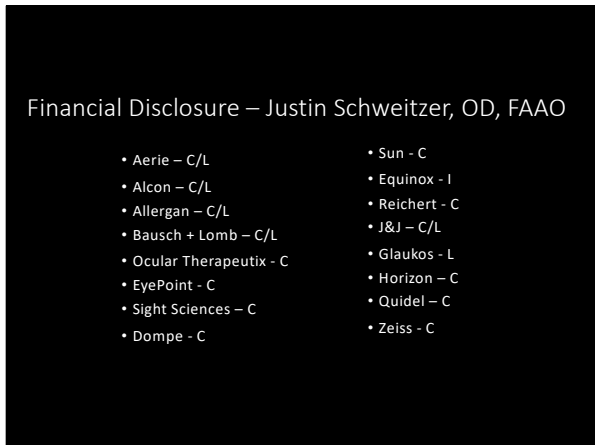




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Adherence with Topical Glaucoma Medication Monitored Electronically: The Toronto Glaucoma Adh Study

More than **90%** of patients are nonadherent to their ocular medication dosing regimens, and nearly **50%** discontinue taking their medications before 6 months¹

Nordstrom BL. Persistence and adherence with topical glaucoma therapy. *Am J Ophthalmol*. 2006;142:988-996.

4

Side Effects

Dennis, P. (2011, October 10). Adverse Effects, Adherence and Cost-Benefits in Glaucoma Treatment. *European Ophthalmic Review*.

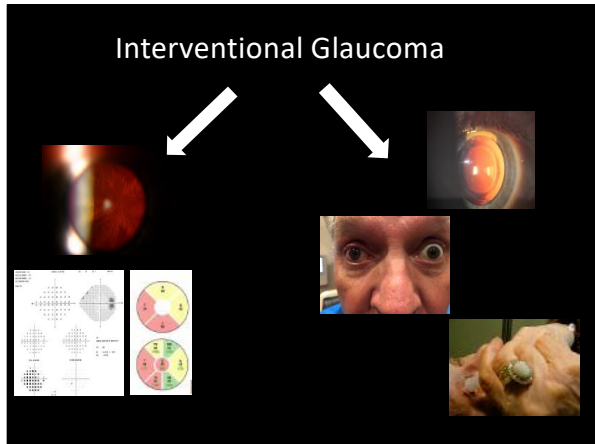
5

OSDI IMPROVEMENT IN IMPLANTED EYES¹

- Prospective, multicenter trial evaluating four ocular surface metrics 3 months post-stent implantation.
- n=47 eyes
- Other ocular health metrics improved as well:
 - 49% longer time to tear break-up (FTBUT) ($p<0.0001$)
 - Significantly reduced corneal/conjunctival staining (Oxford Schema) ($p<0.0001$)
 - Trend toward less hyperemia (Efron Score)

Schweitzer JA, Hauser WH, Ibach M, Baartman B, Gollamudi SR, Crothers AW, Linn JE, Berdahl JP. Prospective Interventional Cohort Study of Ocular Surface Disease Changes in Eyes After Trabecular Micro Bypass Stents Implantation (Stent or iStent Inject) with Phacoemulsification. *Ophthalmol Ther*. 2020 Aug 13.

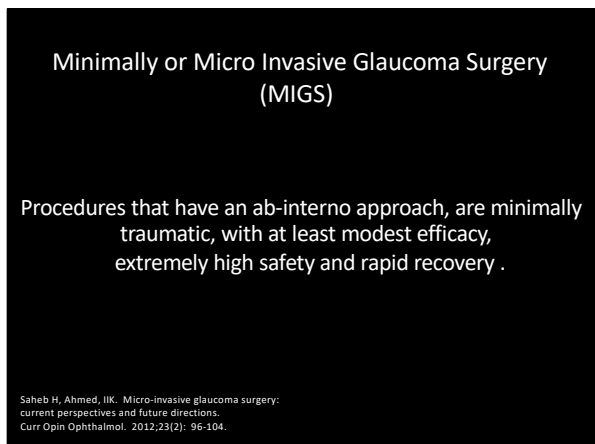
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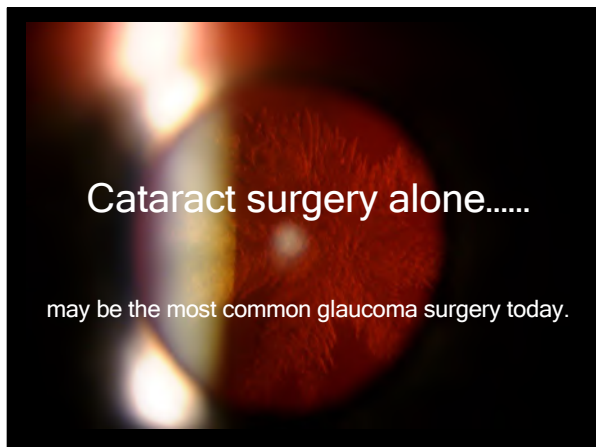
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Am J Ophthalmol. 2019 May;201:19-30. doi: 10.1016/j.ajo.2019.01.019. Epub 2019 Jan 28.

