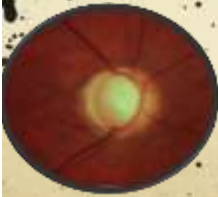


COMBINED PHACOEMULSIFICATION AND  
GLAUCOMA DRAINAGE IMPLANT SURGERY  
,INDICATIONS AND TECHNIQUE.

DR.YASSER ALY HAMED, MD,FRCS  
GLAUCOMA CONSULTANT



No financial disclosure



## ★ DEFINITION?

- *Glaucoma can be appropriately defined as:*
  - A group of pathological disorders
  - With different pathophysiological mechanisms of action
  - Causing ganglion cell damage and specific type of optic neuropathy, characterized by
  - A **specific pattern**(s) of optic disc and visual field changes
  - And is partly related to a relatively high intraocular pressure

## GLAUCOMA RISK FACTORS

- **Good evidence:**
  - **Glaucoma damage in the fellow eye**
  - **Age**
  - **Black race**
  - **Positive family history**
  - **High IOP**
  - **Myopia**
  - **Pseudoexfoliation , PD**
- **Fair evidence**
  - **Large C/D ratio – DM, - Disc hemorrhage**
- **Weak evidence**
  - **Peripapillary atrophy, migraine, hypothyroidism, sleep apnea, autoimmune disease, nocturnal hypotension**

## Refractory glaucoma

- **was defined as glaucoma associated with a poor surgical prognosis after trabeculectomy , which remained uncontrolled despite previous filtration surgery or laser treatment or under maximum tolerated medical treatment.**
- **Glaucoma shunt devices are typically reserved for refractory glaucoma.**

## Shunt Devices:

- There are a variety of different types of drainage devices for management of difficult glaucoma cases.
- However, the only shunts with proven long-term efficacy are those that drain the aqueous externally to bleb under the conjunctiva.

## Mechanism of Shunt Devices

- Depend on tube to shunt A. H. from A.C. or vitreous to an extraocular fluid reservoir through formation of fibrous capsule around a synthetic plate.
- Fluid diffuse **passive diffusion** through capsule and absorbed by orbital, episcleral blood vessels and lymphatic tissues.

## Types:

- **Non valved implants:**

- Molteno
- Schocket
- Baerveldt
- Ex-Press

1976

Molteno

1992

Gorge Baerveldt



- **Valved implants:**

- Krupin
- Hood
- White pump
- Ahmed valve



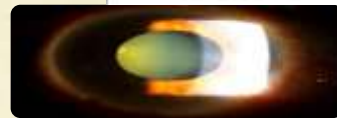
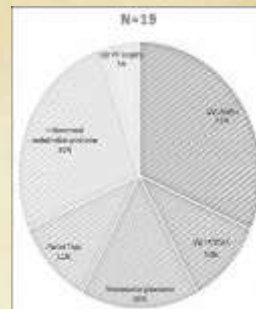
- **Suprachoroidal :**

- Micro-gold shunt
- Micro-stent



## Indications:

- NVG glaucoma
- Glaucoma with previous failed surgery.
- Aphakic and pseudophakic glaucoma
- Congenital glaucoma
- ICE syndrome
- Uveitic glaucoma
- Traumatic glaucoma
- Glaucoma post PKP
- Glaucoma post viteroretinal surgery.



## ***The surgical decision depends on:***

1. The **stage** of glaucoma .
2. The **rate** of deterioration of the disease).
3. **Life expectancy** of the patient.
4. **Presence of risk factors:** IOP, age, sex, race, F.H., myopia, corneal thickness, HTN, D.M, ...
5. **Status of the other eye**
6. **Compliance** for regular follow-up.
7. **Response to previous** lines of therapy.
8. **Systemic** workup of the patient and systemic medications.
9. **The inconveniences** of different lines of interventions.
10. **The financial impact** of treatment on the patient and the community.

