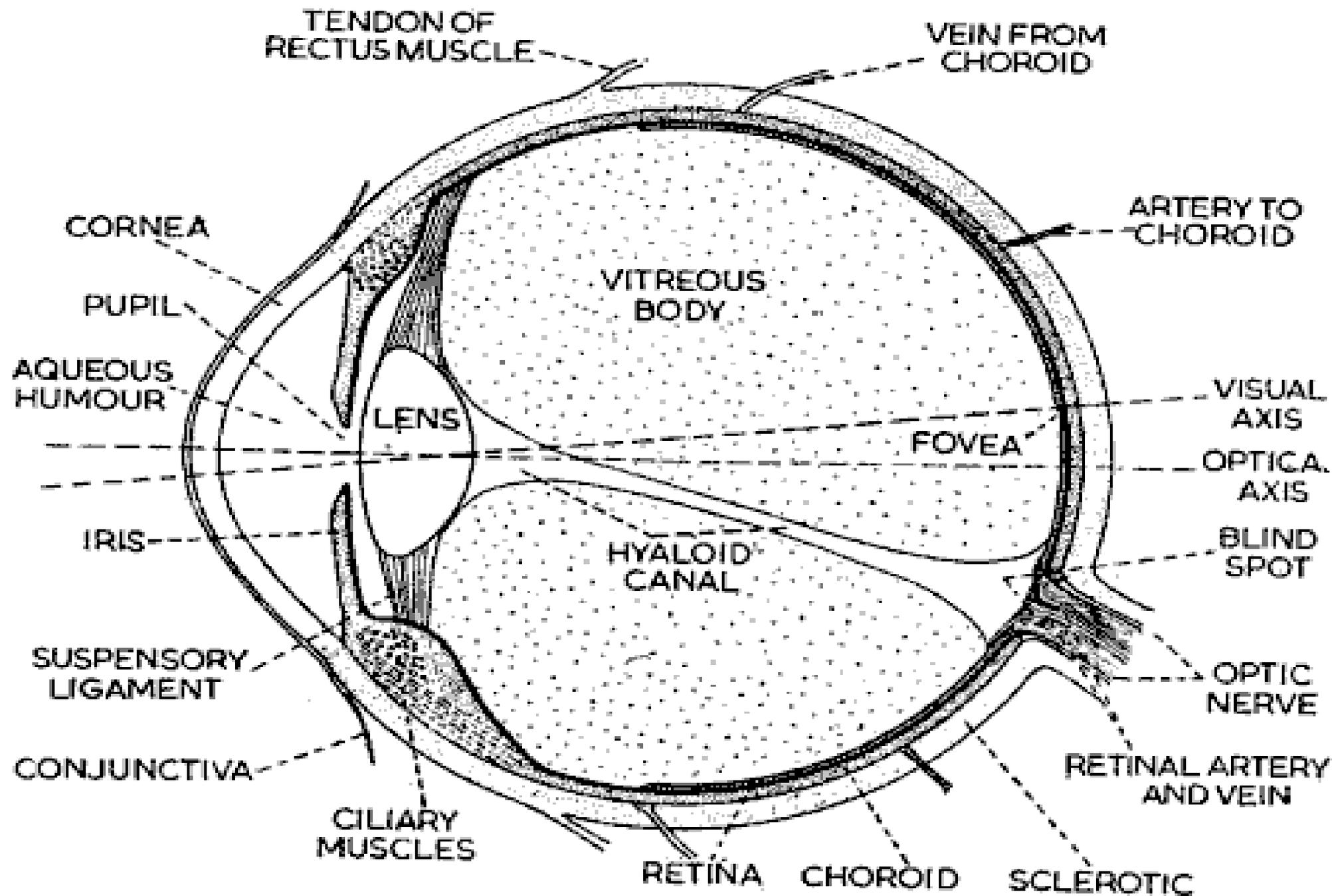
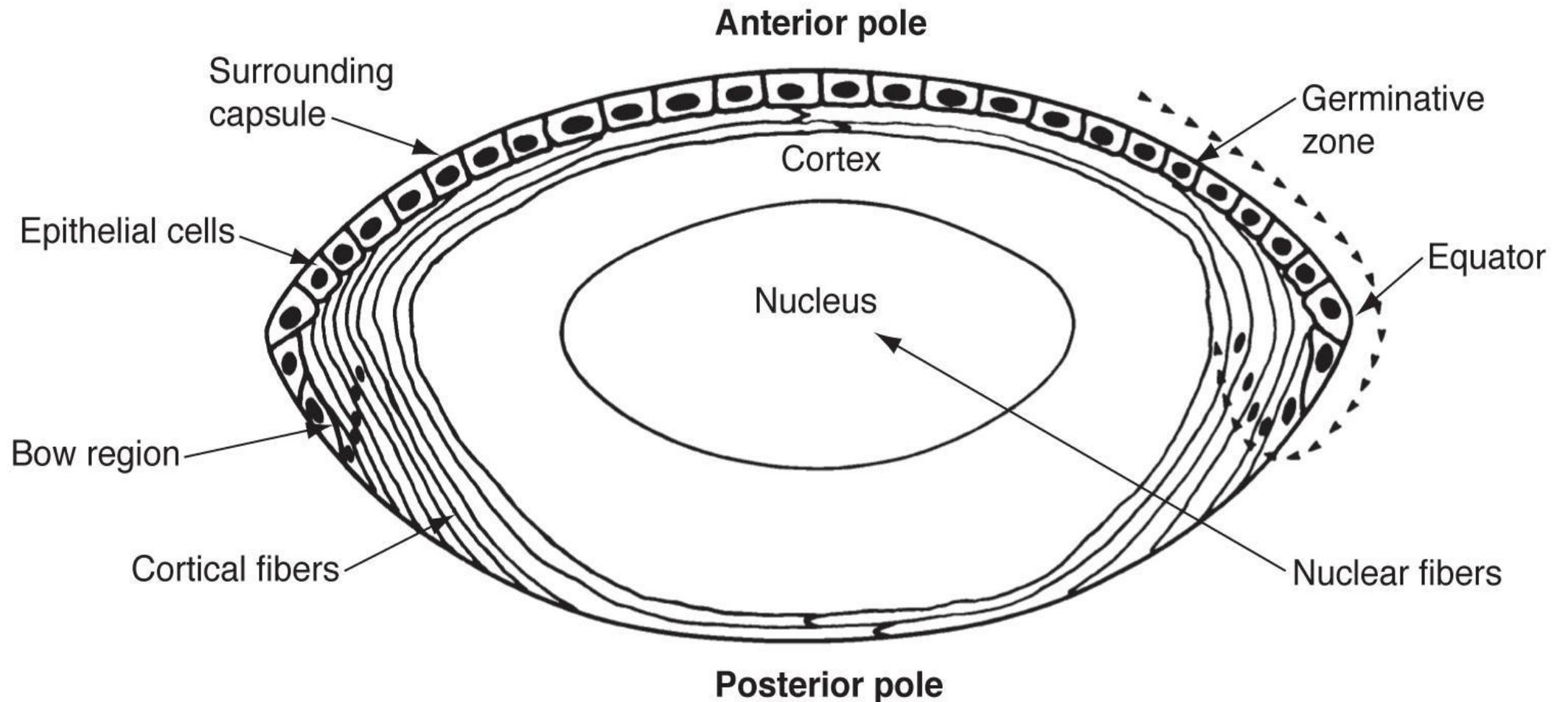