Cataract Surgery and Rate of Visual Field Progression in Primary Open-Angle Glaucoma.

Kim JH¹, Rabito AA², Morales E², Fathi N³, Lee WS², Yu E⁴, Allil AA⁵, Nouri-Mantavi K², Casceri J⁶.

@ Author Information

Abstract

PURPOSE: To test the hypothesis that cataract surgery slows the apparent rate of visual field (VF) decay in primary open-angle glaucoma patients compared with rates measured during cataract progression.

DESIGN: Retrospective cohort study.

METHODS: Consecutive open-angle glaucoma patients who underwent cataract surgery and who had ≥4 VFs and ≥3 years of follow-up before and after surgery were retrospectively reviewed. Mean deviation (MD) rate, visual field index (VFI) rate, pointwise linear regression (PLR), pointwise rate of change (PRC), and the Glaucoma Rate Index (GRI) were compared before and after cataract surgery.

RESULTS: A total of 134 eyes of 99 patients were included. Median (interquartile range) follow-up was 6.5 (4.7-8.1) and 5.3 (4.0-7.3) years before and after cataract surgery, respectively. All intraocular pressure (IOP) parameters (mean IOP, standard deviation of IOP, and peak IOP) significantly improved ($P < .001$) after cataract surgery. All VF indices indicated an accelerated VF decay rate after cataract surgery: MD rate (-0.18 ± 0.40 dB/year vs -0.40 ± 0.62 dB/year; $P < .001$), VFI rate ($-0.44\% \pm 1.09\%/year$ vs $-1.19\% \pm 1.85\%/year$; $P < .001$), GRI (-5.5 ± 10.8 vs -13.5 ± 21.5 ; $P < .001$), and PRC ($-0.62\% \pm 2.47\%/year$ before and $-1.35\% \pm 3.71\%/year$ after surgery; $P < .001$) and PLR (-0.20 ± 0.82 dB/year before and -0.42 ± 1.16 dB/year after surgery; $P < .001$) for all VF locations. Worse baseline MD and postoperative peak IOP were significantly associated with the postoperative VF decay rate and the change in the decay rate after cataract surgery.

CONCLUSION: Although all IOP parameters improved after cataract surgery, VFs continued to progress. Cataract surgery does not slow the apparent rate of glaucomatous VF decay as compared to rates measured during the progression of the cataract.

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Case 1:

69-year-old, Caucasian female referred for a cataract evaluation and opinion on her glaucoma. She states she is not taking her drop everyday because they burn and irritate her eyes. She states her vision seems blurry all the time.

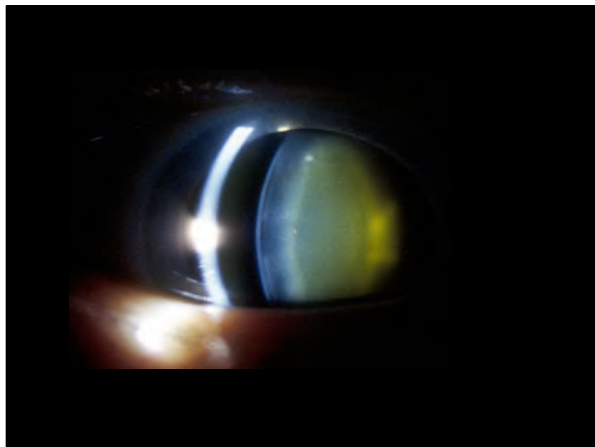
Ocular History

- POHX: Primary Open Angle Glaucoma OU
- FHx:
 - Father – glaucoma
- Previous Treatment Regimen: None
- Current Treatment Regimen:
 - Latanoprost qd OU
- IOP max
 - OD: 25 mm Hg
 - OS: 25mm Hg

