

## Definition

- Hypotony is usually defined as an intraocular pressure (IOP) of 5 mm Hg or less. (CCT adjusted).

## pathogenesis

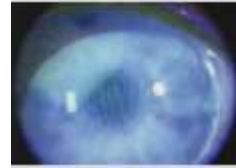
- Inflammation plays a key role in the evolution of hypotony, It impairs ciliary body aqueous production, hence the role of steroids.
- Hypotony itself seems to potentiate breakdown of the blood-aqueous barrier, making breaking the cycle difficult.
- This cycle is often perpetuated once choroidal effusions develop.

## pathogenesis

- Choroidal fluid is believed to accumulate in its potential space as a result of a relative increase in uveoscleral outflow and the lack of sufficient IOP to maintain closure of the space.
- If an anterior ring of choroidal fluid rotates the ciliary body forward, malposition or detachment could contribute to decreased aqueous production.

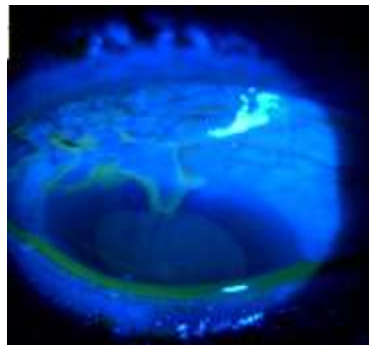
## Signs

- Low intraocular pressure ( $\leq 5$  mm Hg) after adjusting for extremely thin or thick corneal pachymetry
- Shallow/ flat anterior chamber, Corneal edema and decompensation, especially in areas of corneal-iris touch



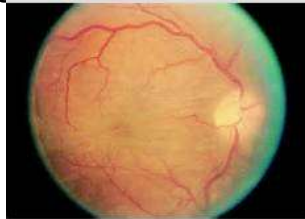
## Signs

- Synechiae formation
- Corneal astigmatism
- wound leak



## Signs

- Accelerated cataract formation
- Hypotony maculopathy. Young patients with myopia may be more predisposed to hypotony maculopathy following trabeculectomy. Fannin Ophthalmology 2003
- macular thickening and folds seen on examination or optical coherence tomography (OCT) of the retina
- Vascular engorgement and tortuosity.
- Optic disc swelling



## Signs

- Large bleb following trabeculectomy or Aqueous shunt.
- Hyperopic shift/reduced axial length.
- Inflammatory cells and flare in the anterior chamber.
- Ciliochoroidal detachment, either serous or hemorrhagic, Intraocular pressure can be normal, low, or elevated; as a rule, low IOP accompanies serous detachments, and high IOP accompanies hemorrhages.