## **NEOVASCULAR GLAUCOMA**

### **○ Conditions associated with iris neovascularization (NVI)**

- Proliferative diabetic retinopathy
- Central & branch retinal vein occlusion
- Central retinal artery occlusion
- Other retinal disorders
- Other ocular disorders
- Ocular surgery & radiation
- Systemic diseases
- Neoplastic diseases



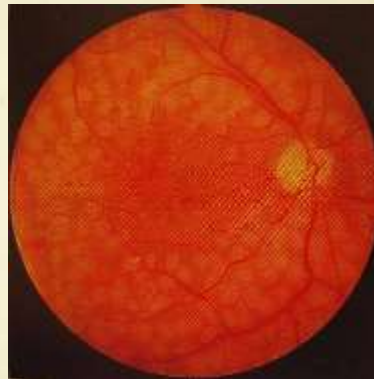
## NEOVASCULAR GLAUCOMA

### The IOP

- Usually high and not properly controlled by medications
- May be normal or low in NVG due to chronic retinal detachment or carotid artery occlusive disease
- In CAOD, IOP may be elevated after endarterectomy or bypass surgery

## NEOVASCULAR GLAUCOMA

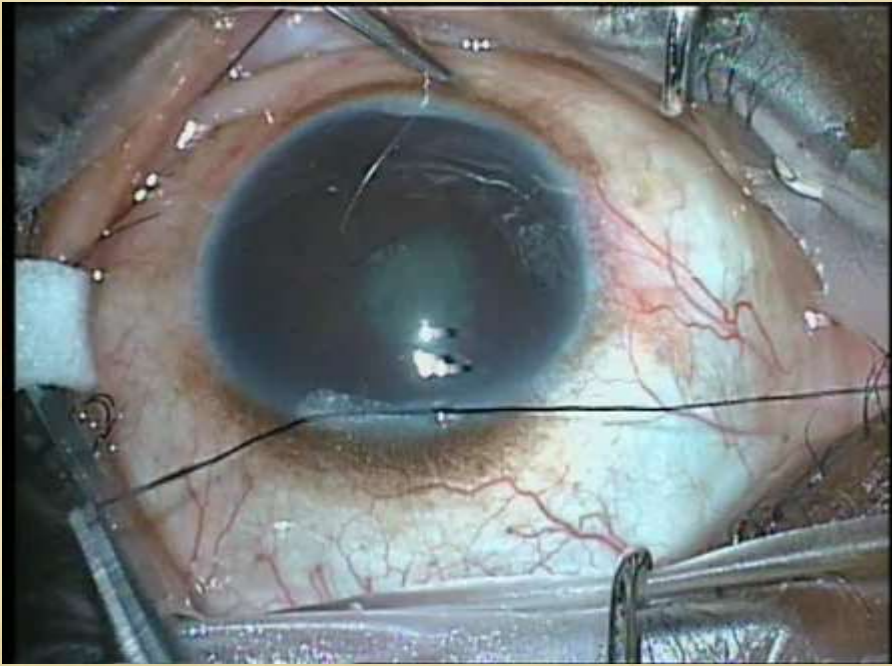
- Treatment of NVI:
  - Pan retinal photocoagulation
  - Intravitreal AVGF



