Cover Slide

SPECIALTY EYE INSTITUTE

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Case for Surgical Intervention of Primary Open Angle Glaucoma

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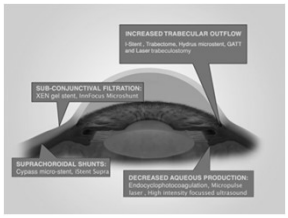
Outline

- Case Report
- MIGs Procedures
- Anatomically separated:
- Trabecular Meshwork Bypass
  - Trabectome
  - iStent and iStent Inject
  - Hydrus Stent
  - Gonioscopy assisted transluminal trabeculotomy
- Suprachoroidal shunts
  - Cypass
- Subconjunctival filtration
  - Xengel



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Case Report

- 64 y/o Caucasian female
- Adverse reaction to past drops: Cosopt, Combigan, Travatan Z, Lumigan, Rhopressa
- Currently using: Timolol, Vyzulta
- C/D: 0.85/0.85
- VDD: 1.69 mm / 1.43 mm
- Pachymetry: 598 / 615
- IOP: 14/13
- Add in Visual fields, OCT – get better color photos

- **Dx: Primary open angle glaucoma – Moderate Stage**

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What to do when drops are not bringing the IOP to target range?

- Different drops?
- Lasers?
- Trabeculectomy?
- Consider MIGs surgery!

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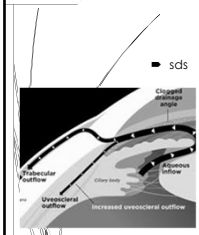
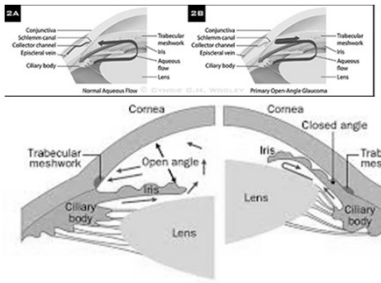
Uveoscleral vs. Corneoscleral

- sds





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MIGs

- FDA definition: "an ab interno microincisional approach, minimal trauma to and disruption of normal anatomy and physiology with devices that exhibit a high level of biocompatibility, demonstrable intraocular pressure (IOP) lowering, extremely high safety profile, and rapid recovery."
- Indication:
  - Patients with mild-moderate glaucoma
  - Primary open-angle glaucoma, pseudoexfoliation glaucoma, or pigmentary dispersion glaucoma
- Glaucoma is uncontrolled with maximum pharmacologic treatment or **there are barriers** preventing adequate medication dosing
- Patients with **clinically significant cataract**, as surgery may be performed simultaneously.

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MIGS - Contraindications

- Angle-closure glaucoma
- Secondary glaucoma moderate-advanced glaucoma
- Previous glaucoma surgery
- Severely uncontrolled IOP

- Other considerations:
- Previous refractive procedures
- Monocular patients

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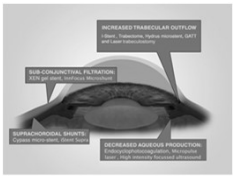
Minimally Invasive Glaucoma Surgery

- There are several options, but your patient's specific situation warrants a closer look on which to consider.
- Anatomically seperated:
- Trabecular Meshwork Bypass
  - Trabectome
  - **iStent and iStent Inject**
  - **Hydrus Stent**
  - Gonioscopy assisted transluminal trabeculotomy
- Suprachoroidal shunts
  - **Cypass**
- Subconjunctival filtration
  - **Xengel**



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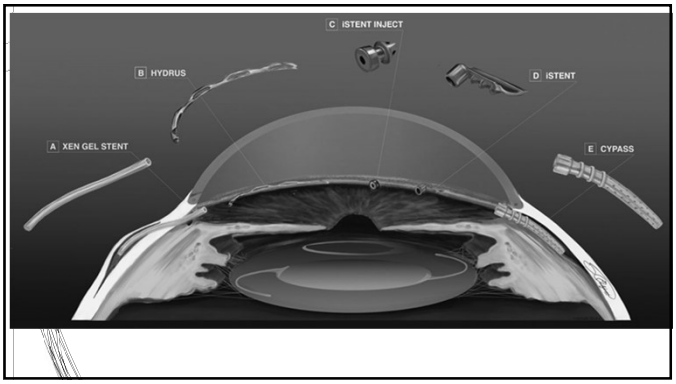

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Trabectome

- Stand-alone procedure
- May remove from talk.

