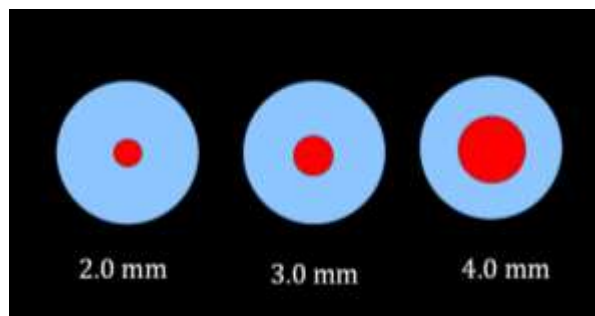


Narrow Pupil

Ismail Moftah, MD
Minia University

Critical Pupil Size



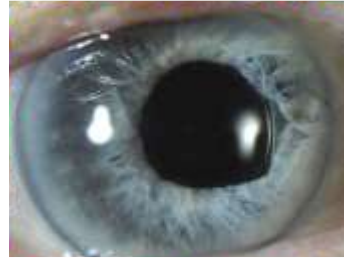
Causes Of Narrow Pupil

- Age related
- Diabetes
- Trauma
- PEX
- Posterior synechiae
- Frequent use of miotic eye drops
- IFIS



Challenges Due To Small Pupil

- Reduced red reflex
- Small capsulorhexis size → phimosis
- Increased risk of Iris injury
- Incomplete cortical cleaning
- Improper alignment of toric IOL



How to manage?



Pharmacologic

Mechanical

(I) Pharmacologic

Intracameral **1 ml epinephrine hydrochloride(Adrenaline) 0.001%**
for 1 minute after corneal incision.

- It does not work in all cases.
- IFIS (overcome action of α 1 blockers).
- Can be mixed with lidocaine 1%.



Omidria

(phenylephrine 1% + ketorolac 3%)



(II) Mechanical Visco-dilation

Highly cohesive OVD (**Healon 5**)

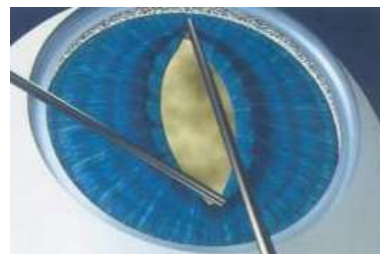
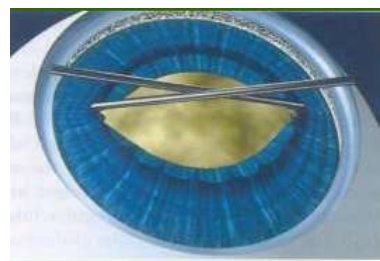
- Low fluidics to ensure slow wash out of it
- Can be re-injected if pupil becomes narrow.
- Can be combined with intracameral epinephrine.



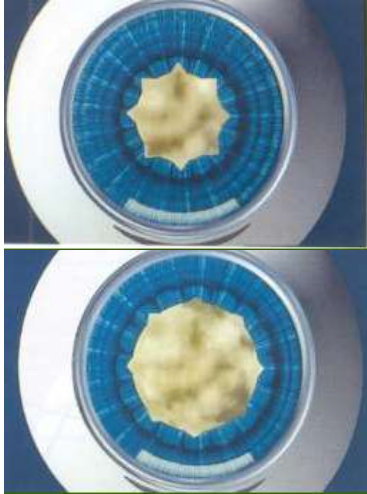
Pupil Stretching

Koglen hooks

- Used in:
 - ✓ Thick irides.
 - ✓ Post uveitic.
- It breaks the fibrotic ring **BUT**,
 - ✓ Gentle to avoid iris tear
 - ✓ Avoid with IFIS
 - ✓ Release PGs.



