

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

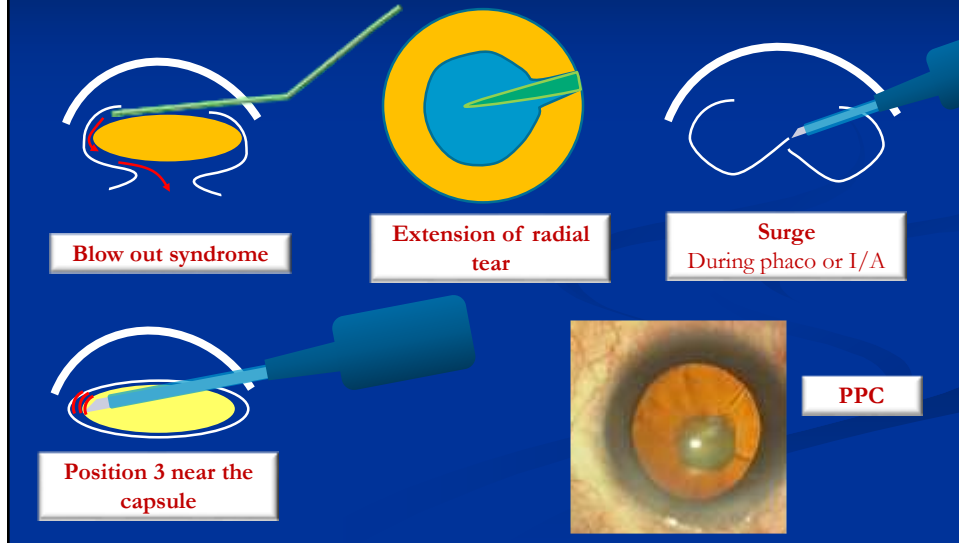


Saving the Sinking Ship



Prof. Tarek Mamoun; M.D., FRCS

Causes of ruptured posterior capsule

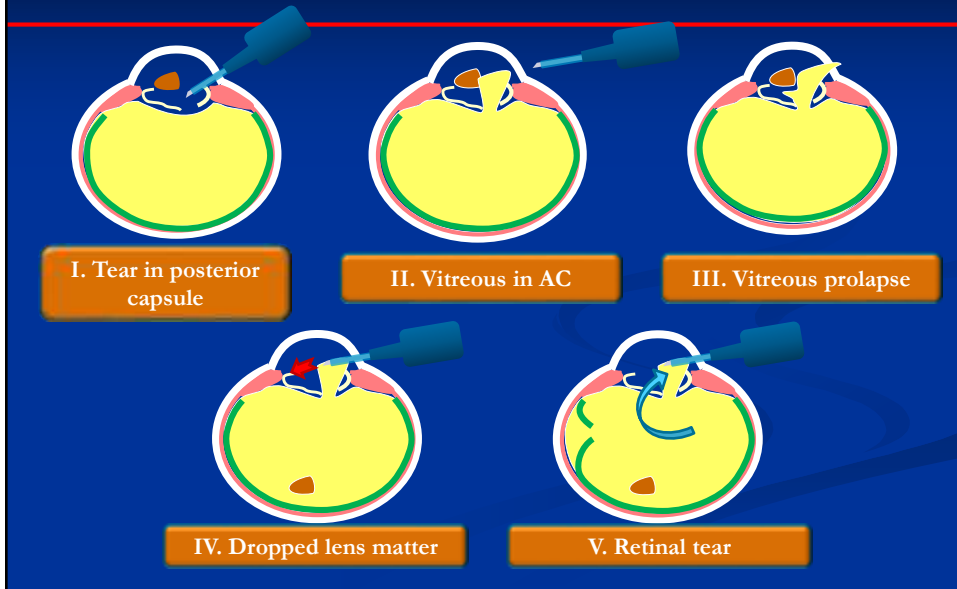


Stages of the iatrogenic damage

- I. Ruptured posterior capsule only.
- II. Presentation of vitreous into AC **when you depressurize the AC.**
- III. Vitreous prolapse through the wound.
- IV. Drop of lens matter into vitreous **when you press position 1.**
- V. Retinal tear **when you press position 2 and pull on the vitreous.**



The 5 Stages



Consequences

1. Difficult removal of remaining lens matter.
2. Progressive miosis.
3. Progressive corneal edema.
4. Dropped lens matter.
5. Unstable IOL implantation.
6. Increases the risk of RD (more if vitreous loss occurs).
7. Damage of the iris by the vitrectomy probe.
8. Endophthalmitis.