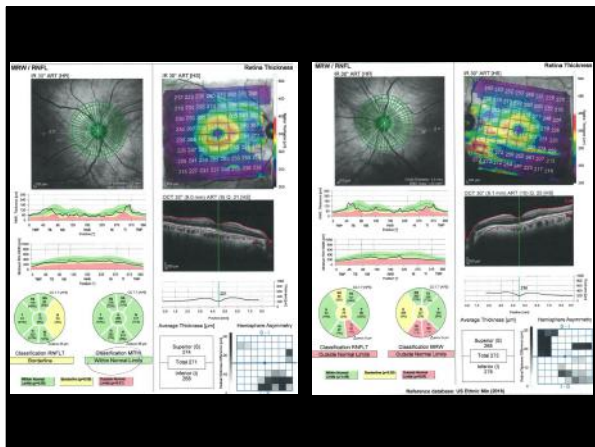
Medical History

- PMHX: Hyperlipidemia, Hypertension
- All Medications: Atorvastatin, Norvasc
- Allergies: NKDA

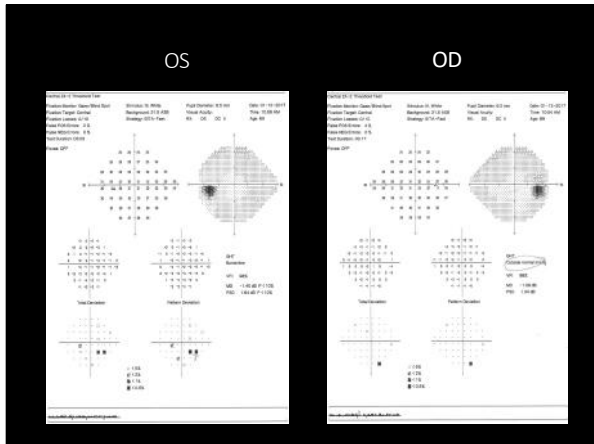
14



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16



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Treatment Considerations

- SLT OU
- Prostaglandin analogue qd OU
- Cataract extraction + TM/Schlemm Canal Stent
- Cataract extraction + XEN/Filtration Procedure

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Minimally or Micro Invasive Glaucoma Surgery (MIGS)

The figure shows two images related to Minimally Invasive Glaucoma Surgery (MIGS). The left image shows a surgical instrument, likely a micro-invasive glaucoma surgery (MIGS) device, with a red and gold tip. The right image shows an internal view of the eye during surgery, with a small white circle highlighting a specific area of interest.

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Schlemm's Canal	Type	Suprachoroidal	Type	Cilioablatives	Type
Stents	iStent	Stents	*Cypass	External	Micropulse
	iStent Inject		*iStent Supra	Internal	
	Hydrus		Subconjunctival	Type	
Dilation	OMNI	Stents	Xen		
	ABIC		*ImFocus	Micro	
Cutting	Kahook Dual Blade				
	OMNI/GATT				
Ablation	Trabectome				

