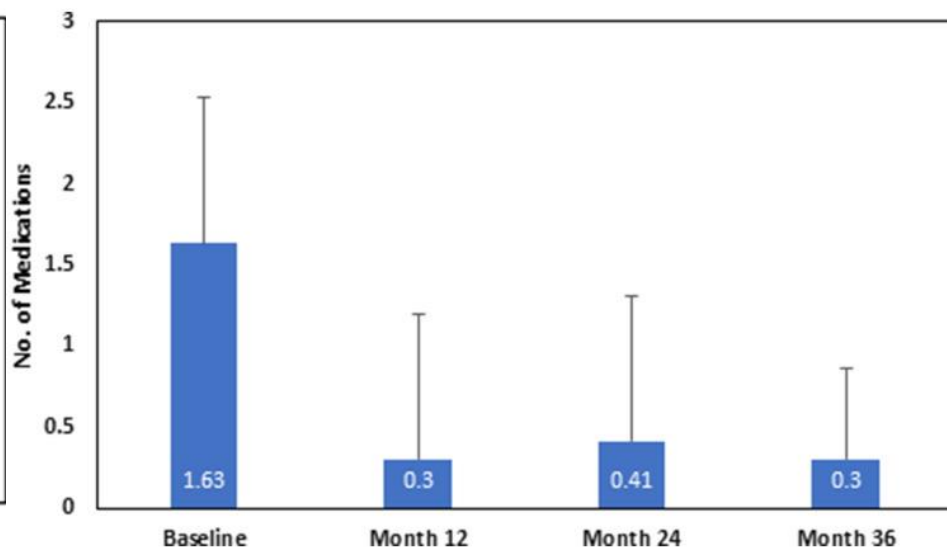
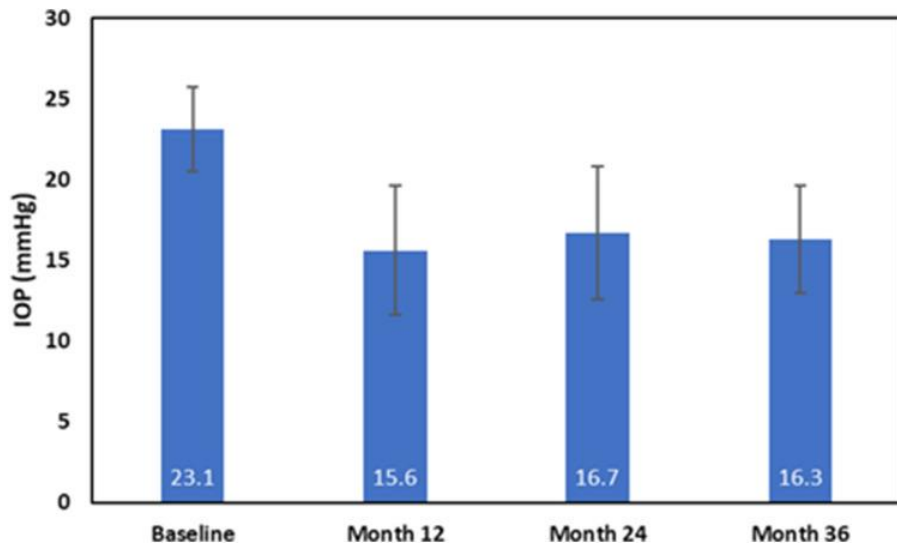
Real-World Outcomes of Canaloplasty and Trabeculotomy Combined with Cataract Surgery in Eyes with All Stages of Open-Angle Glaucoma  
Arkadiy Yadgarov, Kallista Dentice, Qays Aljabi (2023)



# OMNI Study Data

Greenwood MD, Yadgarov A, Flowers BE, Sarkisian SR Jr, Ohene-Nyako A, Dickerson JE Jr; GEMINI 2 STUDY GROUP. 36-Month Outcomes from the Prospective GEMINI Study: Canaloplasty and Trabeculotomy Combined with Cataract Surgery for Patients with Primary Open-Angle Glaucoma. Clin Ophthalmol. 2023 Dec 12;17:3817-3824. doi: 10.2147/OPHTH.S446486. PMID: 38105915; PMCID: PMC10725746.

- Original 12-mo prospective GEMINI study extended for 3-yr data
- N=66. 180-360 canaloplasty with 180 goniotomy



# OMNI Study Data – Canaloplasty Only

Ondrejka S, Körber N, Dhamdhare K. Long-term effect of canaloplasty on intraocular pressure and use of intraocular pressure-lowering medications in patients with open-angle glaucoma. J Cataract Refract Surg. 2022 Dec 1;48(12):1388-1393. doi: 10.1097/j.jcrs.0000000000001000. Epub 2022 Jul 1. PMID: 35796586.

