

المؤتمر السنوي الدولي للجمعية المصرية  
INTERNATIONAL CONGRESS OF THE

EGYPTIAN OPHTHALMOLOGICAL SOCIETY

**EOS 2023**

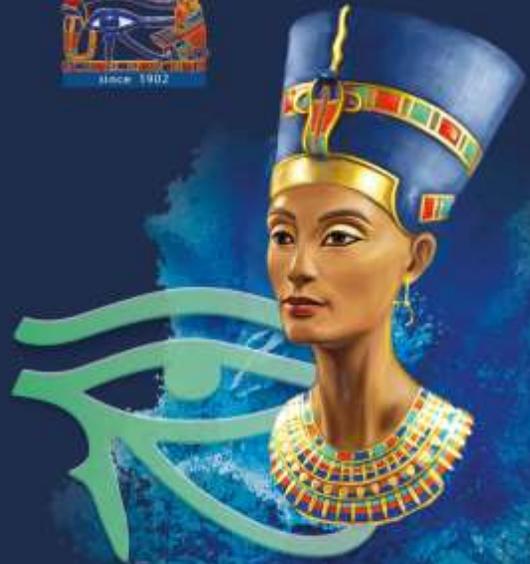


## Filtering MIGS

### Evolution Of Bleb Surgery

**Amr Samir, FRCS**

**Glaucoma Service  
Magrabi Hospitals and Centers  
Al Mashreq Eye Center**



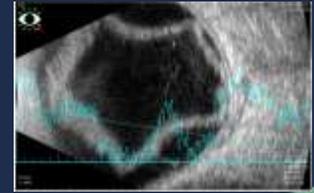
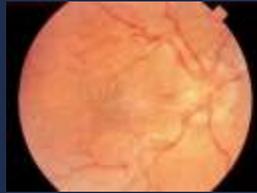
## History of Filtering Surgery:

- Filtering Surgery remains the gold standard procedure for patients with an advanced or rapidly progressing disease and for those patients who need very low intraocular pressures.
- Cairns JE initially described trabeculectomy in 1968.
- Modified by Watson in 1970.
- Moorfield's safe surgery system, developed by Peng Khaw and colleagues in 2005.



## Complications of Filtering Surgery:

- Hypotony
- Hypotonic maculopathy
- Choroidal detachment
- Suprachoroidal hemorrhage
- Bleb-related complications
- Endophthalmitis



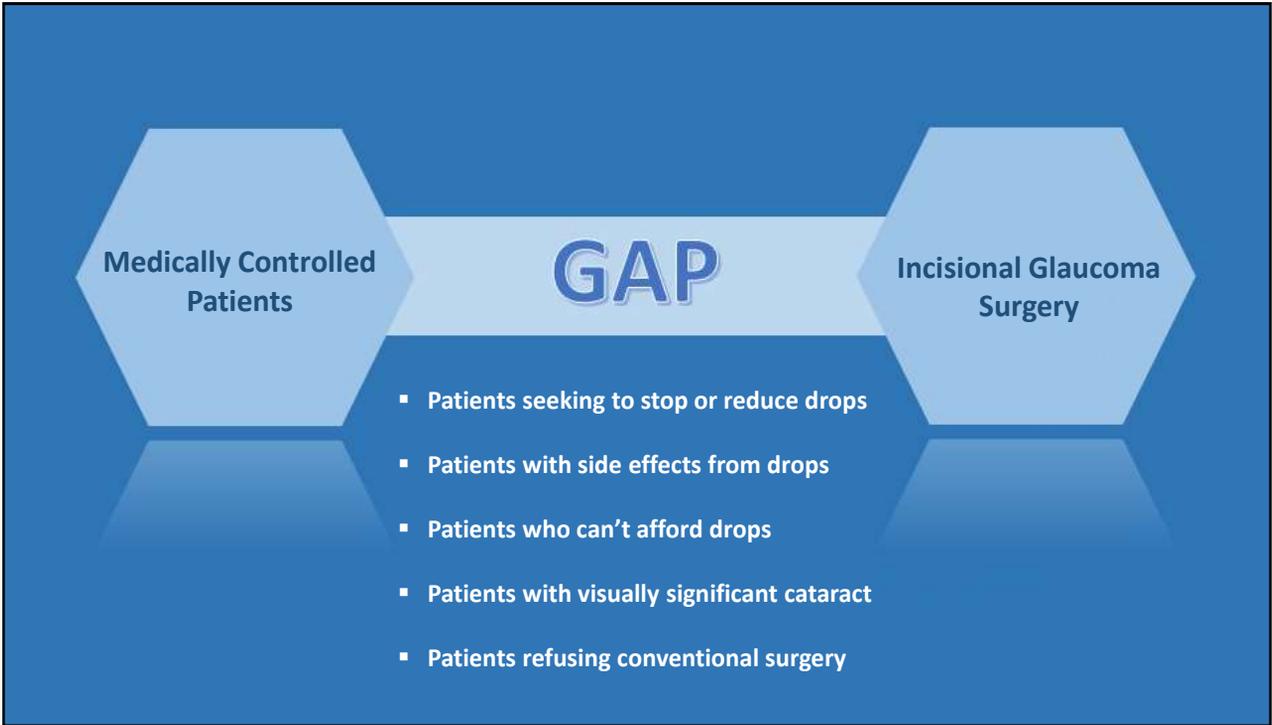
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Medically Controlled  
Patients