Cataract



Lens

- Is biconvex ,normally transparent and avascular structure
- It is held in position by the suspensory ligament



- **Diseases that affect the lens may affect:**

Structure

Shape

Position

Cataract

- Cataract is a dense, cloudy area that forms in the lens of the eye begins when proteins in the eye form clumps.

Epidemiology:

- The common cause of treatable blindness in the world
- Typical onset 50 to 60 years (gradual and progressive)
- Female = Male

Causes

- **Senile (age related)** : results from cumulative exposure to environmental and other influences such as smoking , UV light and blood sugar level
- **Pre-senile** : which may be associated with specific ocular or systemic diseases

Pre-Senile cataract associations :

■ Systemic causes:

1. DM
2. Metabolic diseases (Galactosemia ,Hypocalcemia)
3. Systemic drugs (steroids , chlorpromazine)
4. Infection (Rubella)
5. Myotonic dystrophy
6. Atopic dermatitis (cause shield cataract)
7. Systemic syndromes (Down's , Lowe's)
8. Congenital Cataract (inherited)
9. External radiation

Pre-Senile cataract associations :

■ Ocular conditions:

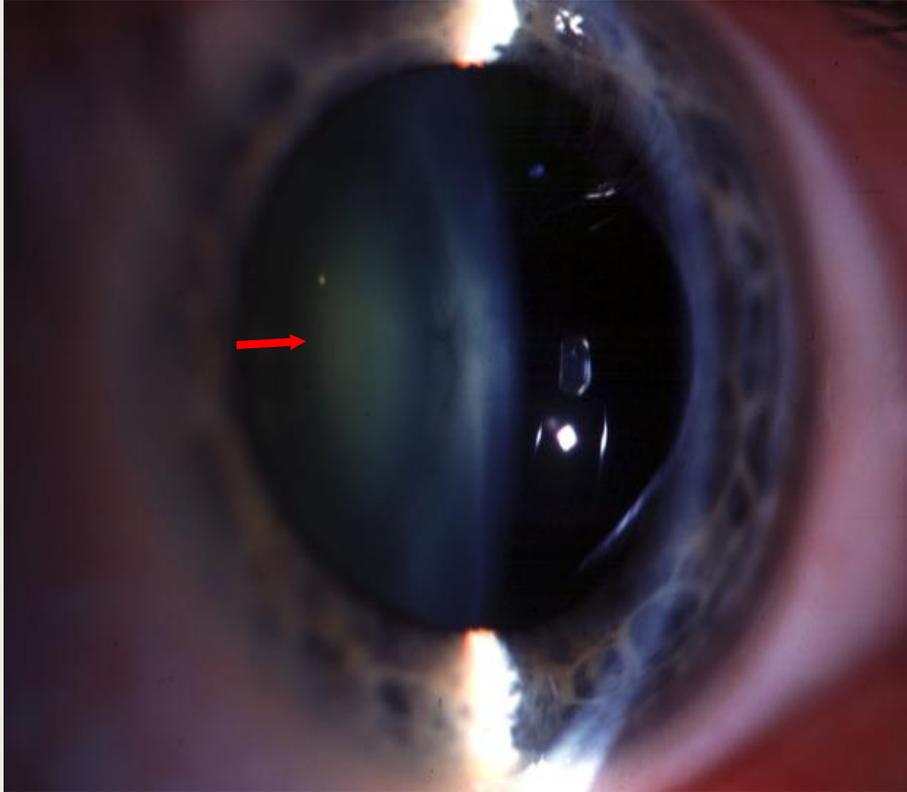
1. Trauma
2. Uveitis
3. High myopia
4. Topical medications (steroid and anti-psychotic)
5. Intraocular tumors