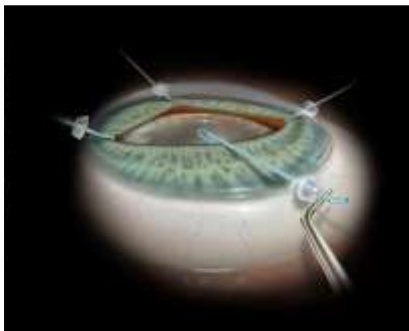
Sphincterotomies

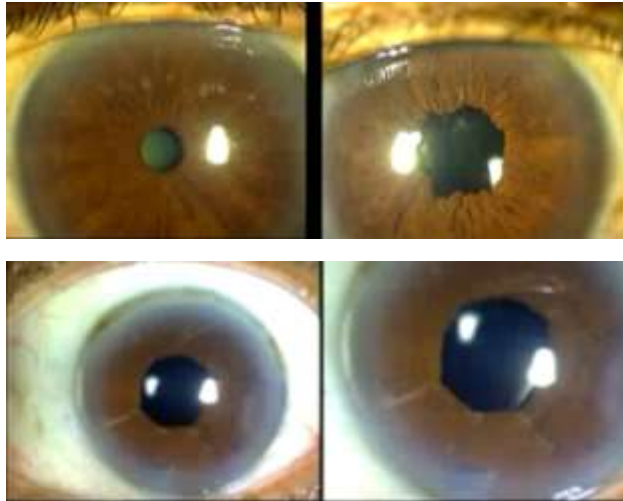


- Up to Eight in number.
- Avoid **Clorettes**.
- Avoid in IFIS.

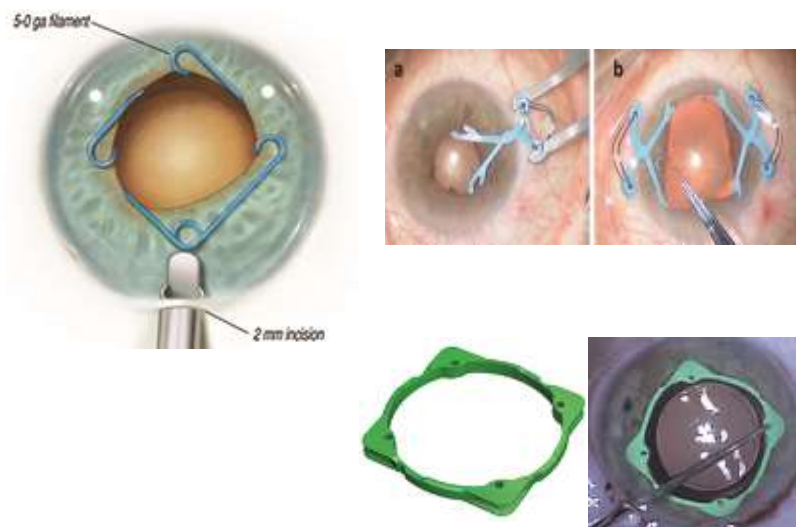
Iris Retractors

- Four paracenteses
- Put in a diamond manner
- May slip during surgery

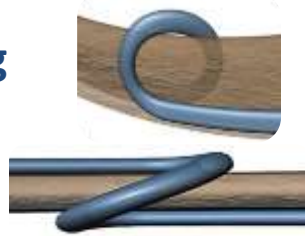




Pupil Expander Devices



Malyugin Ring



- Can be injected through 2 mm wound.
- Prolene 4/0 5/0 new one.
- 8 point fixation to form near circular pupil.
- 6.25 and 7 mm dilation.



Advantages

- Less stress to the iris tissue.
- Easy implant and remove.
- Better for small eyes.

Visitec I-Ring

- Circular uniform 360 degree.
- Polyurethane.
- 6.3 mm.
- No special manipulator.



Assia Pupil Expander (APX)

- Ehud Assia.
- Israel.



Surgical skills

- Use Viscoadaptive OVD (Healon).
- Decrease Fluidic Parameters.
- Utilize Chop.
- Manipulate In The Ac Center.



Summary

More than 4 mm

- Adrenaline
- Visco-dilation
- Stretch pupilloplasty

Less than 4 mm

- Pupil expanding devices
- Sphincterotomies