20

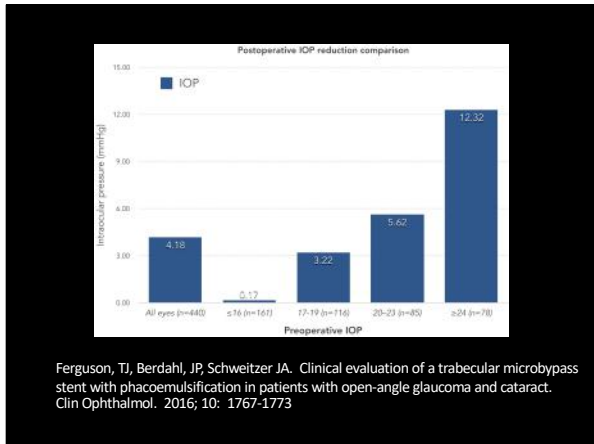
Ideal Patient Candidate

Trabecular Meshwork Bypass Stents and Schlemm Canal Microstent

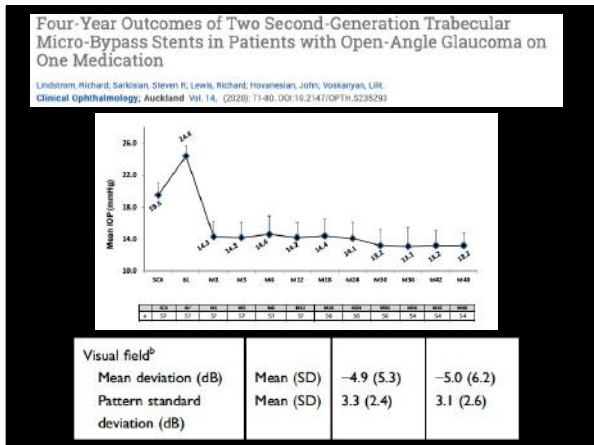
21

Trabecular Microbypass Stent (iStent Inject W)

22



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HORIZON Trial – 4 Year Update

	Stent + Cataract (n=969)	Cataract Only (n=187)
Baseline IOP (mm Hg) after washout	25.5 (+/- 3.0)	25.4 (+/-2.9)
48 months medication free	65%	41%
48 months mean IOP (mm Hg) unmedicated	16.7 (+/-3.1)	17.2 (+/-3.2)
48 months mean IOP (mm Hg)	16.9 (+/-3.3)	17.3 (+/-3.4)
1 preoperative med	52.6%	54%
2 to 4 preoperative med	47.4%	46%

5 Year Update – 66% patient's remain medication-free and 61% reduction in risk to need further surgery

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Aqueous Angiography Before and After Stenting

Alex Huang, MD, PhD

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Ideal Patient Candidate

QAT
Outside Normal Limits

VFI: 91%

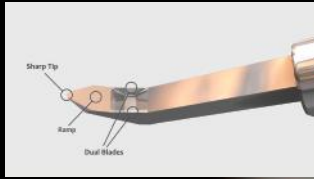
MD: -6.66 dB P < 0.05

PSD: 3.40 dB P < 0.05

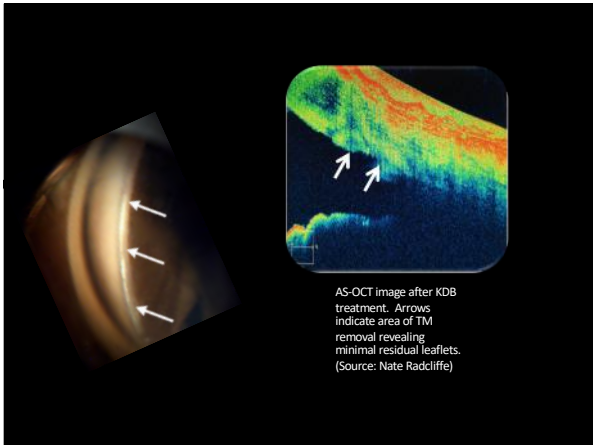
Excisional Goniotomy and Ab Interno Trabeculotomy + Visco canalostomy

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**Excisional Goniotomy
(Kahook Dual Blade)**



29



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Cataract Surgery plus Goniotomy 12-Month Outcomes

	1 Day	1 WK	1 Mo.	3 Mo.	6 Mo.	12 Mo.
% of pts > 20% IOP reduction from baseline	54.4%	57.8%	55.1%	67.4%	60.9%	57.7%
% of pts using ≥ 1 fewer medications from baseline	56.5%	64.4%	63.3%	60.5%	60.9%	63.5%

Patients (n=26) with baseline IOP ≤ 16.5 mmHg

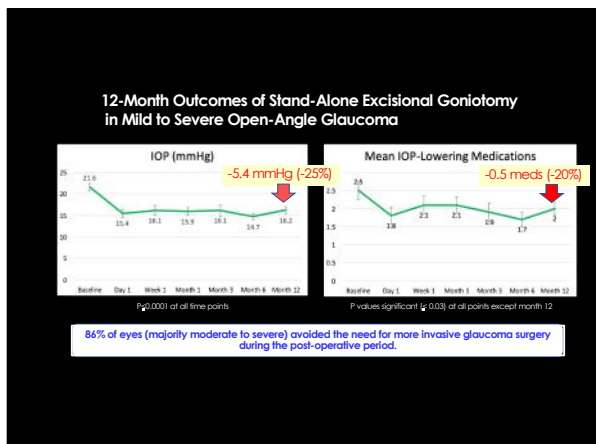
	12 Mo.
% of eyes ≥ 20% IOP reduction from baseline	15.4%
% of eyes using ≥ 1 fewer medications from baseline	84.6%