Types

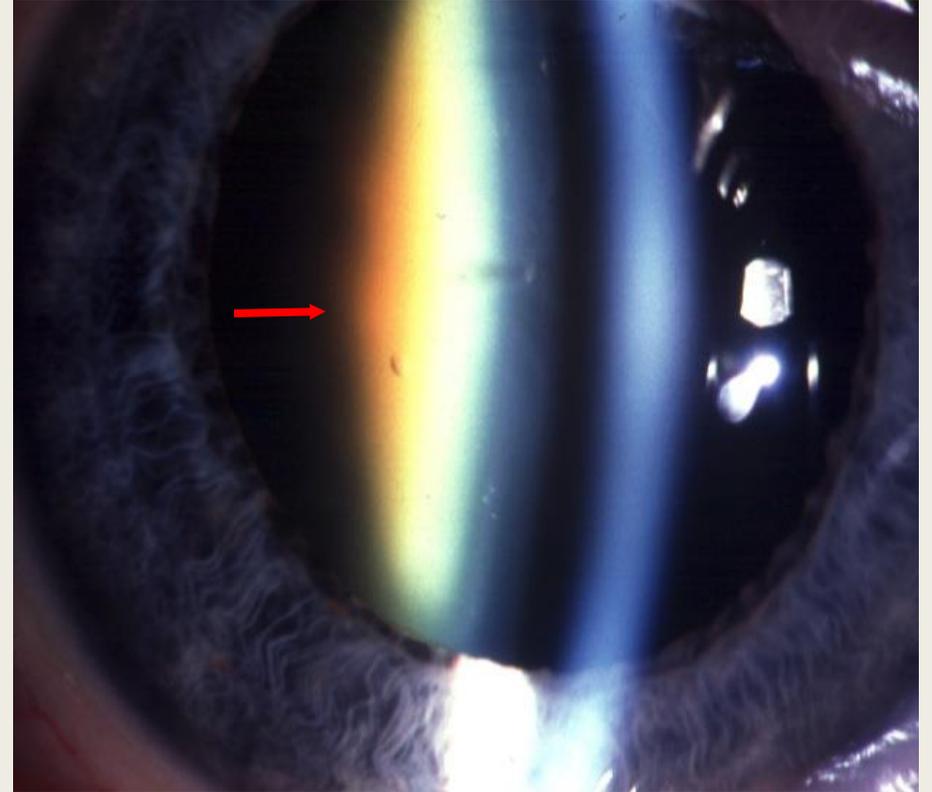
1. Nuclear Cataract
2. Cortical Cataract
3. posterior subcapsular cataract
4. mature cataract
5. Pre-senile traumatic cataract
6. Shield cataract

Nuclear cataract

Progression



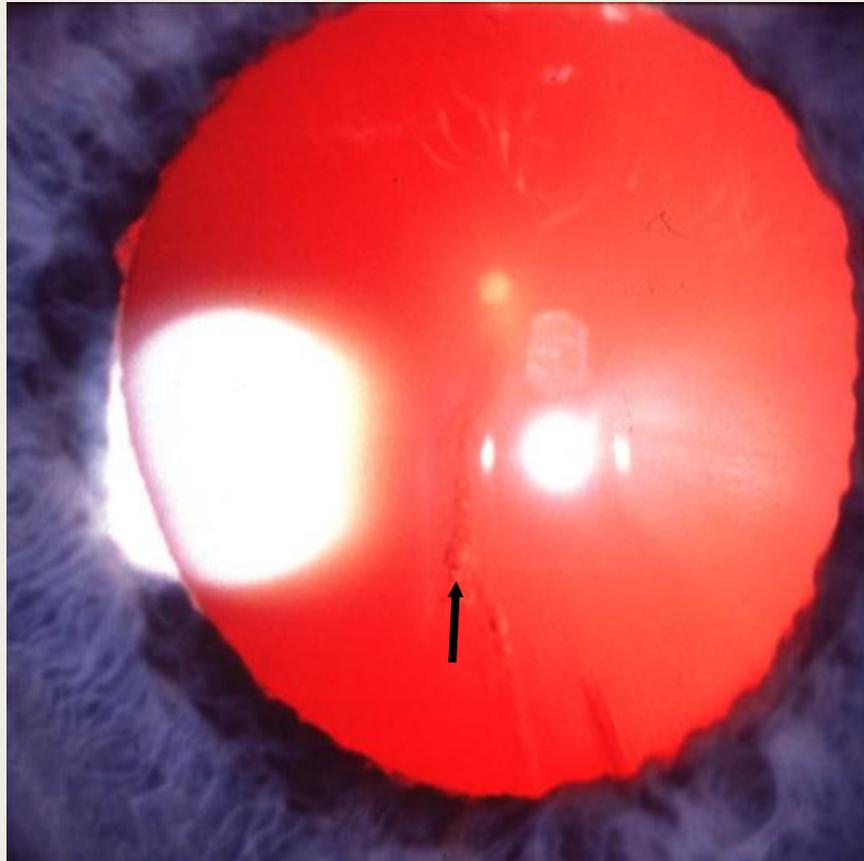
- Exaggeration of normal nuclear ageing change
- Causes increasing myopia