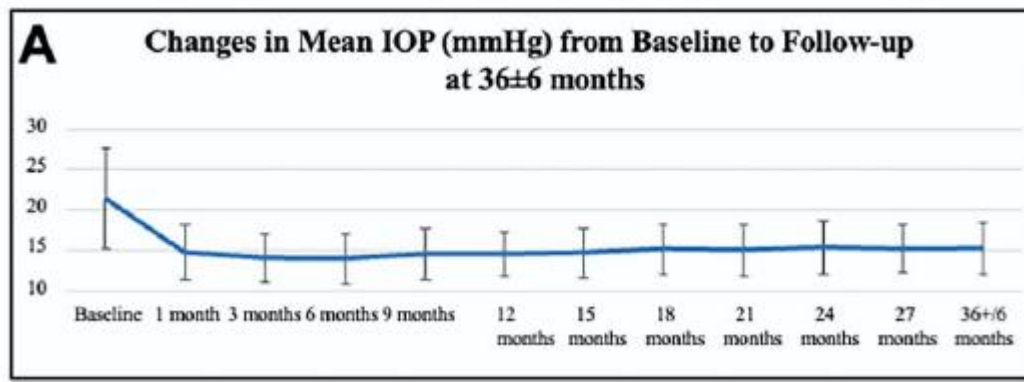


Table 1. Medication use by glaucoma type

Visit	Glaucoma type				
	All types	POAG	PEX	Pigmentary	Terminal
Baseline (n)	191	123	30	2	25
Mean (SD)	2.2 (0.89)	1.9 (0.81)	2.5 (0.86)	2.0 (0.00)	2.7 (0.75)
36 ± 6 mo (n)	184	122	30	2	25
Mean change (SD)	-1.7 (1.07)	-1.6 (0.88)	-2.4 (0.89)	-2.0 (0.00)	-1.1 (1.58)



# OMNI Study Data - Complications

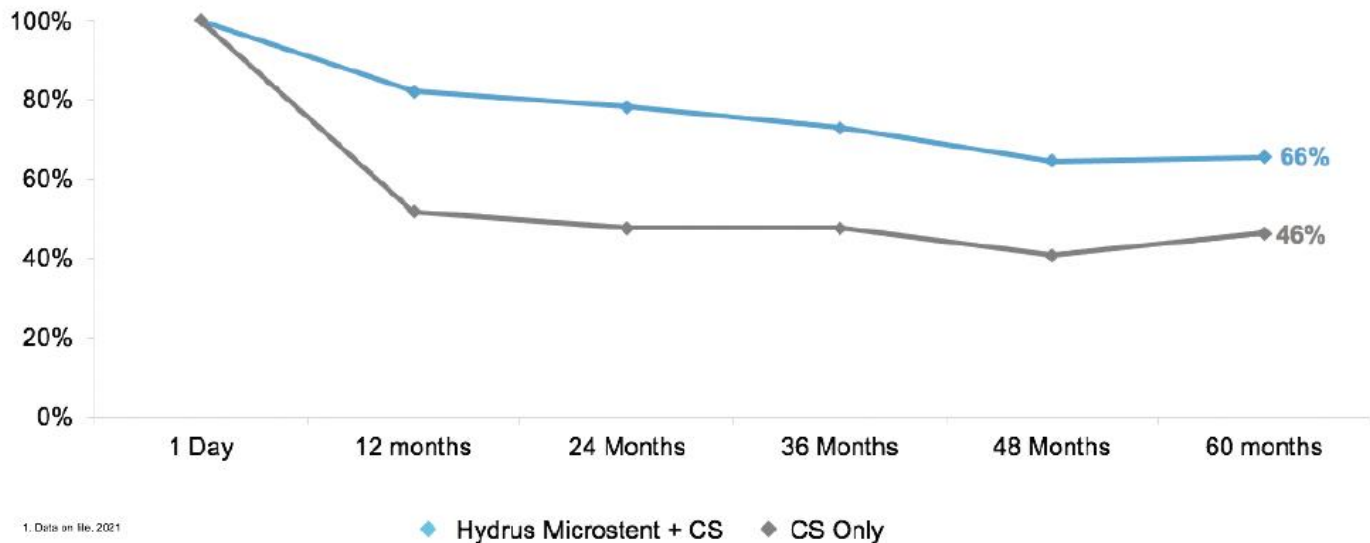
- Same study as before, using both canaloplasty AND goniotomy
  - IOP spike ( $>10\text{mmHg}$ ) – 4.7%
  - Hypotony ( $<6\text{mmhg}$ ) – 1.2%
  - Cyclodialysis Cleft – 1 eye, resolved spontaneously (N=171)
  - $>1\text{mm}$  Hyphema – 3.5%