GAP

Incisional Glaucoma  
Surgery



## The Evolution of MIGS:

- In 2009, Ike Ahmed coined the term (MIGS)

Schlemm's canal	Suprachoroidal space	Subconjunctival space	Ciliary body
<i>Trabecular bypass</i>	<i>Ab interno</i>	<i>Ab interno</i>	<i>Ab interno</i>
iStent	CyPass <i>(withdrawn)</i>	XEN Gel Stent	Endocyclo- photocoagulation
iStent inject	iStent Supra <i>(not commercially available)</i>	<i>Ab externo</i>	<i>Ab externo</i>
High frequency deep sclerotomy		Presertlo	Transscleral photocoagulation / Micropulse
<i>Schlemm's dilation</i>			
Ab interno canaloplasty			
Hydrus			
<i>Trabeculotomy</i>			
GATT			
Trabeculome			
Kahook Dual Blade			
Excimer laser trabeculotomy			

- **Minimal tissue disruption**
- **IOP lowering effect**
- **High safety profile**
- **Rapid recovery**



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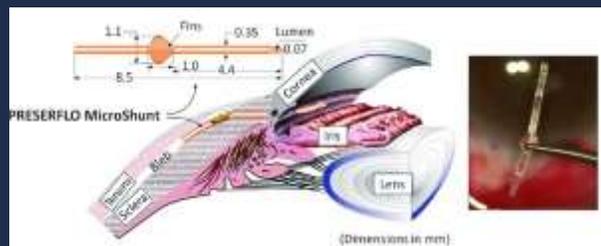


# Filtering (Bleb Forming) MIGS:

## XEN Gel Stent



## PreserFlo MicroShunt



## XEN Gel Stent:

- FDA approved in 2016, the Xen gel stent is the first ab interno procedure which bypasses the diseased trabecular meshwork to drain aqueous fluid from the anterior chamber to a subconjunctival bleb



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## XEN Gel Stent:

- 6-mm hydrophilic flexible tube.
- 45-micron lumen.
- Made of porcine collagen-derived gelatin cross-linked with glutaraldehyde.
- Hydrates within 1-2 minutes of contact with aqueous.



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## XEN Gel Stent:

- Ab interno procedure
- Minimal tissue disruption
- High safety profile
- Rapid recovery
- **Bleb forming (more IOP lowering – amenable to revision)**



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### Xen Glaucoma Implant Combined With Phaco

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Al Mashrek Eye Center

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## XEN Gel Stent:

The efficacy of XEN gel stent implantation in glaucoma: a systematic review and meta-analysis

[Xiang Yang](#)<sup>1</sup>, [Yang Zhao](#)<sup>1</sup>, [Yu Zhong](#)<sup>1,2</sup> and [Xuanchu Duan](#)<sup>2,1,2</sup>

XEN<sup>®</sup> Gel Stent: A Comprehensive Review on Its Use as a Treatment Option for Refractory Glaucoma

[Antonio M. Fias](#)<sup>1</sup>, [Georges M. Durr](#)<sup>2,3</sup>, [Paola Marolo](#)<sup>1</sup>, [Lorenza Malinverni](#)<sup>1</sup>, [Mario A. Economou](#)<sup>4</sup> and [Ike Atnefy](#)<sup>4</sup>

Two-year outcomes of minimally invasive XEN Gel Stent implantation in primary open-angle and pseudoexfoliation glaucoma