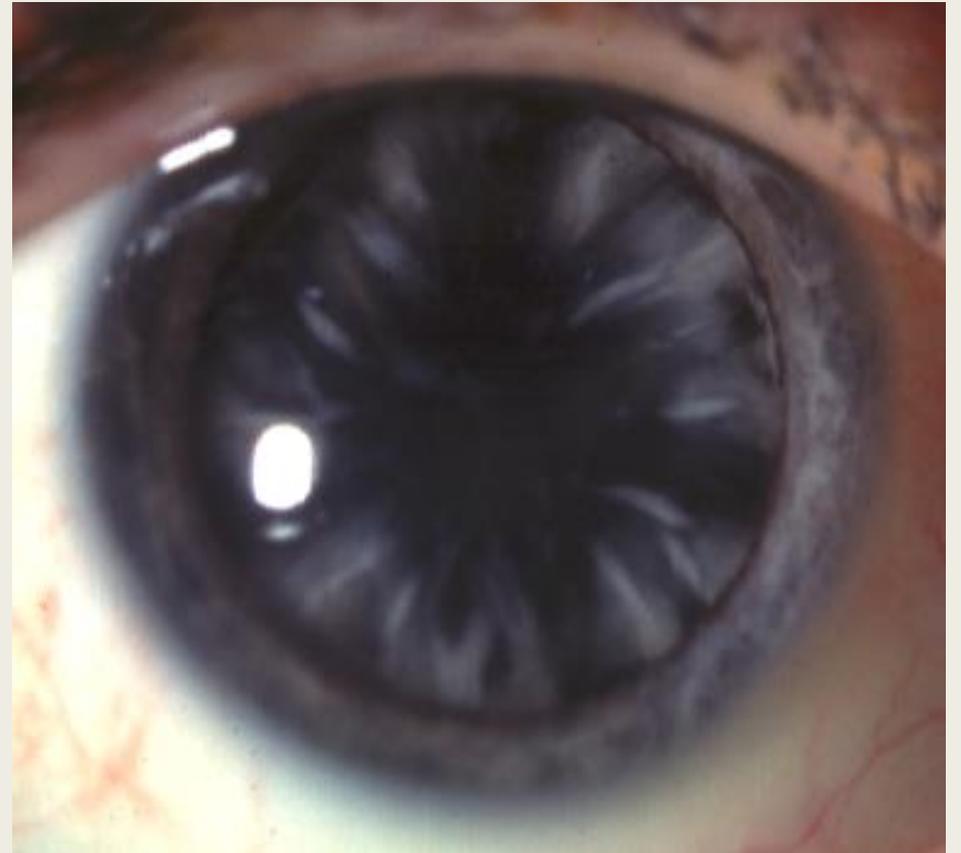
- Increasing nuclear opacification
- Initially yellow then brown