## Causes of Hypotony post glaucoma surgery

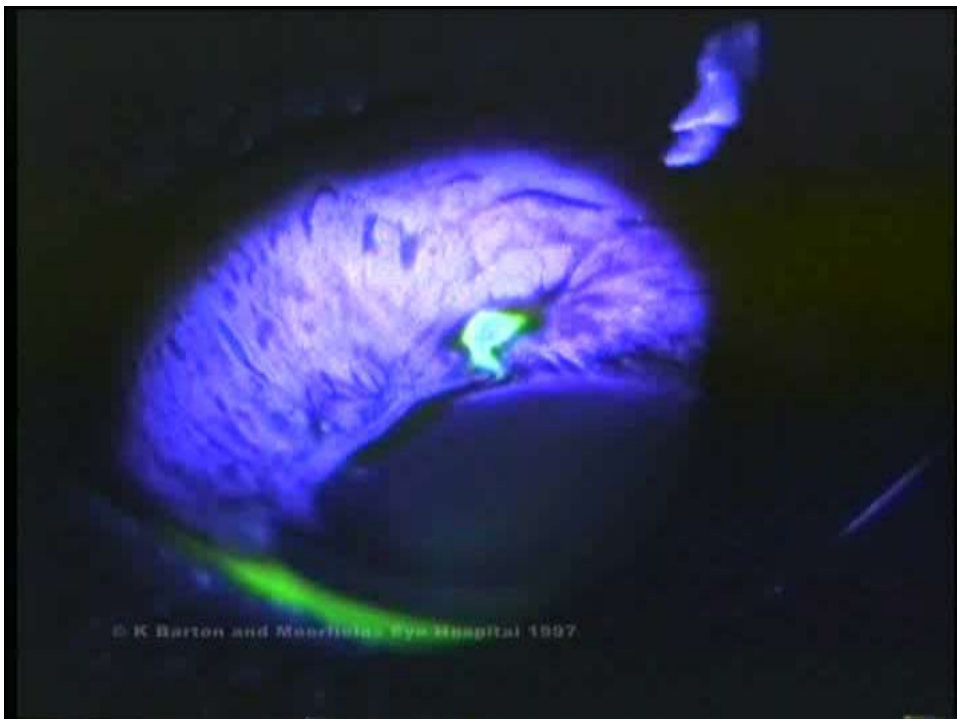
- Traby: Wound leak, Overfiltering
- Cyclodiode Photocoagulation of the ciliary body: Atrophia Bulbi.
- Shunt implant: overdrainage, AC entry leak.
- MIGS:??

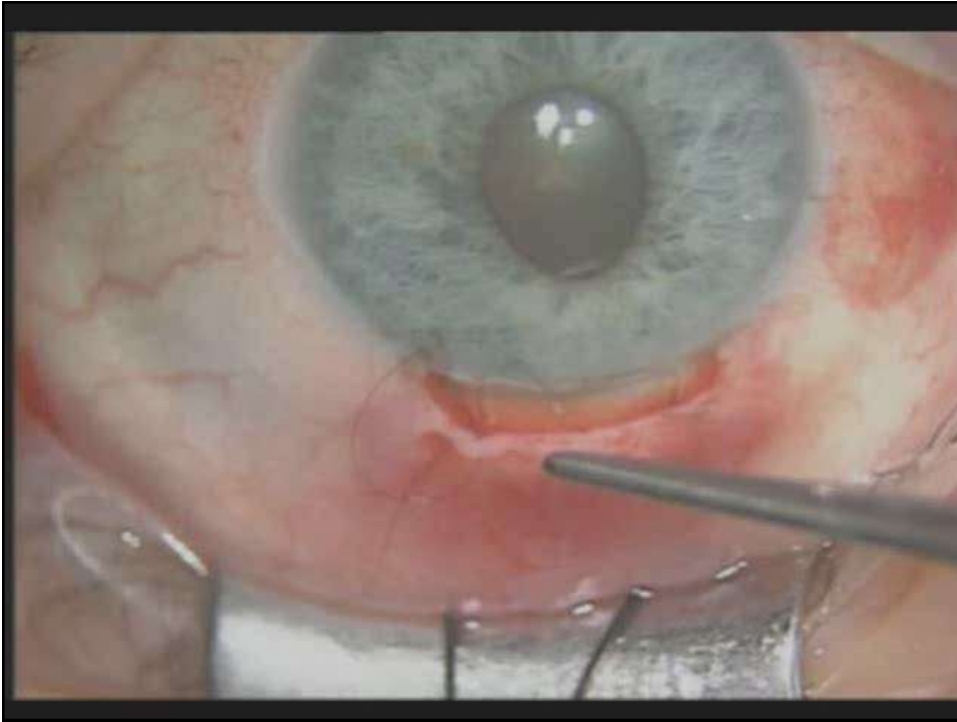
## Traby: Wound leak

- Small wound leaks with a well-formed anterior chamber can be conservatively managed with a regular or large diameter bandage contact lens with prophylactic topical antibiotics no need to stop or decrease intensive steroids .

