

CATARACT



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INTRODUCTION

- A cataract is the **opacity of the lens** or cloudiness.
- The most common cataract is the **age related** or senile type. Senile cataracts usually begin around the age of **50 years**

DEFINITION:

An opacification of sufficient severity to impair the vision



Cataract



Normal Eye



**Eye with cataract
(cloud formation)**



RISK FACTORS

- Aging
- Associated ocular conditions
 - ⊕ Myopia (It is when the eye is **not able to focus properly on objects in the distance**)
 - ⊕ Retinal detachment (the retina separates from the layer underneath)
 - ⊕ Infection
- Toxic factors
 - ⊕ Ionizing radiation
 - ⊕ Aspirin
 - ⊕ Corticosteroids
 - ⊕ Cigarette smoking
 - ⊕ Chemical burns



■ Nutritional factors

- ⊕ Poor nutrition

■ Physical factors

- ⊕ Blunt trauma

- ⊕ Ultraviolet radiations in sunlight and x-ray

■ Systemic Disease and syndromes

- ⊕ Diabetes


- ⊕ Renal disorders

- ⊕ Musculoskeletal disorders



TYPES

CONGENITAL CATARACT:

- 33% of the cases **it's idiopathic**
 - **Hereditary causes:** Chromosomal disorder (trisomy 21), sticker syndrome, lowe's syndrome
 - **Maternal factors (DRIM):** **D**rugs like corticosteroids, **I**nfections such as rubella, toxoplasmosis, **R**adiation, **M**alnutrition etc. may lead to congenital cataract
 - **Foetal factors:** Oxygen deficiency, birth trauma, malnutrition & sometimes may be associated with other congenital factors
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TYPES

ACQUIRED

SENILE CATARACT: UDDAS H

U: UV radiation

D: Dietary factors deficiency

D: Dehydration crisis

A: Age >50 yrs

S: Smoking (denaturation of protein)