Patients (n=26) with baseline IOP > 16.5 mmHg

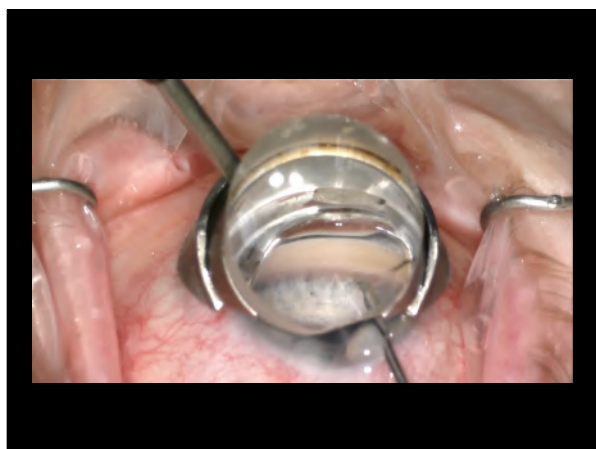
	12 Mo.
% of eyes ≥ 20% IOP reduction from baseline	100%
% of eyes using ≥ 1 fewer medications from baseline	42.3%

Dorling SK, Seibold LK, Radcliffe NW, Araf AA, Jmarnaz Román J, Luciano-Gomez G, Doolittle JK, Mansour F, Beidani JP. 12-Month Outcomes of Goniotomy Performed Using the Kahook Dual-Blade Combined with Cataract Surgery in Eyes with Medically Treated Glaucoma. *Adv Ther* 2018; 33: 1442-1447.

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Transluminal Viscoelastic Delivery **Trabeculotomy (ab interno)**

Control Eye
No Viscoelastification

Test Eye
VISCO260 Viscoelastification

- Treats all 3 points of resistance
- Stand-alone or combined with CE
- Titratable
- 7.3mmHg mean IOP reduction from 23.7mmHg mean medicated baseline
- Mean 12-month IOP of 15.7mmHg.

Sarkisian SR, Mathews, B, Ding K, Patel A, et al. 360 ab-interno trabeculotomy in refractory Primary open-angle glaucoma. Clin Ophthalmol. 2019;13:161-168.

35

Canaloplasty and Trabeculotomy with the OMNI System in Pseudophakic Patients with Open-Angle Glaucoma: The ROMEO Study

Group	pre-op	M 1	M 6	M 12
Group 1	~22	~16	~15	~14
Group 2	~15	~15	~14	~13

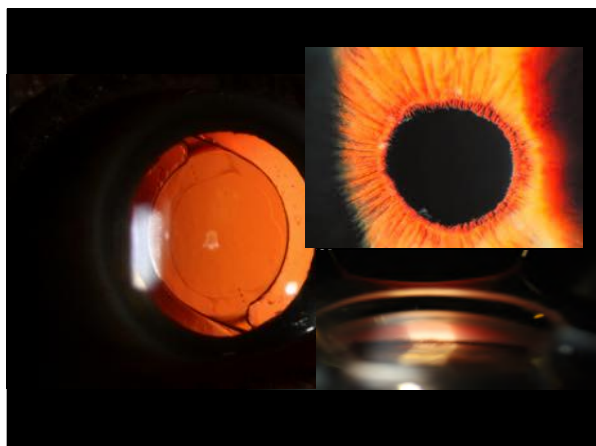
Statistical significance: $p < 0.0001$ for Group 1, $p < 0.0001$ for Group 2, and $p < 0.0001$ for Between-Group Comparison.

36

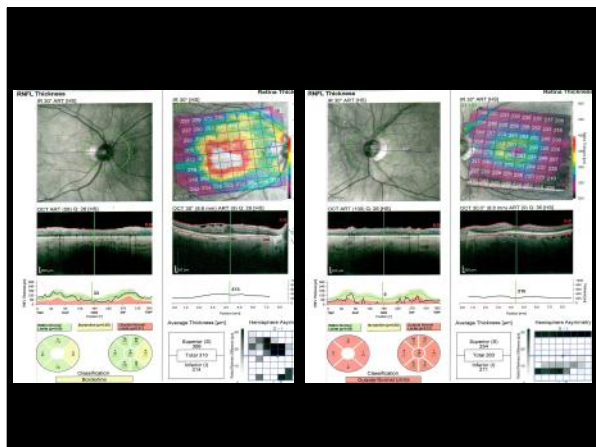
Endocyclophotocoagulation (ECP)