## Traby: Wound leak

- Larger wound leaks that cause clinically significant hypotony or seem unlikely to spontaneously resolve are best managed with surgical revision.

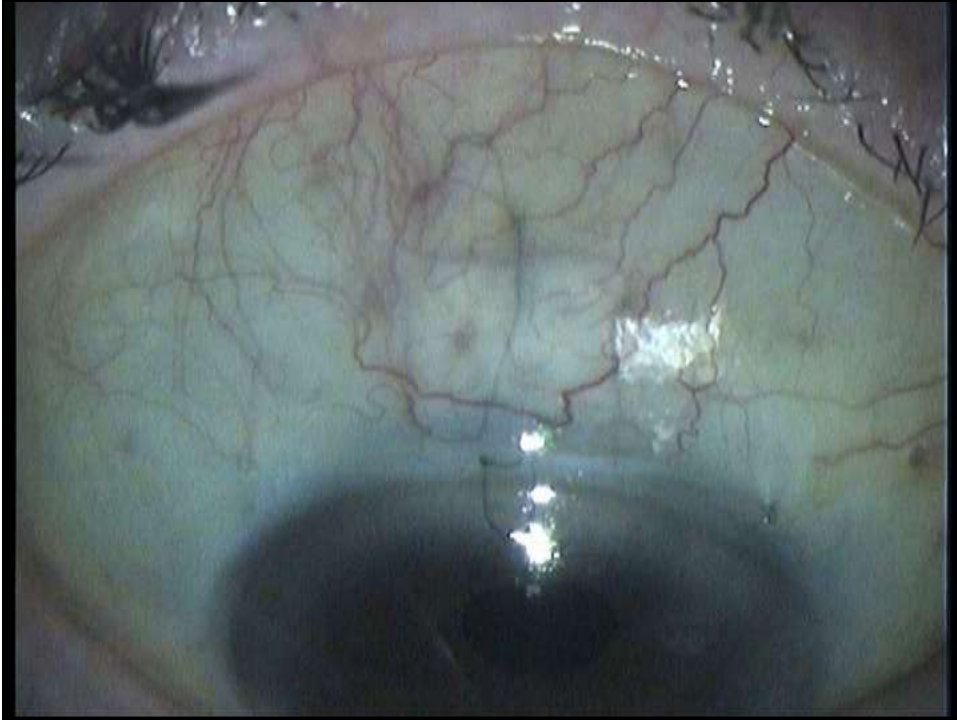




## Overfiltering bleb

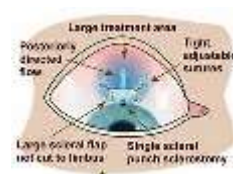
- Thick Flap & Tight suture ( extra sutures).
  - Mild transient hypotony following glaucoma surgery is common and usually well tolerated.
  - Observe and treat with anti-inflammatory agents, cycloplegic agents, and reformation of the anterior chamber w
- needed.





## Overfiltering bleb

- Chronic anterior chamber shallowing becomes clinically significant if corneal-iris touch or corneal-lens touch results in development of synechiae or corneal decompensation.
- Viscoelastic injections may be repeatedly given.





## When to inject

- When to inject? shallow AC with irido corneal touch, Choroidals, maculopathy.
- What to inject? (Under anaesthetic/ Povidone Iodine 5%)
- How to inject?



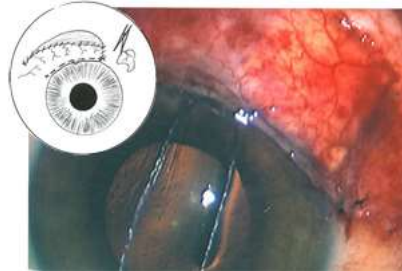
## Over filtering bleb

- *Blood patch, laser application, and cryotherapy, may work ??in some instances but are less effective.*
- pseudophakics can have injection of 0.2 ml of 16% (C3 F8) Mahootchi A 2006, (SF6) 25% Burke J 1997



## Revision of over filtering bleb

- Surgical wound revision with resuturing of the scleral flap with or without patching is the procedure of choice for incompetent or overfiltering trabeculectomy.