## Neovascular Glaucoma Management:

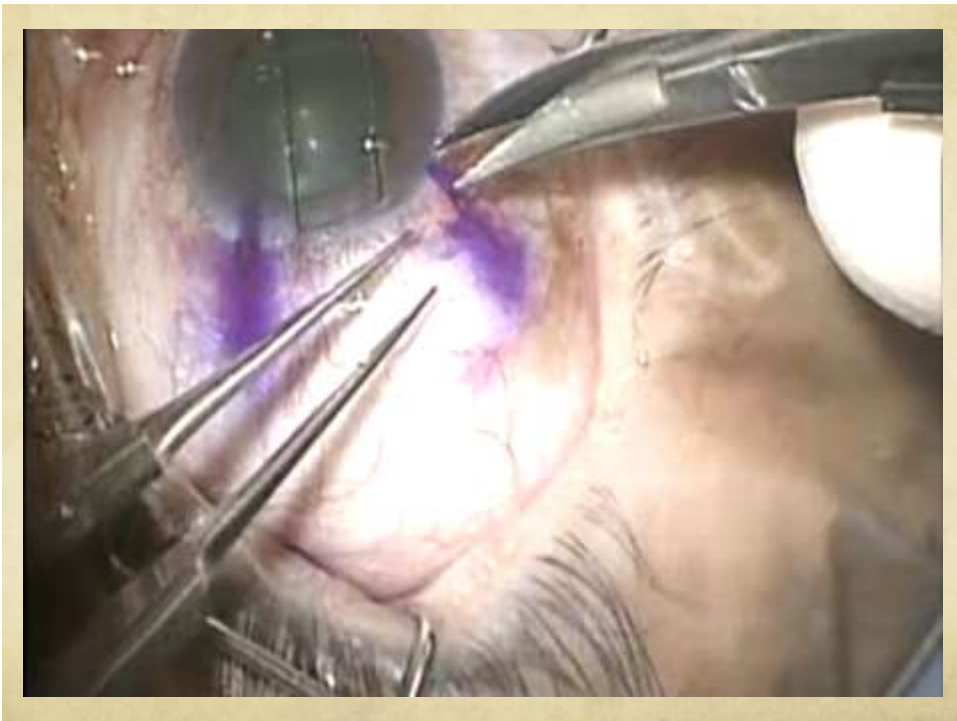
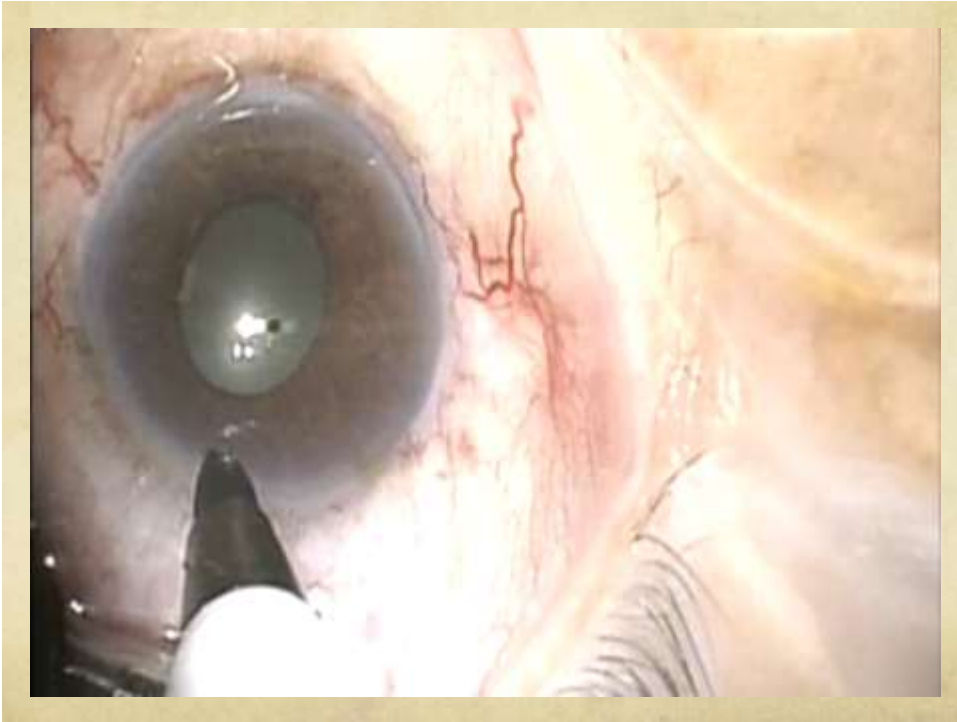
- Medical therapy:
  - Avoid miotics, prostaglandins (?)
  - Steroids & cycloplegics are helpful
- Filtering surgery: after regression of NVI
- Aqueous shunting surgery: primary treatment of **choice**
- Transscleral cyclophotocoagulation
- End-stage treatment: Alcohol injection, Evisceration

- **Coexistence of cataract and glaucoma causing progressive visual field loss , reduce the visual acuity and narrowing the drainage angle .**
- **Conjunctival scarring makes dissection difficult and increase the risk of conjunctival tear and buttonhole .**
- **Also long use of miotics makes the pupil difficult to dilate and difficult cataract surgery.**



Combined cataract and /aqueous shunt devices in complex cases in which you think trabeculectomy will fail.





## Conclusion:

- **Glaucoma** is a chronic ,complex progressive disease.
- Diagnosis needs correlations of different risk factors
- Phacoemulsification with shunt devices implantation are associated with a reasonable success rate in refractory glaucoma cases and complicated cataract provides good visual rehabilitation and control of IOP.
- Still needs long follow up and different complex cases.