The first thing to do is the rearrangement of priorities.

Now the most precious structure is the ANTERIOR CAPULE

1. Avoid further damage of the remaining capsule.
2. Avoid damage of the iris & corneal endothelium.
3. Removal of lens matter from anterior segment.
4. Removal of vitreous from AC.
5. IOL implantation.
6. Astigmatism.
7. Removal of lens matter from the vitreous.

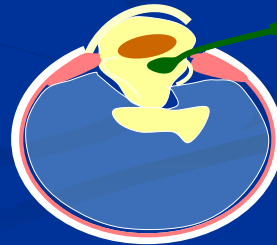
Removal of nuclear fragment

A. By phaco:

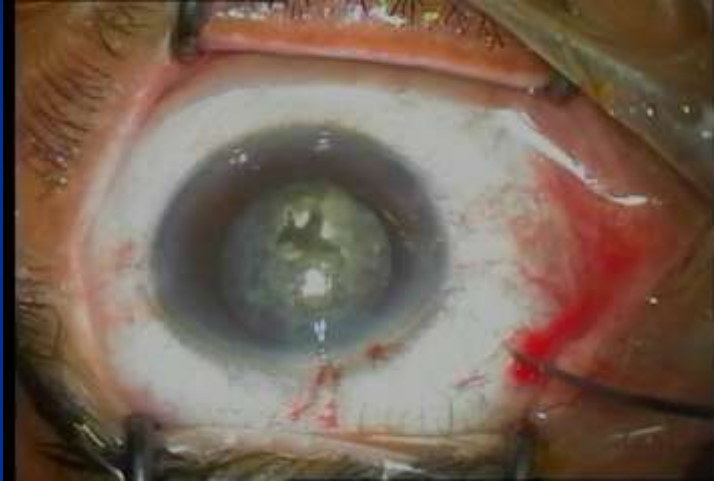
- Decrease the bottle height & flow rate.
- Support the nuclear fragments by iris spatula or the IOL.



- ### B. By scooping
- after widening the wound (**never by pressing on the posterior lip of the wound like ECCE**).

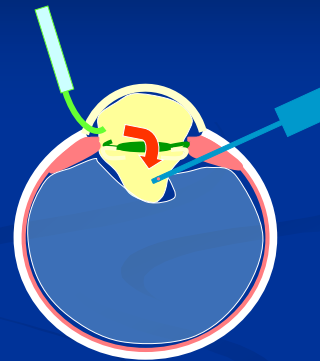


PAL



III. Ruptured posterior capsule e. Removal of cortex & vitreous

- **Cortex only** → dry aspiration.
- **Vitreous in AC** → stain with TAA.
- **Implant once you clean AC from vitreous** → use the vitrectomy probe after IOL implantation:
 - The remnants of the capsule may be lost if anterior vitrectomy is done first.
 - The IOL acts as a mechanical barrier that prevents further vitreous presentation into the anterior chamber.
 - The direction of fluid from anterior to posterior pushes the vitreous strands backwards.



III. Ruptured posterior capsule

f. IOL considerations

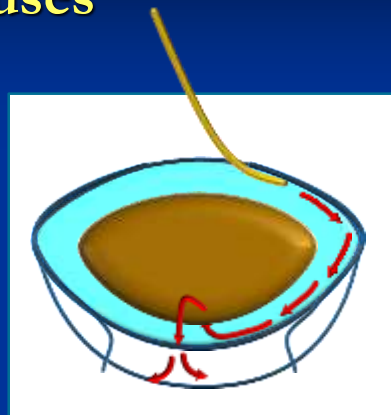
- Small posterior capsular tear → **posterior rhexis** → implant single piece foldable IOL.
- Large tear + intact rhexis → 3 piece foldable IOL in the sulcus + optic capture in rhexis.
- Large capsular tear + radial extension of rhexis → PMMA IOL.
- Inadequate capsule →
 - Iris fixation
 - Scleral fixation IOL.
 - AC-IOL (**avoided in glaucoma, DM, children & corneal edema**).