H: Hereditary

PRE-SENILE CATARACT: DAM H

D: DM

A: Atopic dermatitis

M: Myotonic dystrophy

H: Hereditary



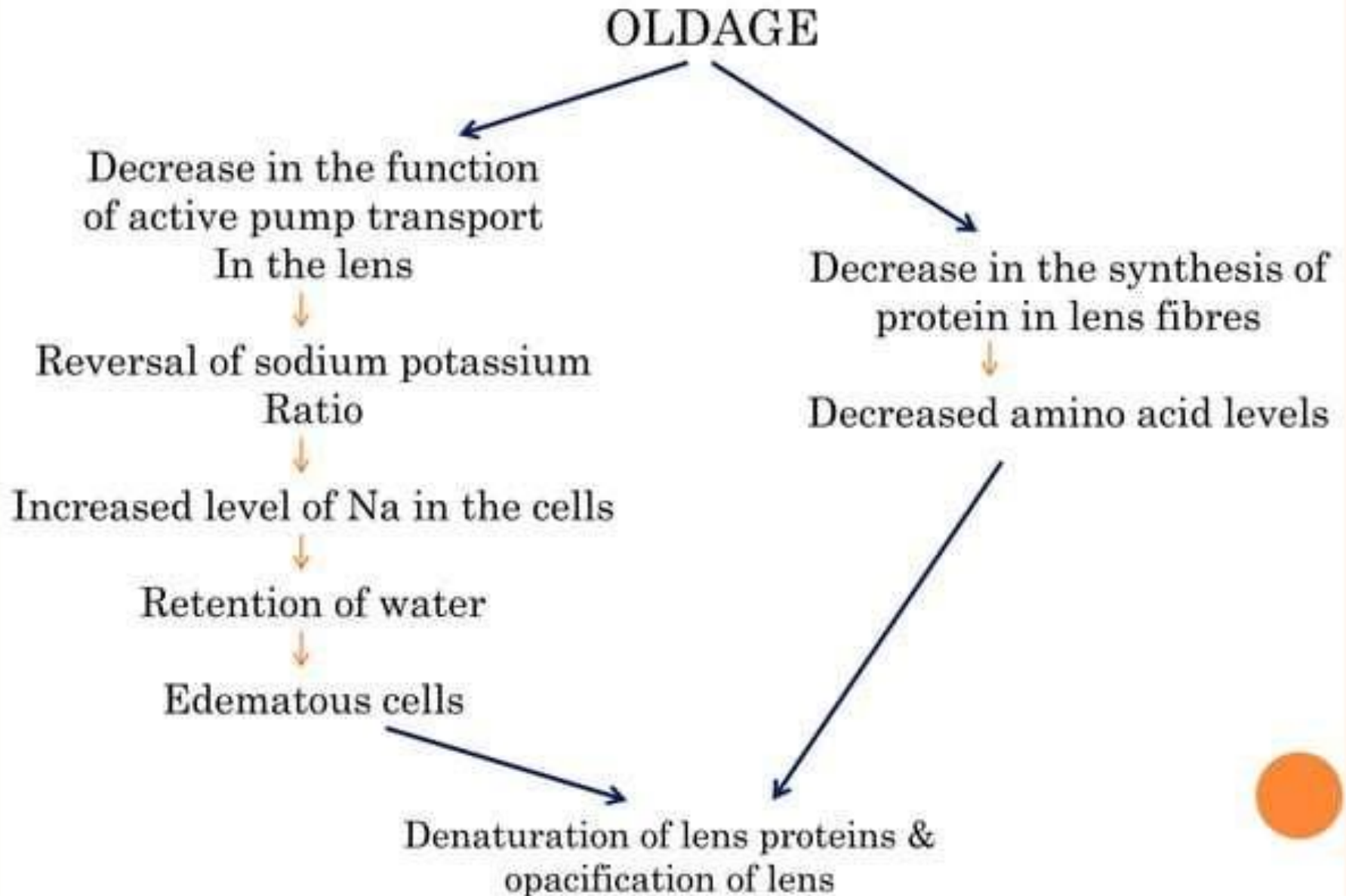
TYPE OF SENILE CATARACT

1. Cortical Senile cataracts

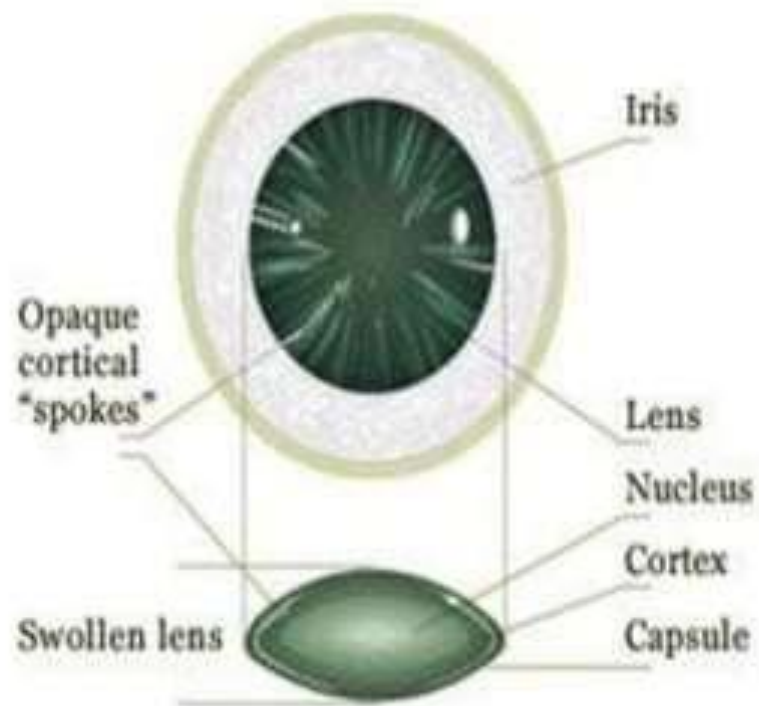
- **It's characterized by white, wedge-like opacities that start in the periphery of the lens and work their way to the center in a spoke-like fashion. They progress slowly and often do not cause severe loss of vision.**
- **Sunlight exposure is the risk factor for cortical cataracts.**



PATHOPHYSIOLOGY OF CORTICAL SENILE CATARACT



Cortical Cataract



TYPE OF SENILE CATARACT

2. Nuclear senile cataracts

- **Nuclear sclerotic cataracts are a result of progressive yellowing and hardening of the central lens (nucleus).**