Cortical cataract

Progression

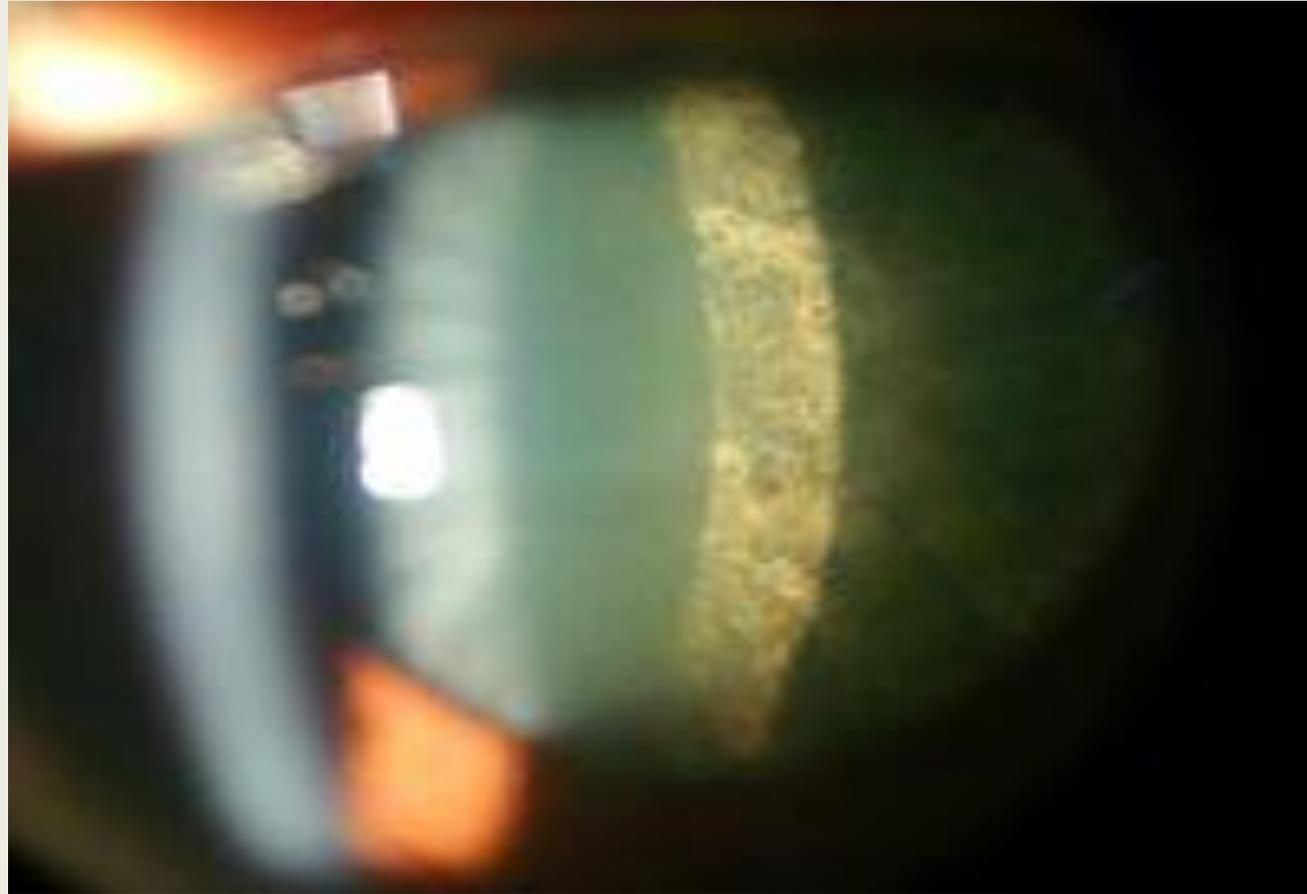


- **Initially vacuoles and clefts**



- **Progressive radial spoke-like opacities**

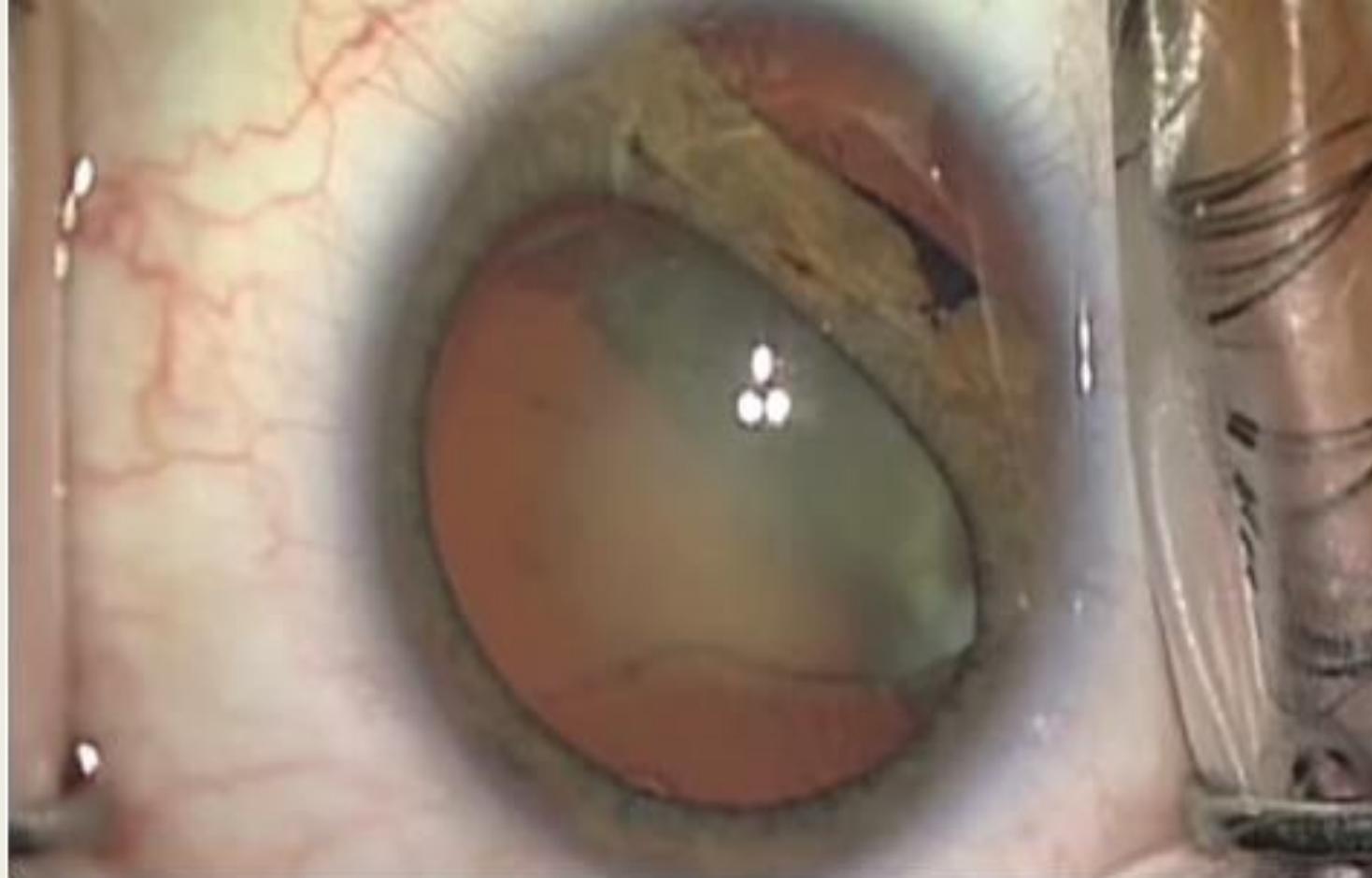
Posterior subcapsular cataract



Mature cataract



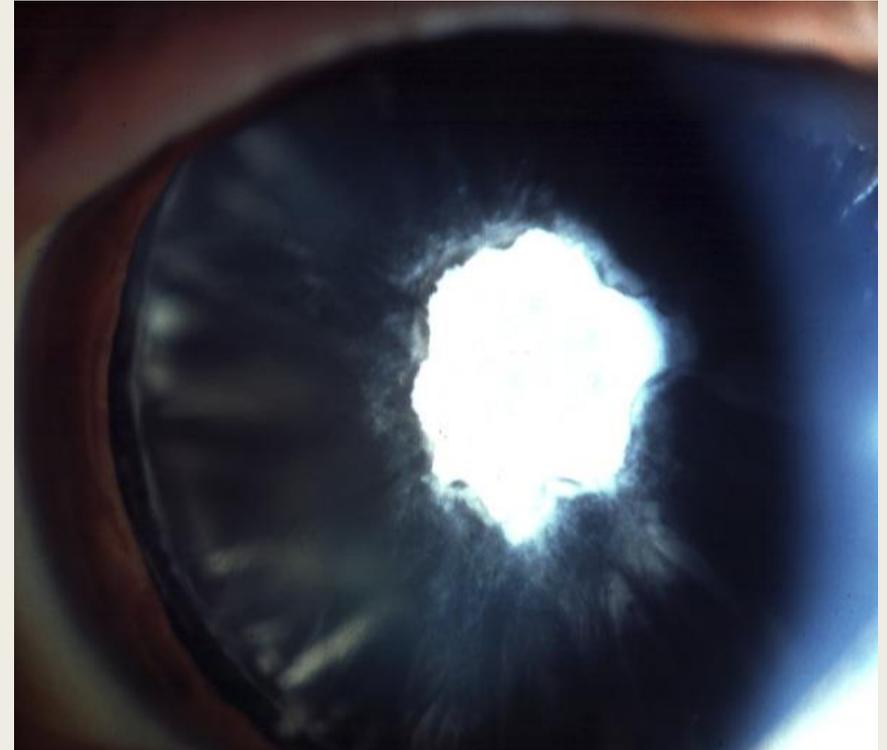
Pre-senile traumatic cataract



Atopic dermatitis



- Cataract develops in **10%** of cases between **15-30** years
- **Bilateral** in **70%**
- Frequently becomes mature