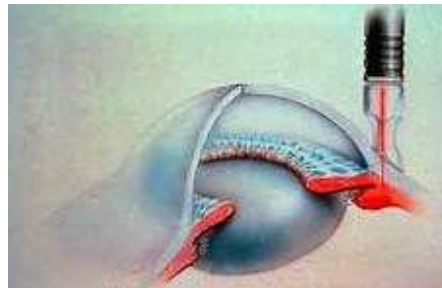


## Diode cyclophoto-coagulation

- Safe, quick but unpredictable.
- Diode is “absolutely” contraindicated in Uveitic glaucoma: JIA, VKH, Behcet’s, Sarcoidosis.
- Inflammation following trauma, malpositioned IOL.

## Diode

- Use of steroids oral / orbital/ Topical??
- Atrophia



## Shunt implant

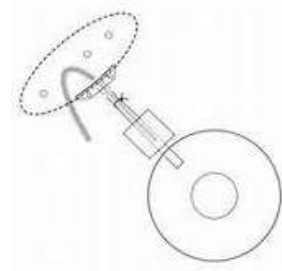
- Ahmed valve: safer. Are you sure??.
- Barvealdt Tube: no valve needs stenting.

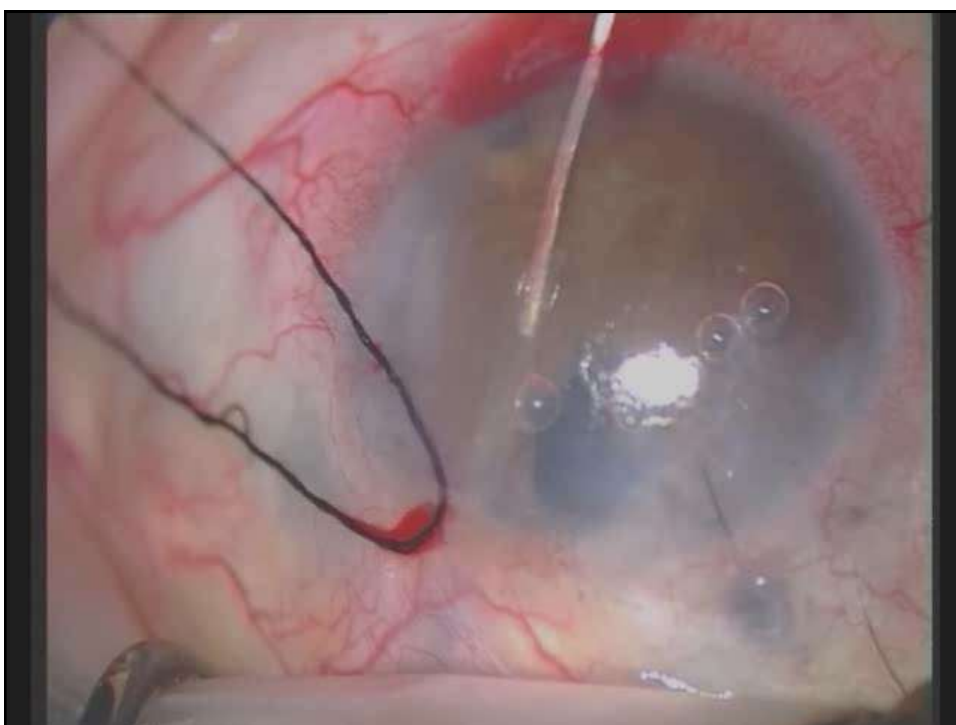
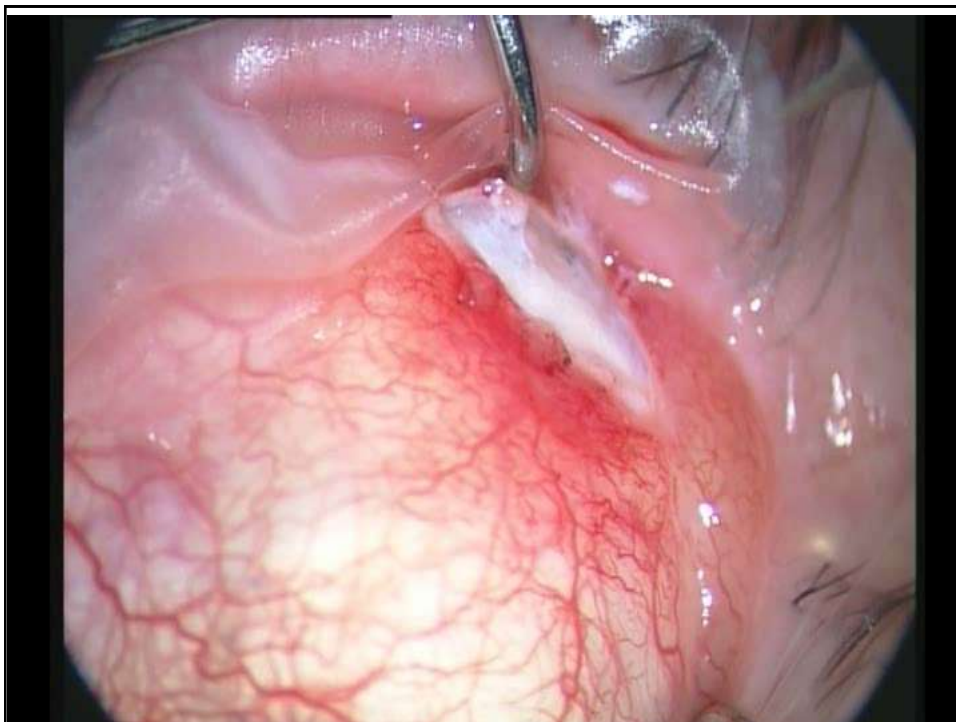