VII. Blow out of the lens capsule

a. Causes

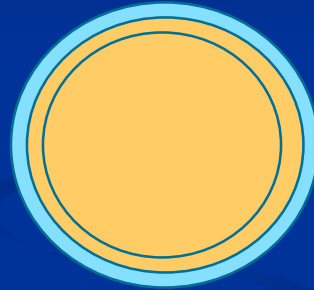
- Large brown nucleus.
- Small rhexis.
- Rarified lens capsule.
- Posterior polar cataract.



VII. Blow out of the lens capsule

b. Signs of capsule blow out

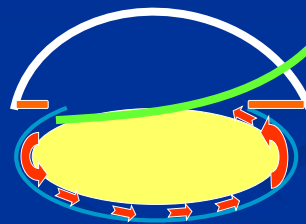
1. Little snapping miosis.
2. Iris prolapse:



VII. Blow out of the lens capsule

b. Signs of capsule blow out

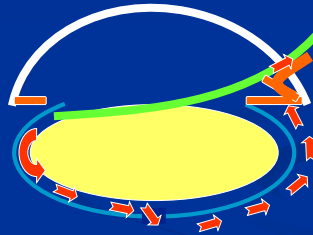
1. Little snapping miosis.
2. Iris prolapse:



VII. Blow out of the lens capsule

b. Signs of capsule blow out

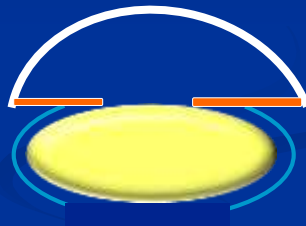
1. Little snapping miosis.
2. Iris prolapse:



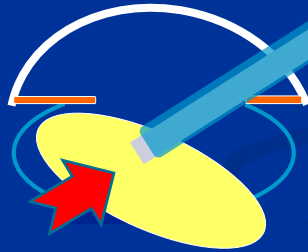
VII. Blow out of the lens capsule

b. Signs of capsule blow out

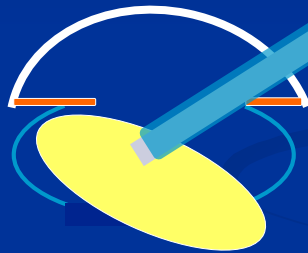
1. Little snapping miosis.
2. Iris prolapse.
3. Progressive miosis.
4. Failure of rotation of the nucleus.
5. Tilting of the nucleus.
6. Drop down of nucleus.