PATHOPHYSIOLOGY OF CORTICAL SENILE CATARACT

Age related changes (nuclear sclerosis)+dehydration



Hardening of the lens



Degeneration of lens fibres



TYPE OF SENILE CATARACT

Posterior sub-capsular Cataract

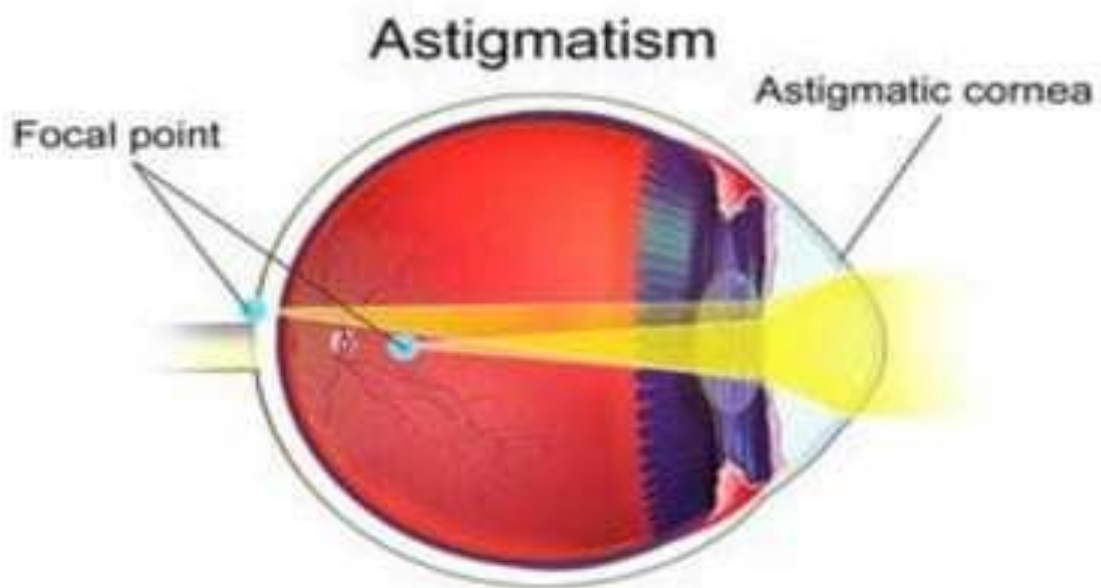
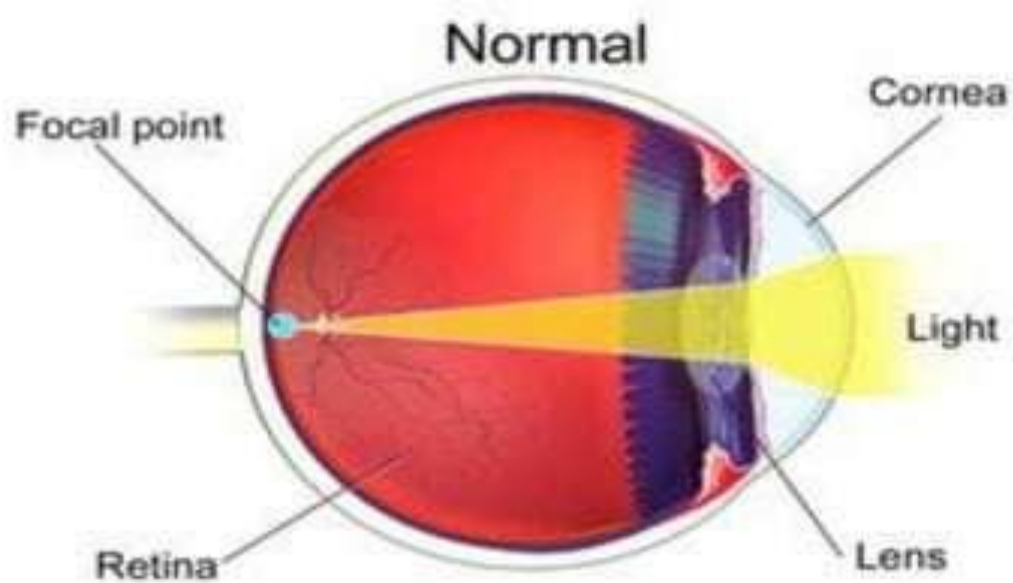
- **Posterior sub-capsular is cloudy area at the back of the lens capsule and cause visual loss.**
- **This type typically develops in younger people and is associated with prolonged corticosteroid use, diabetes, or ocular trauma.**