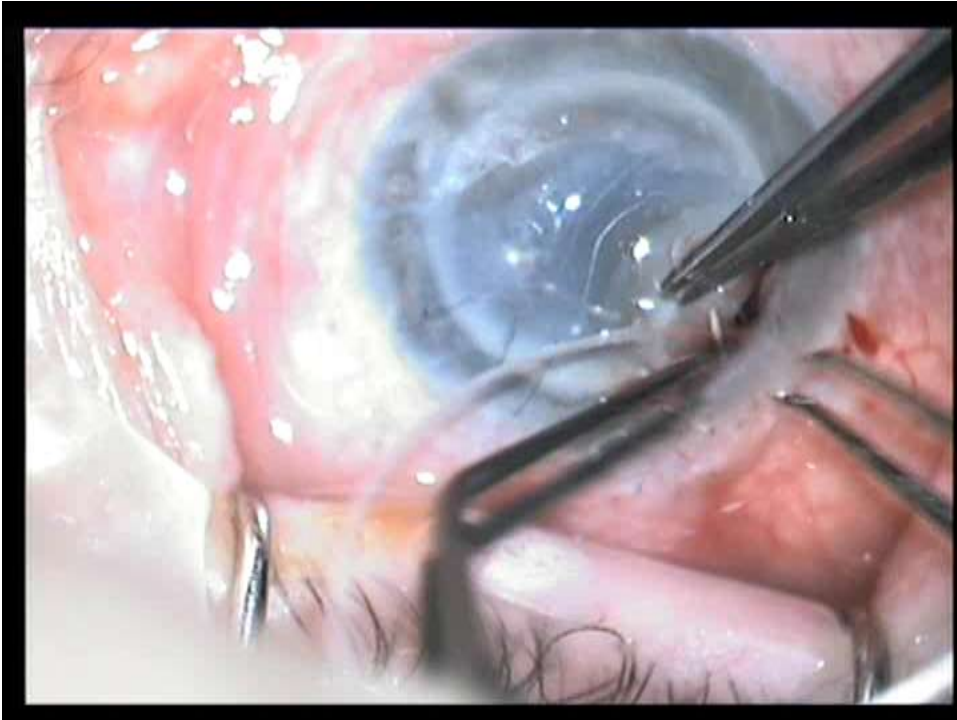
Placement of the Valve

## Shunt implant

- Over draining.
- Conservative management viscoelastic injection multiple if needed or revision surgery.

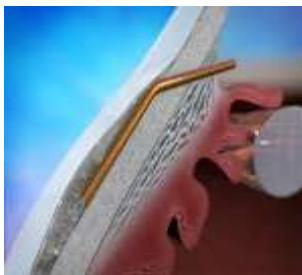






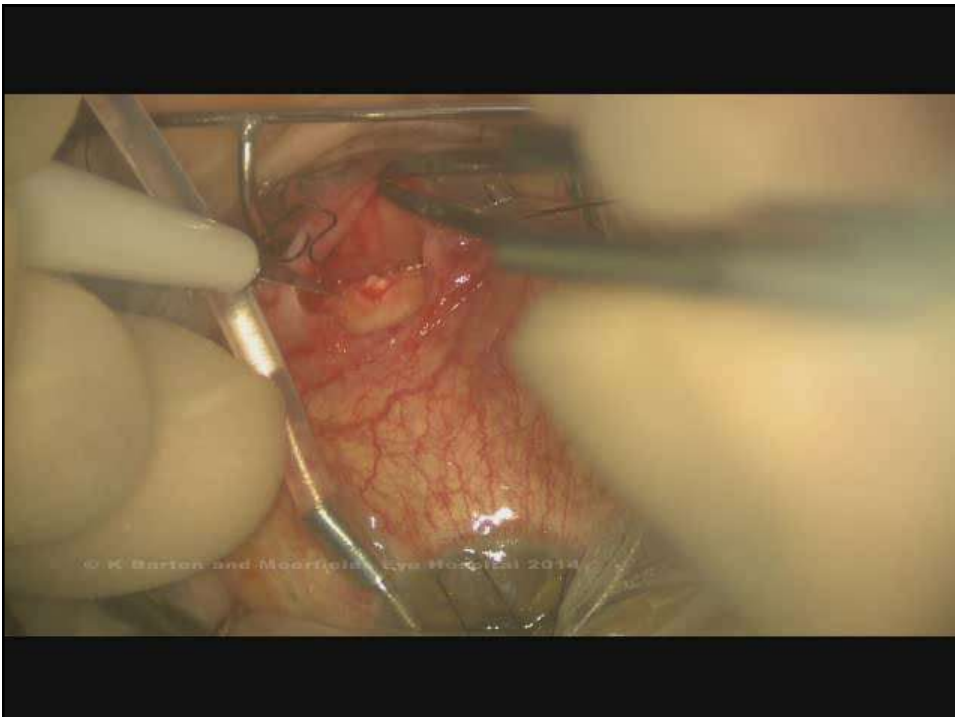
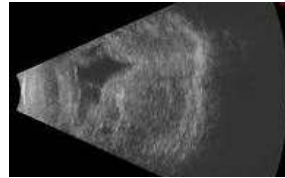
## MIGS

- Ciliochoroidal effusion with persistent hypotony after trabectome surgery. Osman E 2015
- XEN Aquesys Shunt.



## Suprachoroidal Hge

- Consider draining large choroidal effusions if no sign of improvement is present after several (7-14) days of medical and/or chamber reformation management, especially if retinal apposition is noted, the anterior chamber is markedly shallow, or the patient is at higher risk for hemorrhage .





Thank you

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