- ▶ **TREATS INFLOW**
- ▶ It uses a laser endoscope containing three fiber groupings:
 - a light source (illuminate)
 - an image guide (visualize)
 - optic laser (treat)
- ▶ Direct visualization
- ▶ Precise delivery to the ciliary processes
- ▶ no damage to the underlying ciliary body and surrounding tissue

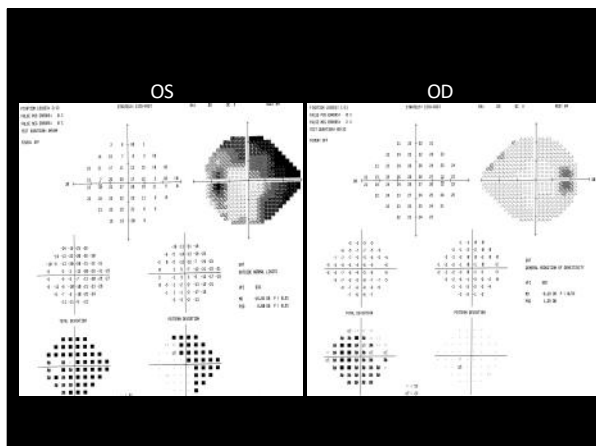
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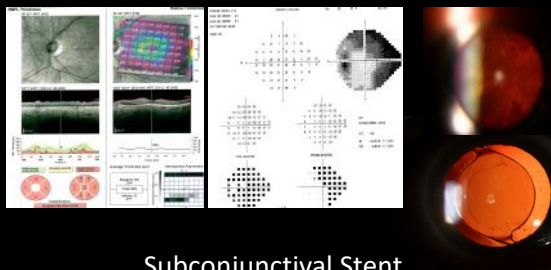


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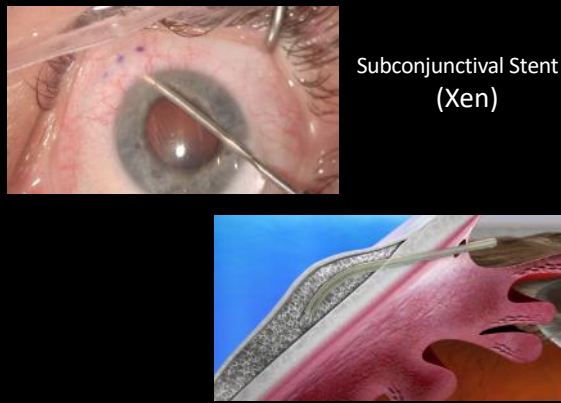
40

Ideal Patient Candidate



Subconjunctival Stent (XEN)

42



Subconjunctival Stent (Xen)

43

Xen 45 Gel Stent: US Pivotal Clinical Trial

	Baseline	12 month
Medicated IOP	25.1 (3.7)	15.9 (5.2)
Glaucoma Meds	3.5 (1.0)	1.7 (1.5)

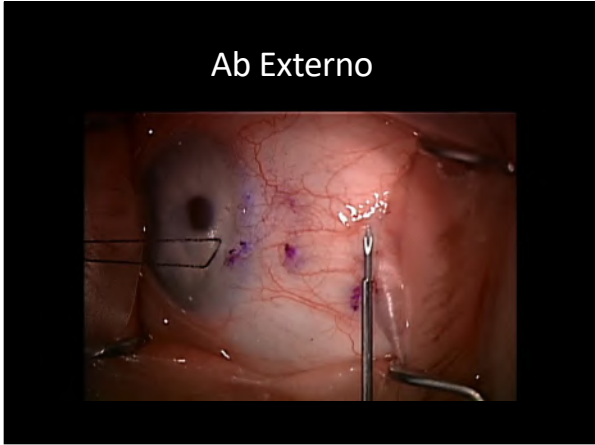
76.3% of patients reported a mean diurnal IOP reduction of $\geq 20\%$ from medicated baseline at 12 months

44

Postoperative Adverse Events

Hypotony (IOP < 6 mmHg at any time)	16 (24.6%)
Anterior chamber shallow with peripheral irido-corneal touch	1 (1.5%)
Anterior chamber fill	1 (1.5%)
Bleb Needling	21 (32.3%)

45



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Post-operative Considerations with MIGS