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Trabectome

- **POSTOPERATIVE CARE.** This varies by surgeon. Dr. Francis discharges his patients on the same day, with a light dressing or shield applied to the operative eye. His postoperative routine includes the following:
- Topical antibiotic drops are given four times daily for seven days.
- Steroid drops, four times daily, are tapered over eight weeks.
- Pilocarpine (1 or 2 percent) is used in the operative eye two to four times daily, tapered over two to eight weeks. Pilocarpine is intended to minimize formation of peripheral anterior synechiae and to help with short-term IOP reduction.
- All preoperative glaucoma medications may be restarted immediately and tapered the first postoperative day, depending on IOP.

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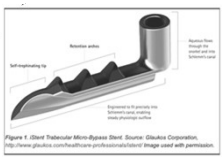
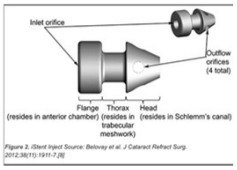
iStent and iStent Inject

- Mild to moderate glaucoma
- Stand-alone





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iStent/iStent Inject

- **POSTOPERATIVE CARE:** takes roughly 6 weeks to reach new steady-state baseline pressure

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Hydrus

- Mechanism

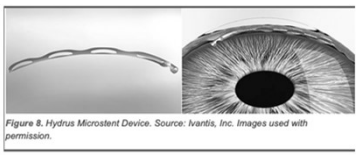

Figure 8. Hydrus Microstent Device. Source: Ivantis, Inc. Images used with permission.

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Hydrus Studies

- Hydrus I
- Hydrus II
- Hyrdus III
- Hydrus IV

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Gonioscopy assisted transluminal trabeculotomy

- https://www.aao.org/annual-meeting-video/gonioscopyassisted-transluminal-trabeculotomy-2

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Cypass

- No longer in production, but may still be in your patient's eye!
- During post-op: Specular endothelial microscopy is indicated.

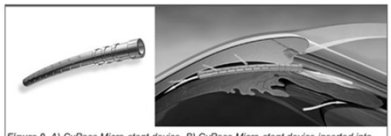

Figure 9. A) CyPass Micro-stent device. B) CyPass Micro-stent device inserted into suprachoroidal space. Source: Alcon. Images used with permission

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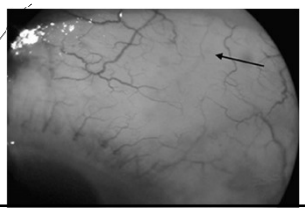
Xengel

- Mechanism: Creates an aqueous humor outflow path from the anterior chamber to the subconjunctival space.



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MIGS Effectivness

Relative effectiveness of MIGS Procedures

MIGS Procedure	Decrease in IOP	Decrease in Medications	Study Type
iStent Micro-Bypass* [7]	8.4 mmHg @ 2 years	0.8 @ 2 years	Randomized controlled trial
iStent Inject [9]	8.1 mmHg @ 1 year	Not available	Prospective, randomized trial
Gonioscopy-assisted trans-luminal trabeculotomy (GATT)* [10]	8.4 mmHg @ 1 year	1.9 @ 1 year	Retrospective review
Trabectome* [15]	6.2 mmHg @ 2 years	0.76 @ 2 years	Meta-analysis
TRAB 360 Trabeculotomy [16]	6.3 mmHg @ 131.5 days**	0.9 @ 131.5 days**	Retrospective review
Ab interno canaloplasty* [18]	4.0 mmHg @ 1 year	1.0 @ 1 year	Case-series review
Hydrus Microstent* [20]	5.4 mmHg @ 2 years	1.5 @ 2 years	Randomized controlled trial
CyPass Micro-Stent* [22]	7.4 mmHg @ 2 years	1.2 @ 2 years	Randomized controlled trial
iStent Supra [23,24]	7.8 mmHg @ 2 years	Not available	Prospective, single arm clinical trial
XEN Glaucoma Treatment System [27]	9.2 mmHg @ 1 year	1.8 @ 1 year	Prospective, single arm clinical trial
InnFocus MicroShunt* [31]	16.2 mmHg @ 3 years	1.6 @ 3 years	Prospective, single arm clinical trial
Endocyclophotocoagulation*	2.1 mmHg @	1.1 @ 2 years	Prospective case

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- The life of a glaucoma patient:
- Speak about "Pre-MIGS" time when adding more and more drops until we got to severe glaucoma (and subsequent trabeculectomy was indicated).
- Talk about "paradigm shift" with MIGS being standard of care.

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References

- https://www.aaojournal.org/article/S0161-6420(15)00607-7/fulltext
- https://www.glaucomaphysician.net/issues/2019/march-2019/what-you-need-to-know-about-the-hydrus-microstent

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