- Anterior subcapsular plaque (shield cataract درع)
- Wrinkles in anterior capsule

Symptoms

1. Loss of vision
2. Glare
3. Change in refractive error
4. Leukocoria

Signs

1. Decreased visual acuity especially when measured in light(VA)
2. Lens opacity
3. Black spot in the center of the red reflex



Treatment

- **SURGICAL**
- **No more wait to RIPEN**

Cataract surgery :

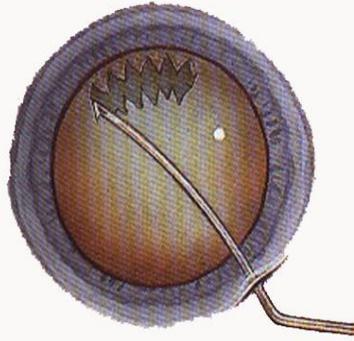
- The operation involves removal of most of the lens
- Replacement of the refractive power of the removed lens
- Topical , local and general anaesthesia

Techniques

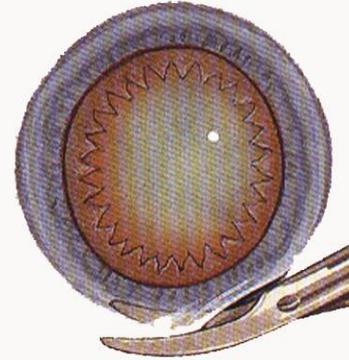
- **Phacoemulsification**
- **Extra Capsular Cataract Extraction (ECCE) :**
remove the lens but capsule still present
- **Intra Capsular Cataract Extraction (ICCE) :**
remove the lens with it's capsule.

Extracapsular cataract extraction

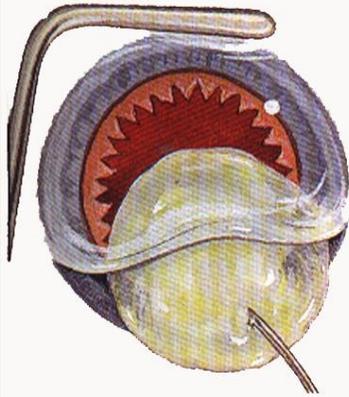
1. Anterior capsulotomy



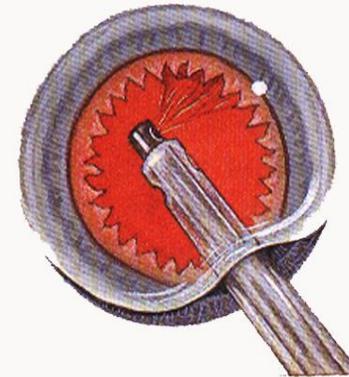
2. Completion of incision



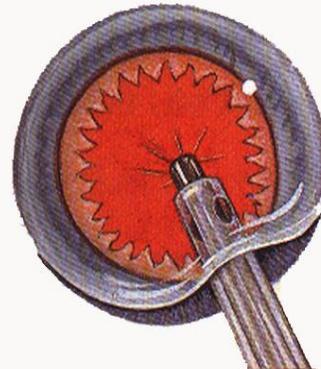
3. Expression of nucleus



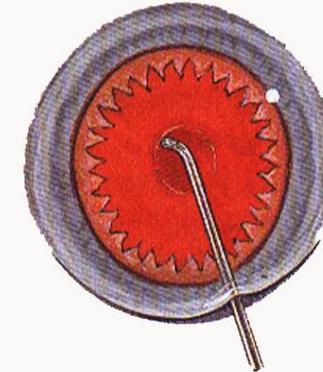
4. Cortical cleanup



5. Care not to aspirate posterior capsule accidentally

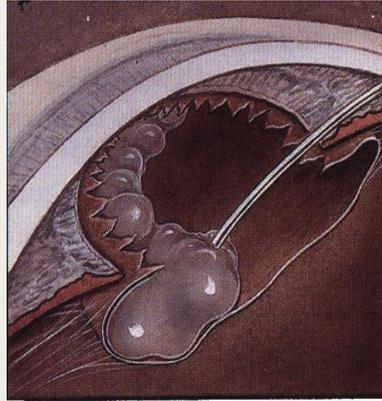


6. Polishing of posterior capsule, if appropriate

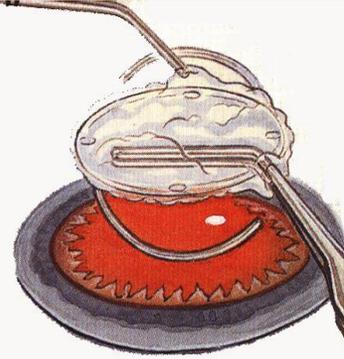


Extracapsular cataract extraction (cont.)