1. Stopping GLC Meds
2. IOP Spikes
3. Hyphema
4. Hypotony
5. Establish New Baselines

48

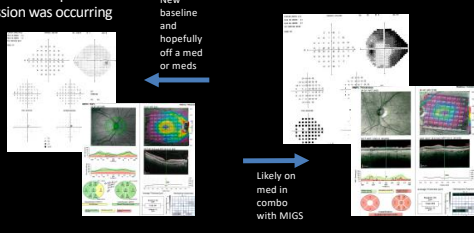
Stopping Glaucoma Medications

Severity of the Glaucoma

Preoperative IOP vs Postoperative IOP
IOP progression was occurring

New baseline and hopefully off a med or meds

Likely on med in combo with MIGS




49

PAS to Stents

US Pivotal iStent Inject Trial
1.8% @ 24 months

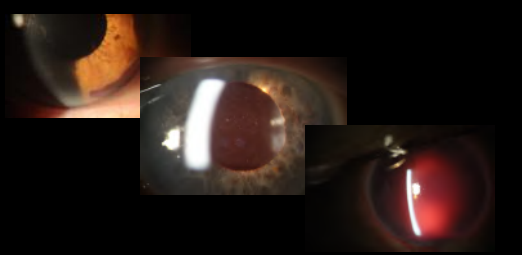
HORIZON Trial
13% @ 48 months

YAG laser considered to open stent

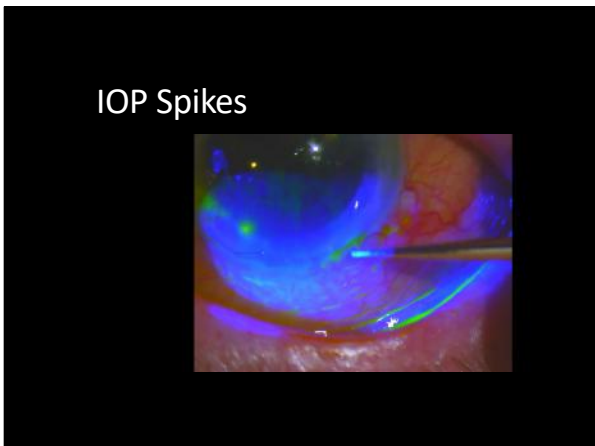


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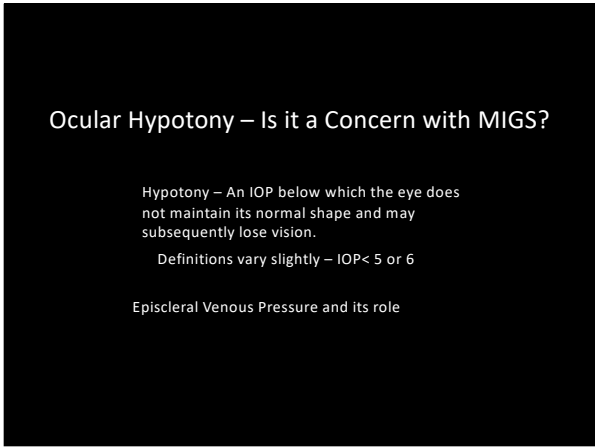
Hyphema



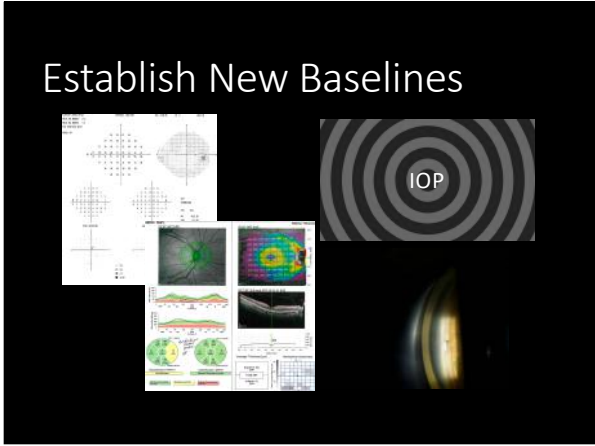
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In Conclusion...

- Glaucoma is both a medical and surgical disease
 - Key to success is collaboration
- Trends in treatment aim to balance effectiveness and safety
- MIGS procedures allow for interventional glaucoma

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Thank You!

justin.schweitzer@vancethompsonvision.com

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