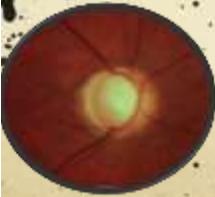


COMBINED PHACOEMULSIFICATION AND
GLAUCOMA DRAINAGE IMPLANT SURGERY
,INDICATIONS AND TECHNIQUE.

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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:**

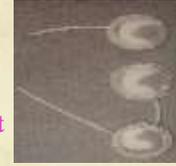
- Molteno
- Schocket
- Baerveldt
- Ex-Press

1976

Molteno

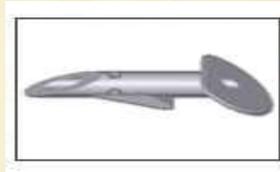
1992

Gorge Baerveldt



- **Valved implants:**

- Krupin
- Hood
- White pump
- Ahmed valve



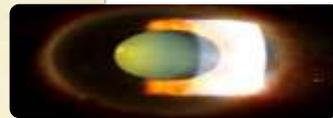
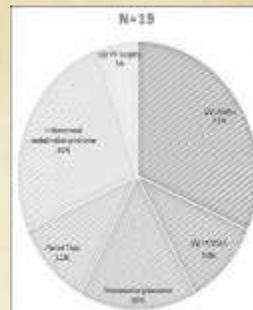
- **Suprachoroidal :**

- 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.



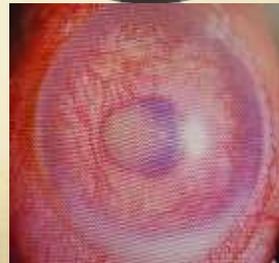
The surgical decision depends on:

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



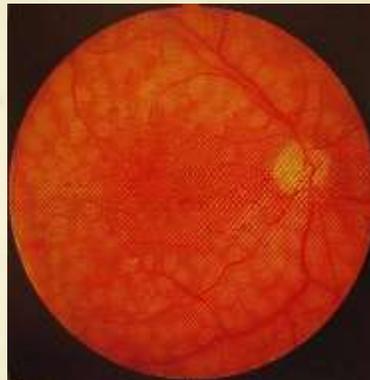
NEOVASCULAR GLAUCOMA

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

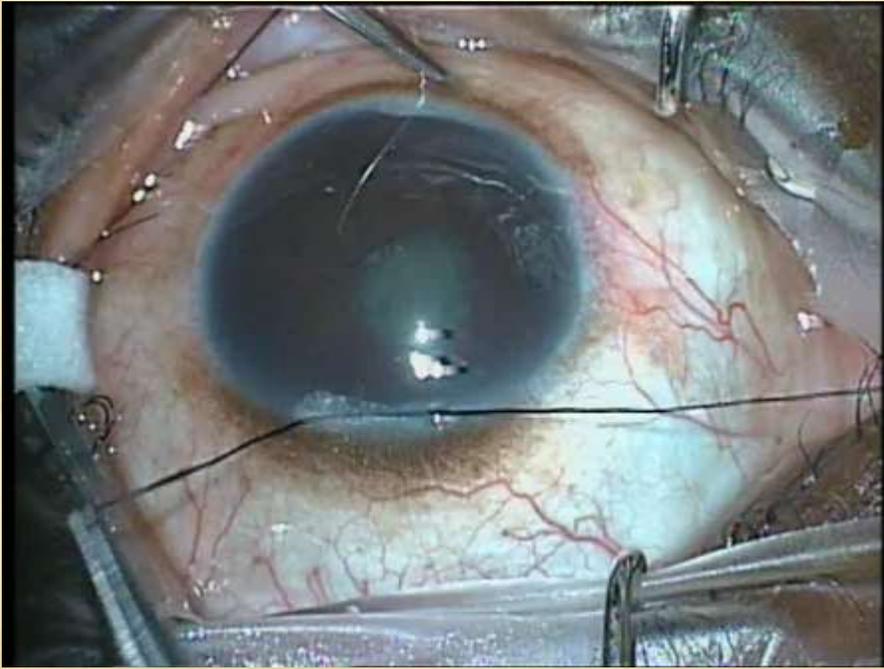
- Treatment of NVI:
 - Pan retinal photocoagulation
 - Intravitreal AVGF



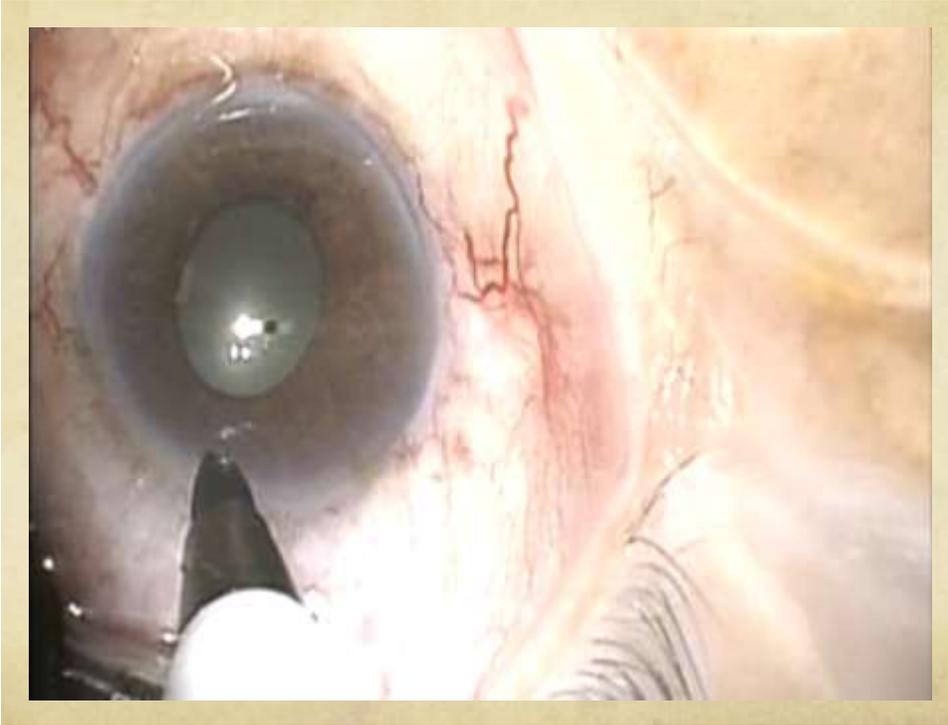
Neovascular Glaucoma Management:

- 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.