# Hydrus Study Data

## HORIZON: Medication Free<sup>1</sup>

MEDICATION FREE 0-60 MONTHS





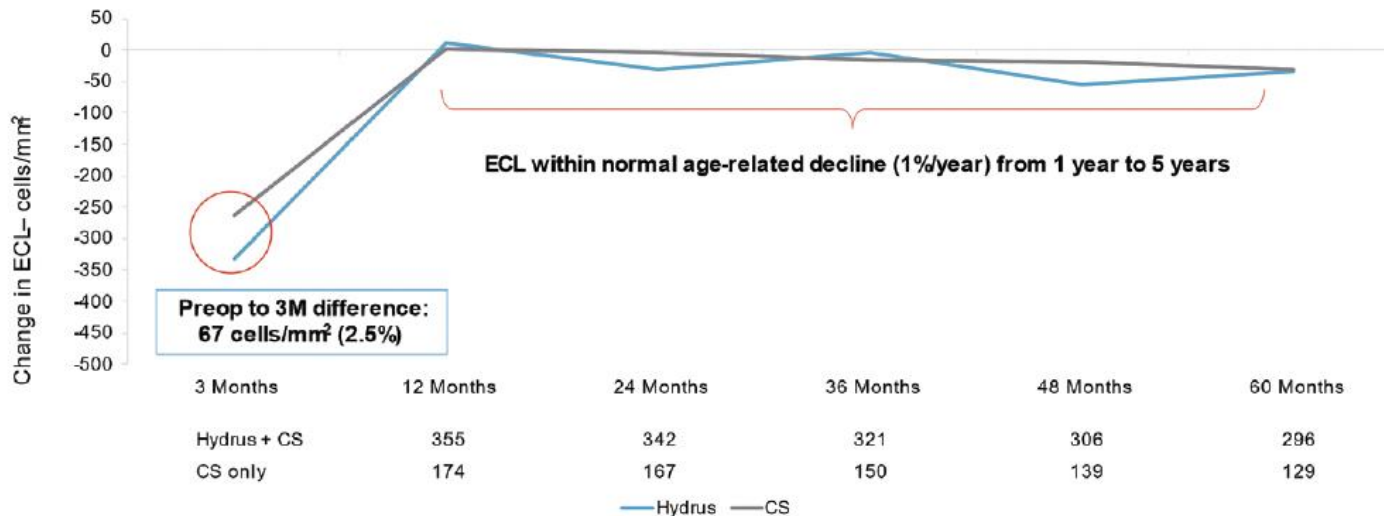
# Hydrus Study Data

## HORIZON Trial: Endothelial Cell Loss

5 Year follow up in randomized cohort N=556



### Visit to Visit Change in Mean Central Cell Count



# Hydrus Study Data

**TABLE. COMPARISON OF SAFETY OUTCOMES AT 5 YEARS IN THE HORIZON STUDY.**

	Cumulative to 5 Years	
	Hydrus MS (n=308)	CS Only (n=187)
IOP related events:		
IOP elevation ( $\geq 10$ mm Hg $> 30D$ )	0.8%	2.7%
Hypotony $\leq 6$ mm Hg $\geq 1$ month	0	0.5%
Loss of BCVA $\geq 2$ lines after 3 months	1.9%	2.1%
Loss of HVF mean derivation $\geq 2.5$ dB	8.4%	9.6%
Focal PAS		
Obstructive	5.4%	0
Non-obstructive	8.7%	3.7%
Corneal edema – severe $\geq 1$ day	0.5%	0.5%
Persistent inflammation	0.5%	2.1%
BCVA, best-corrected visual acuity; CS, cataract surgery; HVF, Humphrey Visual Field; IOP, intraocular pressure; MS, Microstent; PAS, peripheral anterior synechiae		