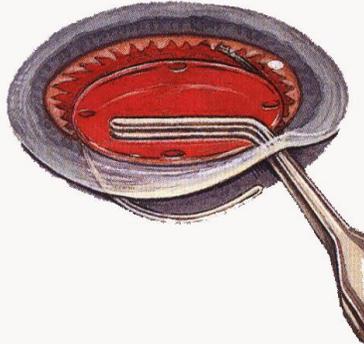
7. Injection of viscoelastic substance



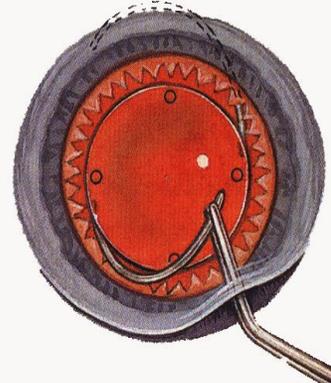
8. Grasping of intraocular lens and coating with viscoelastic substance



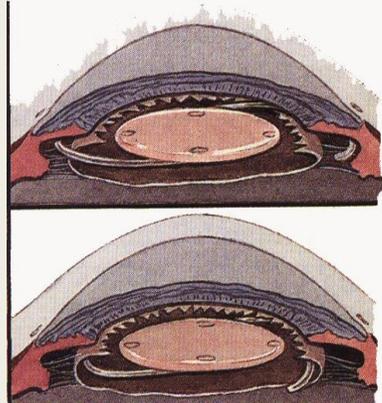
9. Insertion of inferior haptic and optic