The worst action



The Hope

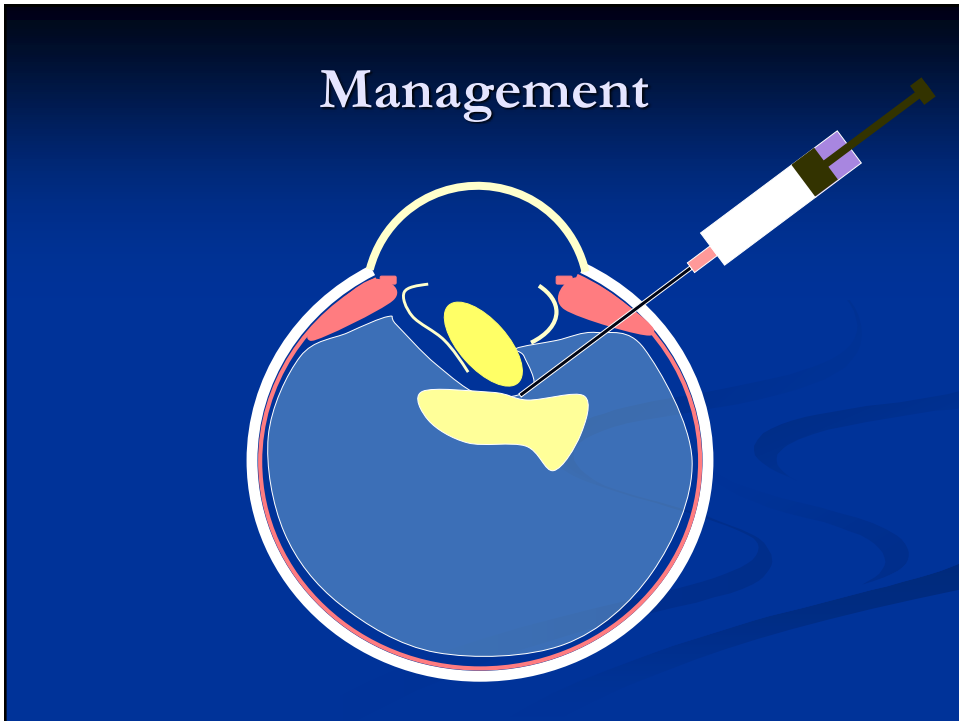
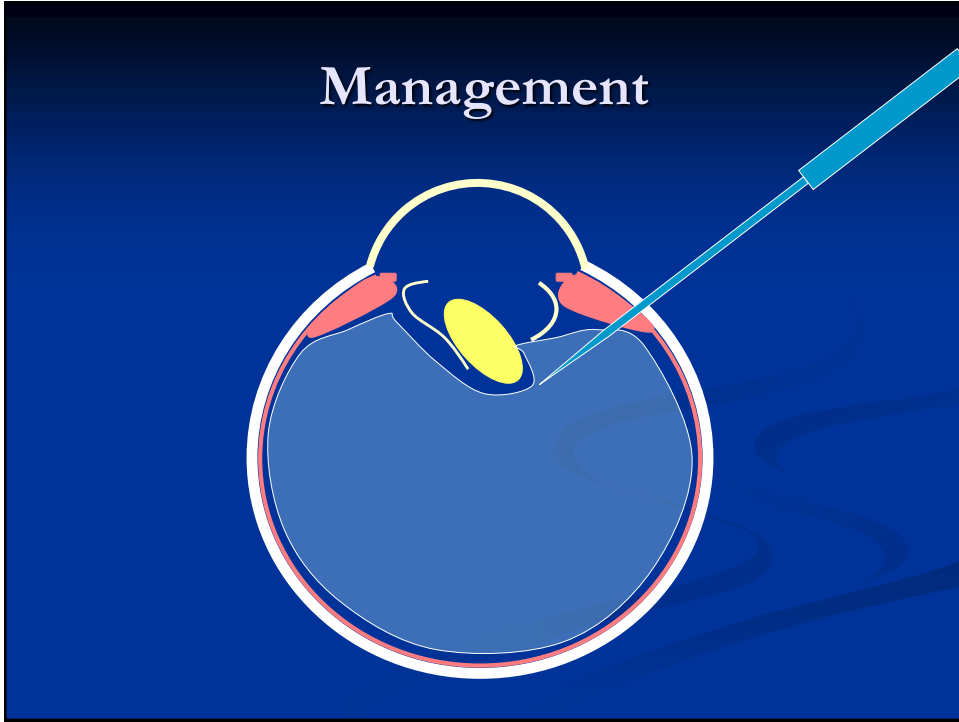