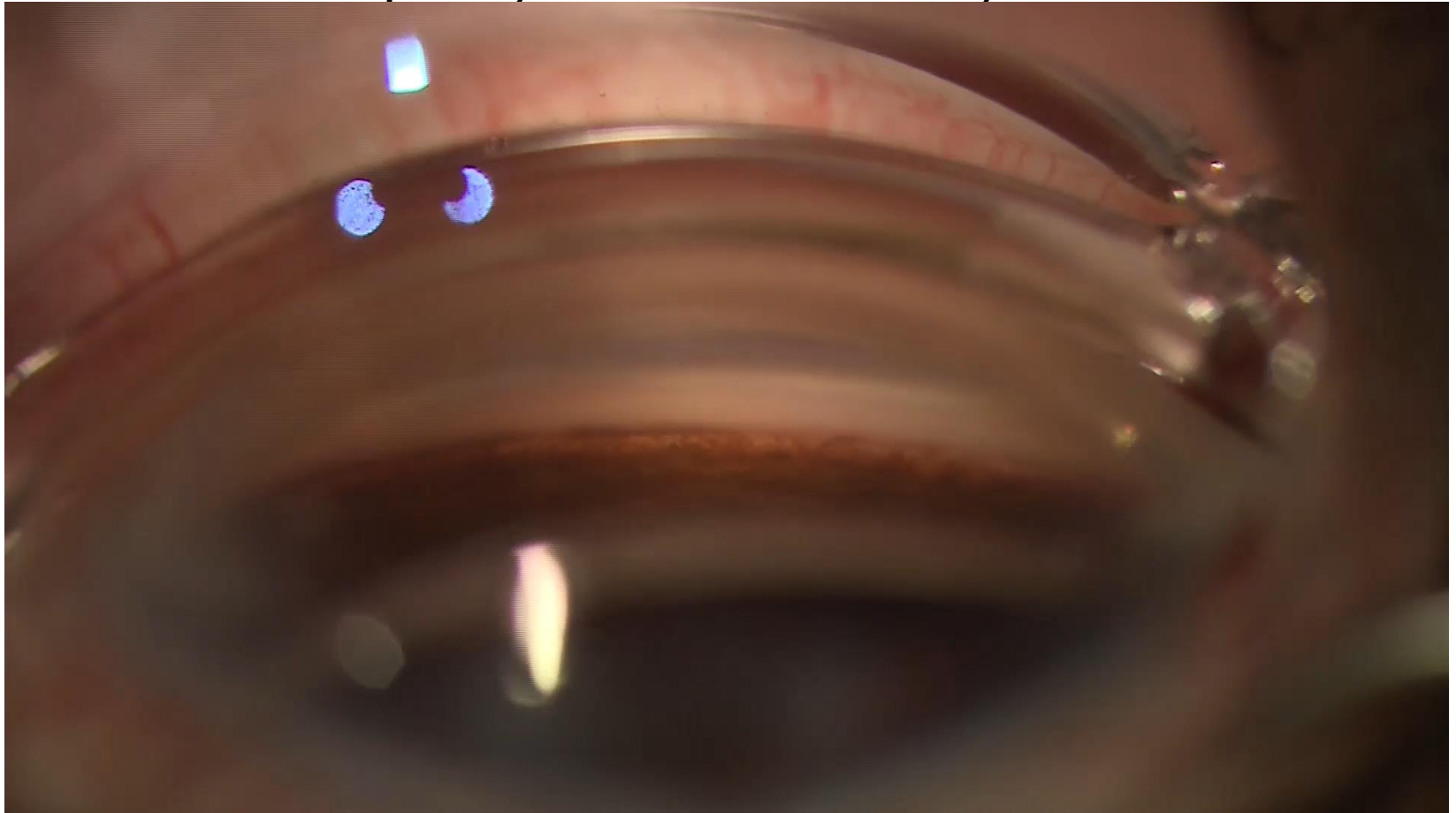


# MIGS - Conclusion

- MIGS is a safe and effective way to help our glaucoma patients at the time of cataract surgery
- MIGS should be discussed with any POAG or high risk OHTN patient prior to cataract surgery
  - Keep the conversation broad – specific MIGS devices are surgeon-dependent
- PLEASE send all testing and staging information with your cataract referrals (HVF, OCT, Mild/Mod/Severe, tMax, etc.)
- Postoperative complications are generally rare and mild, requiring temporary supportive care with IOP meds or steroids



# OMNI 360 Canaloplasty + 180 Goniotomy



# Hydrus Microstent Procedure

- <https://eyetube.net/videos/hydrus-microstent-for-glaucoma>



# Omni with Hydrus Procedure

- <https://eyetube.net/videos/omni-hydrus-combination-migs>



# MIGS - iStent (first generation)

<https://youtu.be/vKLC4f0ZUjE>



# Kahook Dual Blade Procedure

- <https://library.willseye.org/library-item/kahook-dual-blade-goniotomy/>





# Trabectome procedure

- <https://www.aao.org/education/basic-skills/trabectome-surgery>