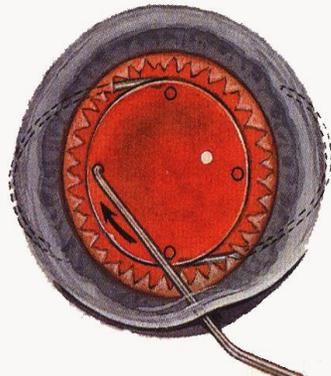
10. Insertion of superior haptic



11. Placement of haptics into capsular bag and not into ciliary sulcus

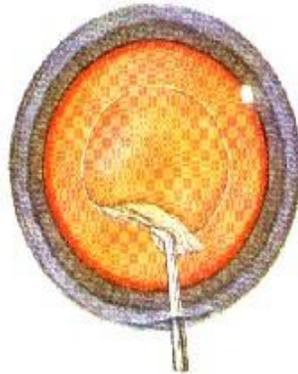


12. Dialling of intraocular lens into horizontal position

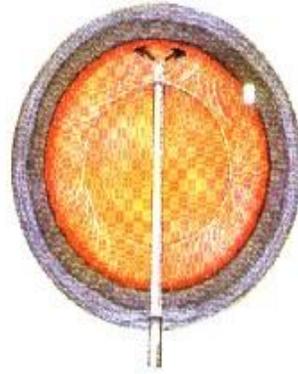


Phacoemulsification

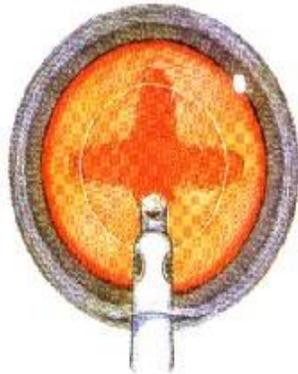
1. Capsulorrhexis



2. Hydrodissection



3. Sculpting of nucleus



4. Cracking of nucleus

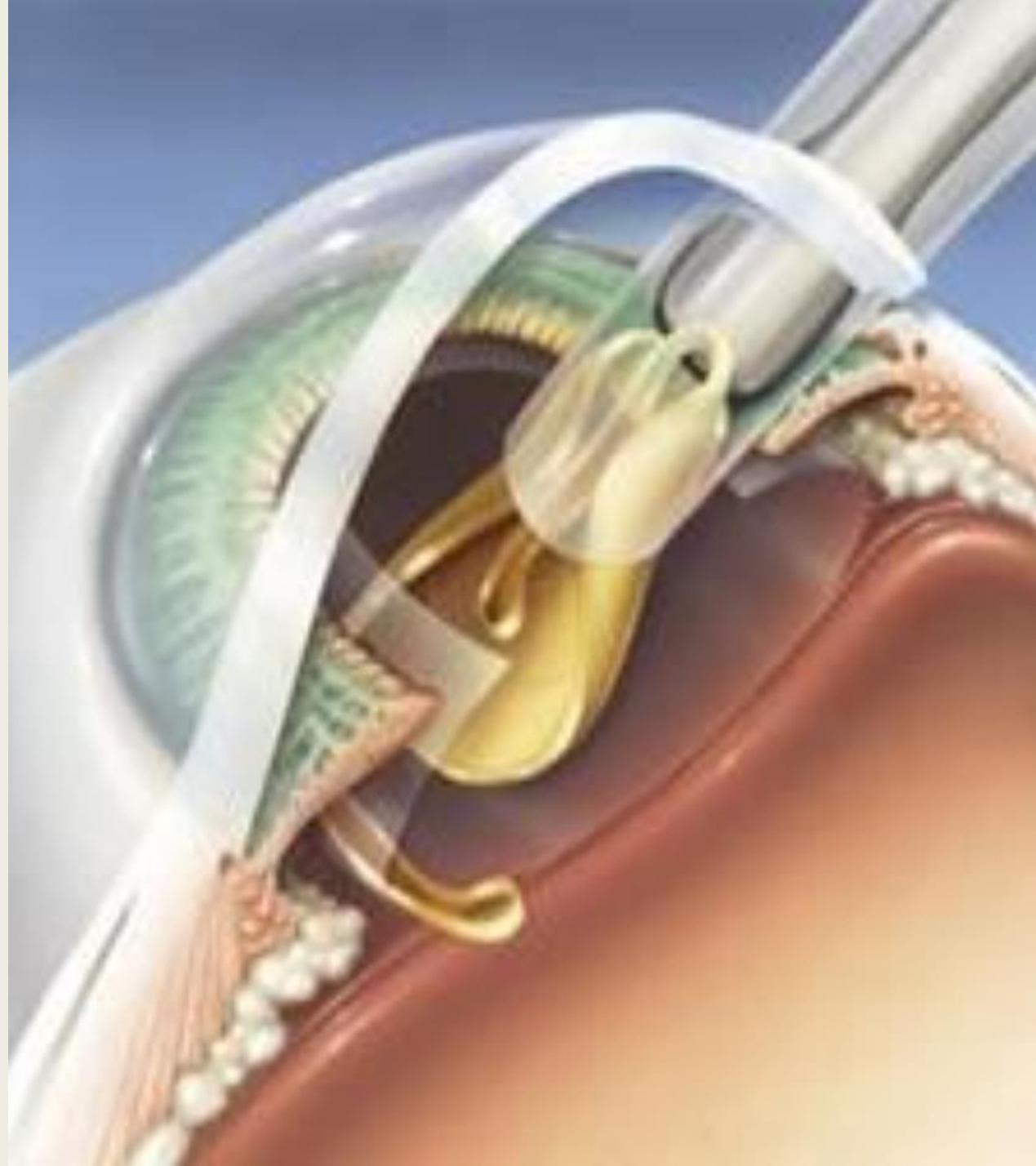


5. Emulsification of each quadrant



6. Cortical cleanup and insertion of Intra Ocular lens







Techniques

- Phaco and ECCE involves removal of the lenticular material **leaving part of the lens capsule mostly the posterior part** to give support for the artificial lens that will be implanted .
- ICCE removal of the **whole lens**

Compensation for the lens refractive power :

- Artificial intraocular lenses made of inert synthetic material
- Spectacle نظارة
- Contact Lenses

Post-Operative care

- Steroids (topical ,systemic)
- Antibiotics (topical , systemic)
- Near vision adds

Complications

1. Vitreous loss
2. Iris prolapse (early postoperative complication)
3. Endophthalmitis
4. Postoperative astigmatism
5. Macular edema
6. Retinal detachment
7. Opacification of the posterior capsule

Acute bacterial endophthalmitis

Incidence –about **1:100000**

Common causative organisms

- *Staph. Epidermidis*
- *Staph. Aureus*
- *Pseudomonas* sp.

Source of infection

- Bacterial flora is most frequent culprit
- Contaminated solutions and instruments
- Environmental flora including that of surgeon and operating room personnel



Iris prolapse

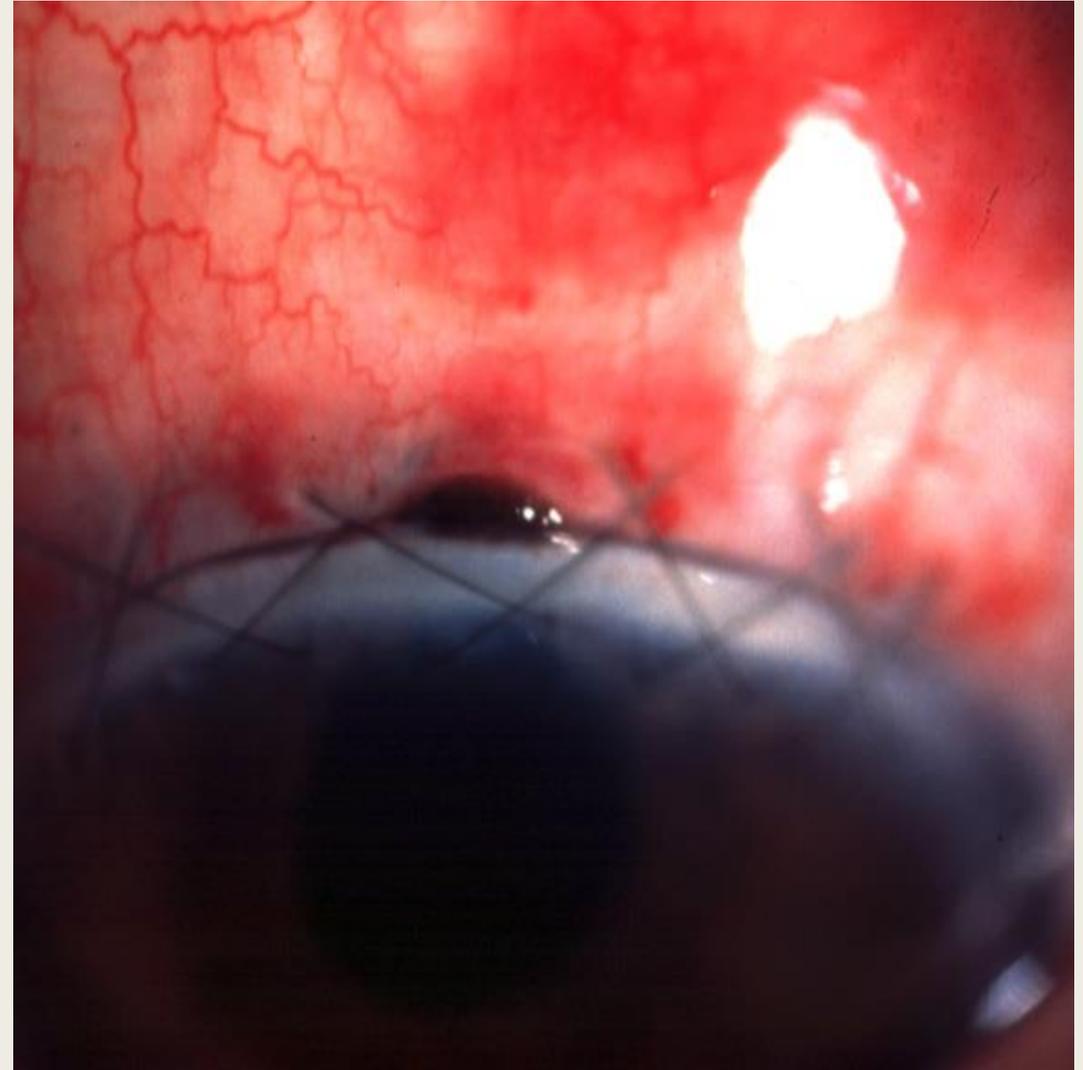
Early postoperative complications

Causes

- Usually inadequate suturing of incision
- Most frequently follows inappropriate management of vitreous loss

Treatment

- Excise prolapsed iris tissue
- Resuture incision





Thank you