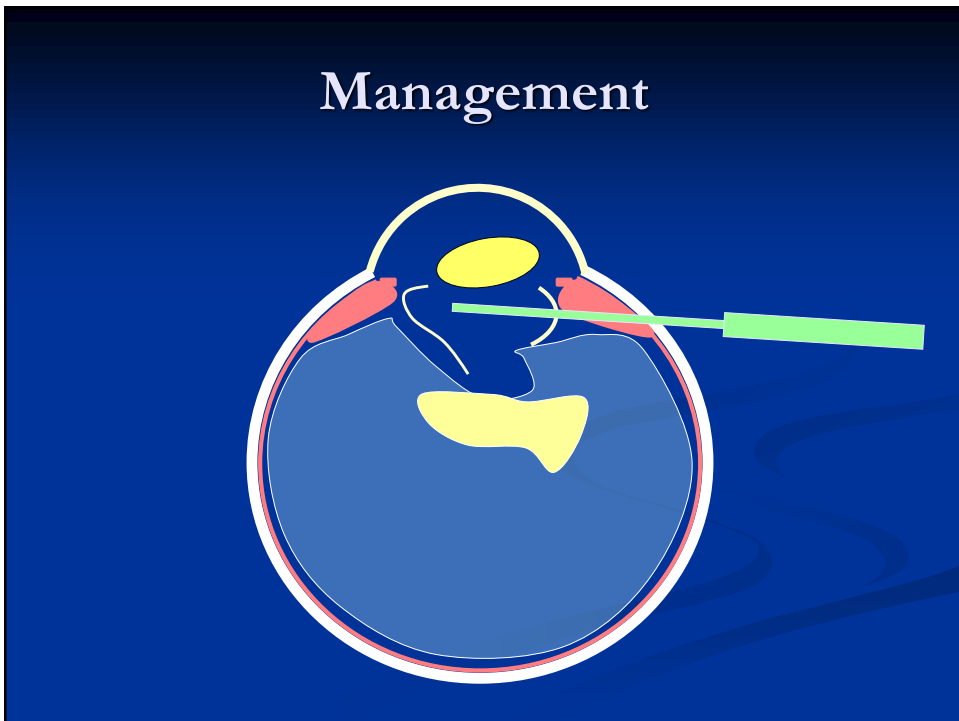
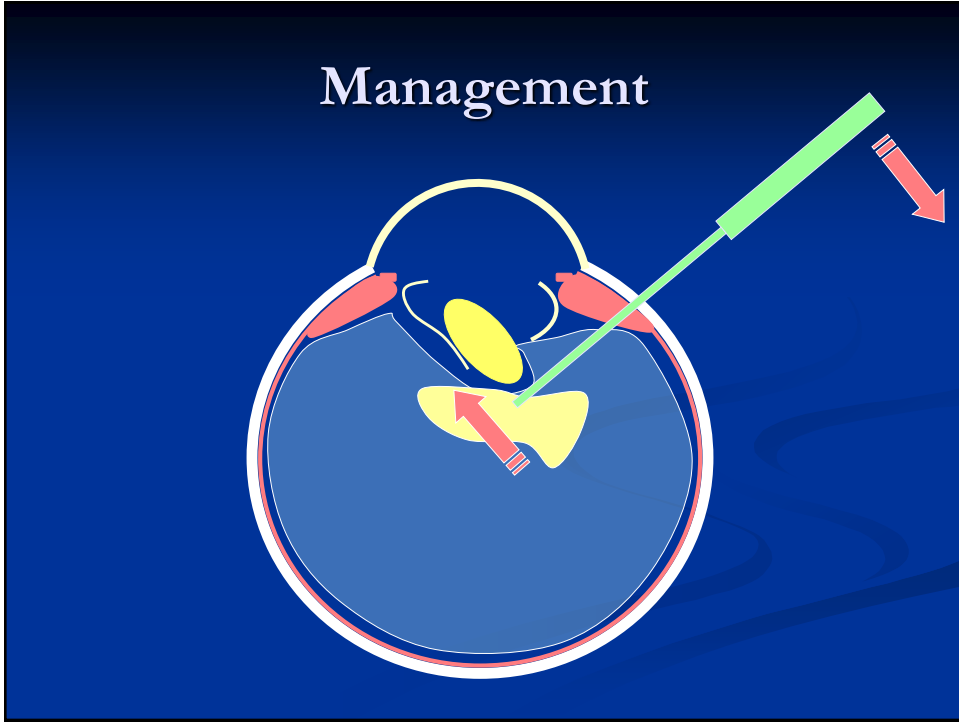
The Reality

Game Over...
Call a Vitreoretinal

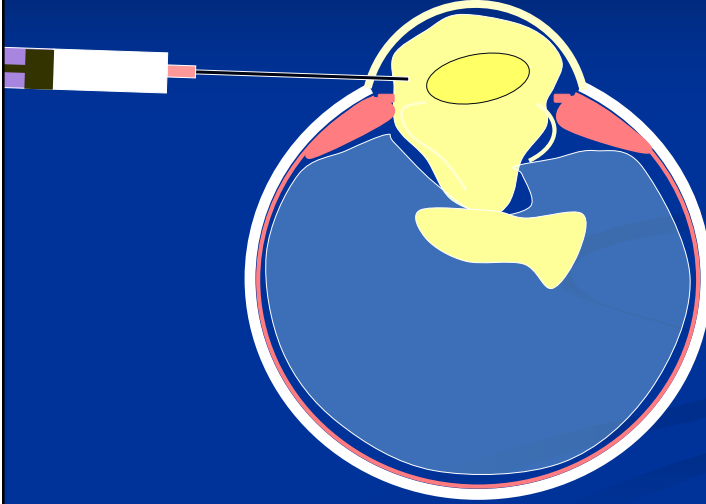
Management

Posterior Assisted Levitation
of the Nucleus (PAL)