[Teresa Rauchegger](#), [Reinhard Angermann](#), [Peter Willet](#), [Eduard Schmid](#), [Barbara Teuchner](#)

The Outcomes of XEN Gel Stent Implantation: A Systematic Review and Meta-Analysis

[Suan-Yu Chen](#)<sup>1</sup>, [Zhenan Long](#)<sup>2</sup>, [Wang-Yang](#)<sup>3</sup>, [Yun-Li](#)<sup>4</sup>, [Tao-Ma](#)<sup>5</sup>, [Mengyang Li](#)<sup>6</sup> and [Huipian Wu](#)<sup>7</sup>

### Conclusion:

Xen Gel Stent is a safe and effective procedure to lower IOP in primary and secondary OAG. It offers a more significant reduction in IOP than other *ab-interno* MIGS procedure, with a higher safety profile compared to Incisional glaucoma surgery.



## PreserFlo<sup>®</sup> MicroShunt



## PreserFlo<sup>®</sup> MicroShunt:

- Received CE mark in 2012.
- The Preserflo is an AB externo procedure, it drains aqueous from the AC to a fornix-based bleb, bypassing the trabecular meshwork.



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## PreserFlo<sup>®</sup> MicroShunt:

- The device has a total length of 8.5 mm, which is divided by a 1mm “fin” into distal (3 mm) and proximal (4.5 mm) segments. The external lumen is 350um and the internal lumen is 70um with a beveled tip at the proximal end.



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## PreserFlo<sup>®</sup> MicroShunt:

- **Ab externo** procedure
- Minimal tissue disruption
- High safety profile
- Rapid recovery
- **Bleb forming** (more IOP lowering – amenable to revision)



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PreserFlo MicroShunt

Amr Samir  
Glaucoma Service

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# PreserFlo® MicroShunt:

## Long-term Results of the PRESERFLO MicroShunt in Patients With Primary Open-angle Glaucoma From a Single-center Nonrandomized Study

Battle, Juan F. MD; Corona, Adalgisa MD; Albuquerque, Rachel MD

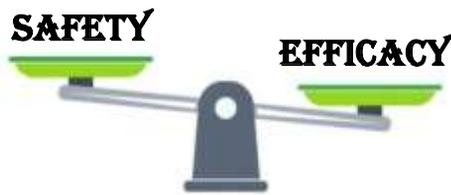
### Conclusions:

In this extension study, sustained reductions in mean IOP and medications were observed up to 5 years post-MicroShunt implantation. There were no reports of long-term sight-threatening AEs and a low rate of postoperative interventions.

### One-year surgical outcomes of the PreserFlo MicroShunt in glaucoma: a multicentre analysis

Alexander Tanner<sup>1, 2</sup>, Fadi Hachem<sup>3</sup>, Julia Fajardo-Sanchez<sup>1, 2</sup>, Ethan Nguyen<sup>2</sup>, Kai Xin Theng<sup>1, 2</sup>, Sarah Ali-Moyo<sup>2</sup>, Nicole Petit<sup>1</sup>, Mohammed Abu-Bakr<sup>2</sup>, Avinash Kulkarni<sup>2</sup>, Sameer Trikha<sup>2</sup>, Gerakimos Lascaris<sup>1, 2</sup>, Miles Parmar<sup>2</sup>, Dheeta Kakani<sup>2</sup>, Anthony J King<sup>4</sup>, Pavi Agrawal<sup>4</sup>, Richard Steat<sup>4</sup>, Konstantinos Giannoulidis<sup>4</sup>, Ieri Rodrigues<sup>2</sup>, Sourabh Goyal<sup>2</sup>, Piro G Hys<sup>1</sup>, Sheng Lim<sup>1, 2</sup>, Cynthia Yu-Wai-Man<sup>1, 2</sup>

**Conclusion** The PreserFlo MicroShunt with MMC 0.4 mg/mL showed an overall success rate of 68.3% at 1 year, and led to significant IOP and medication reduction with a low rate of adverse effects.



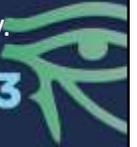
**Minimally Invasive Bleb Surgery (MIBS)  
Combine both safety of MIGS  
and efficacy of Incisional Surgery**



## Summary:

- None of our surgeries last forever.
- Think ahead of the disease and plan for the next step.
- No need to master all MIGS, just master one or two and add them to the arsenal .
- Evolution of glaucoma surgery gives more options for patients, and narrows the Gap between medical ttt and conventional glaucoma surgery.

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# Thank You

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