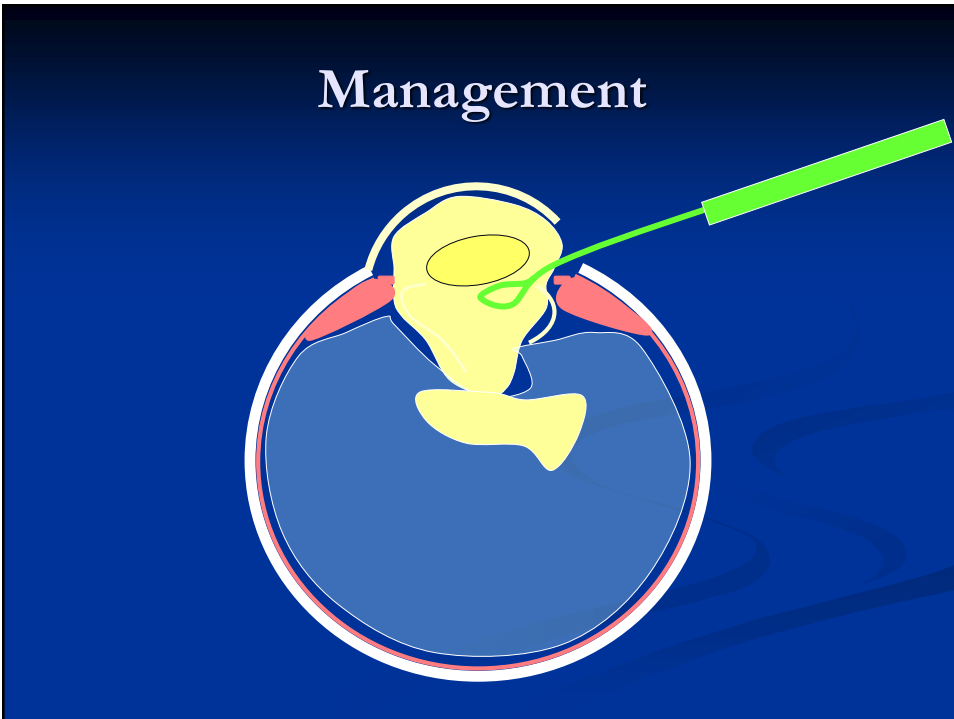




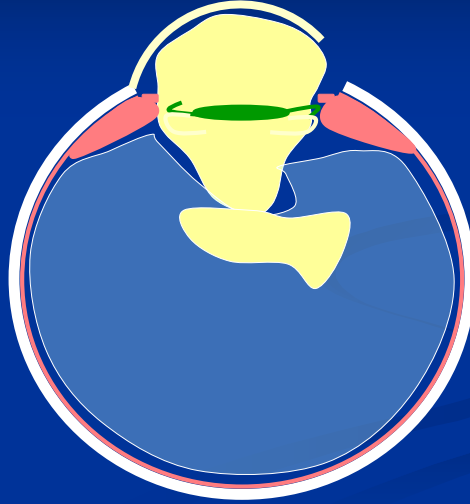
Management



Management

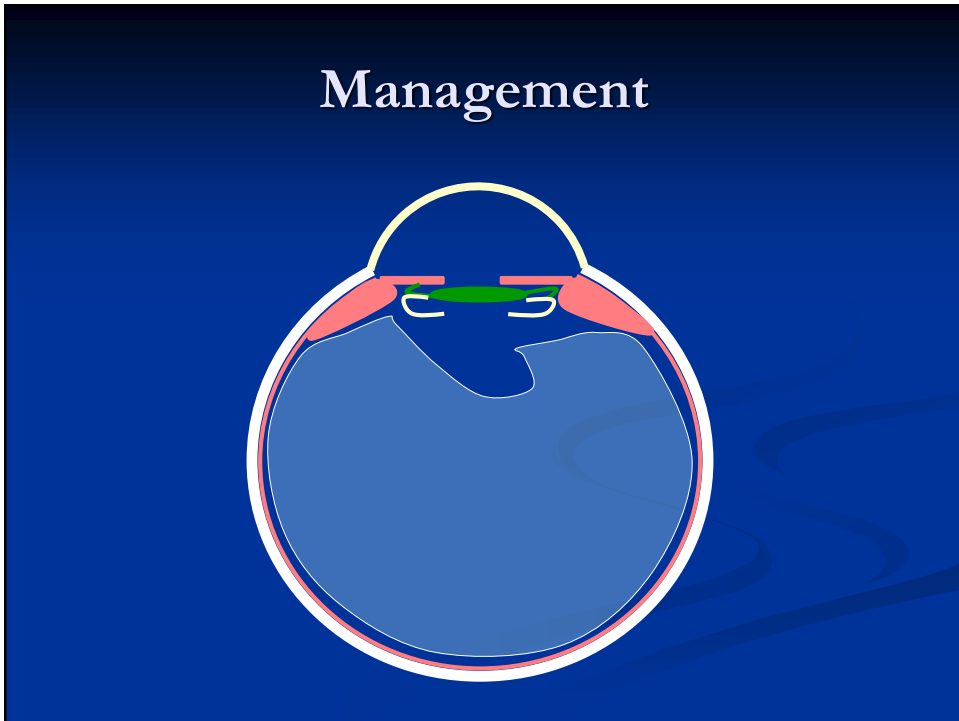
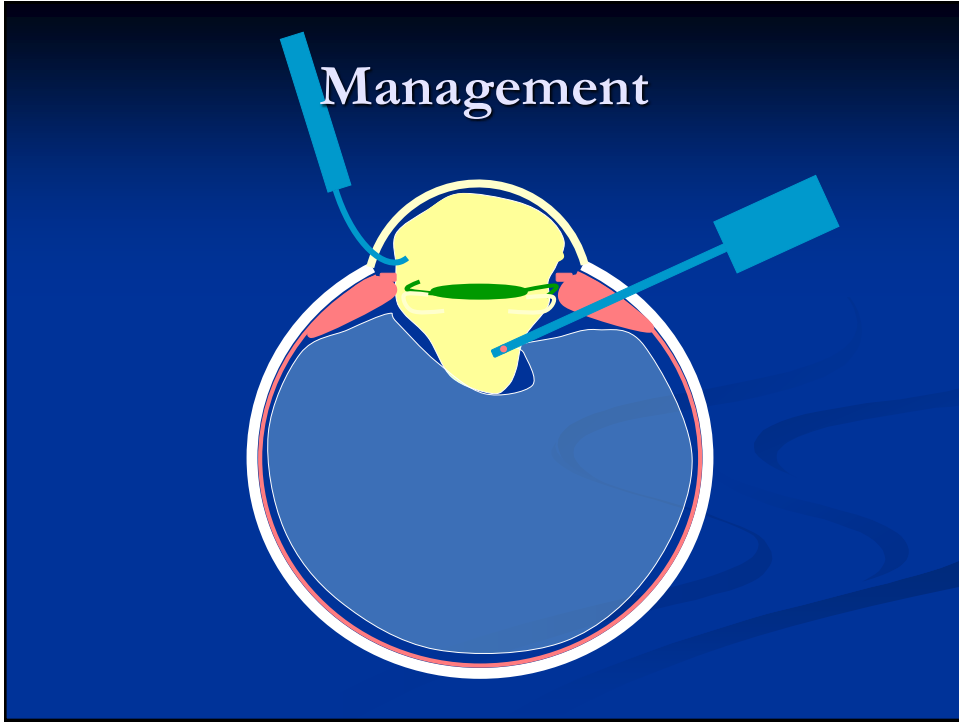


Management

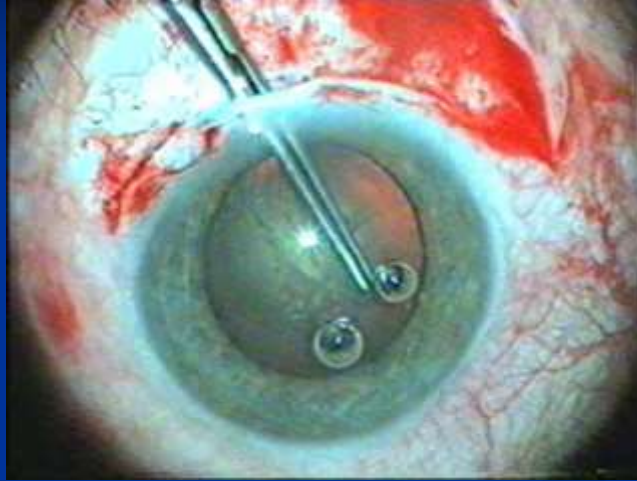


Management





Blow out of the posterior lens capsule



Supported emulsification of the nucleus + PP anterior vitrectomy and cortical aspiration



PP anterior vitrectomy after IOL implantation



Vitreous in AC: TA assisted anterior vitrectomy



Dropped whole nucleus



Dropped IOL & lens matter