CLINICAL MANIFESTATIONS

- Painless, blurry vision
- The person experiences reduced contrast sensitivity, and reduced visual acuity
- **Astigmatism** (It occurs when the cornea is irregularly shaped or sometimes because of the curvature of the lens inside the eye)
- Monocular diplopia (double vision in only one eye)





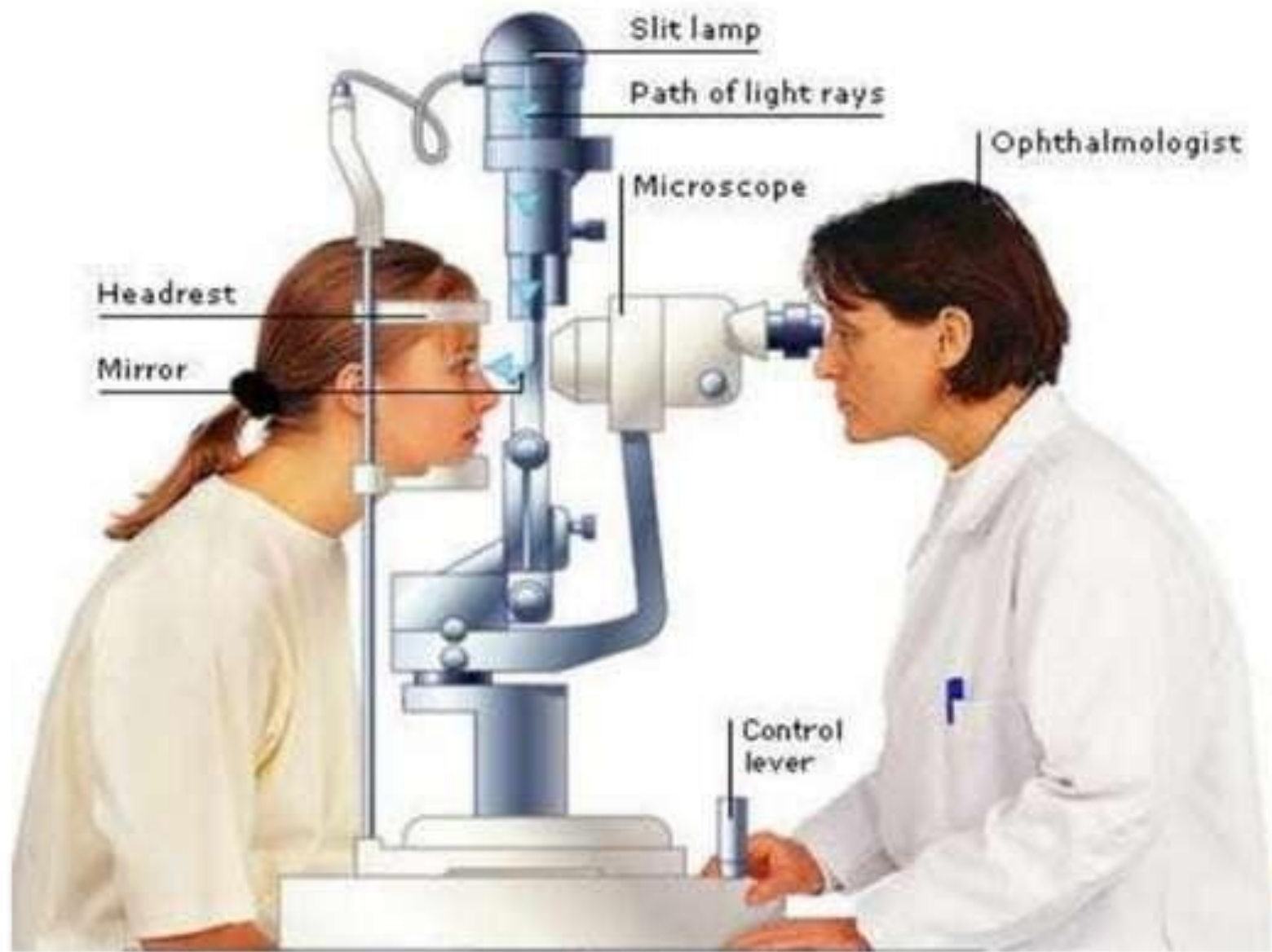
Astigmatic cornea distorts the focal point of light in front of and/or behind the retina



DIAGNOSTIC TESTS

- Snellen visual acuity test
- Ophthalmoscopy
- Slit lamp examination



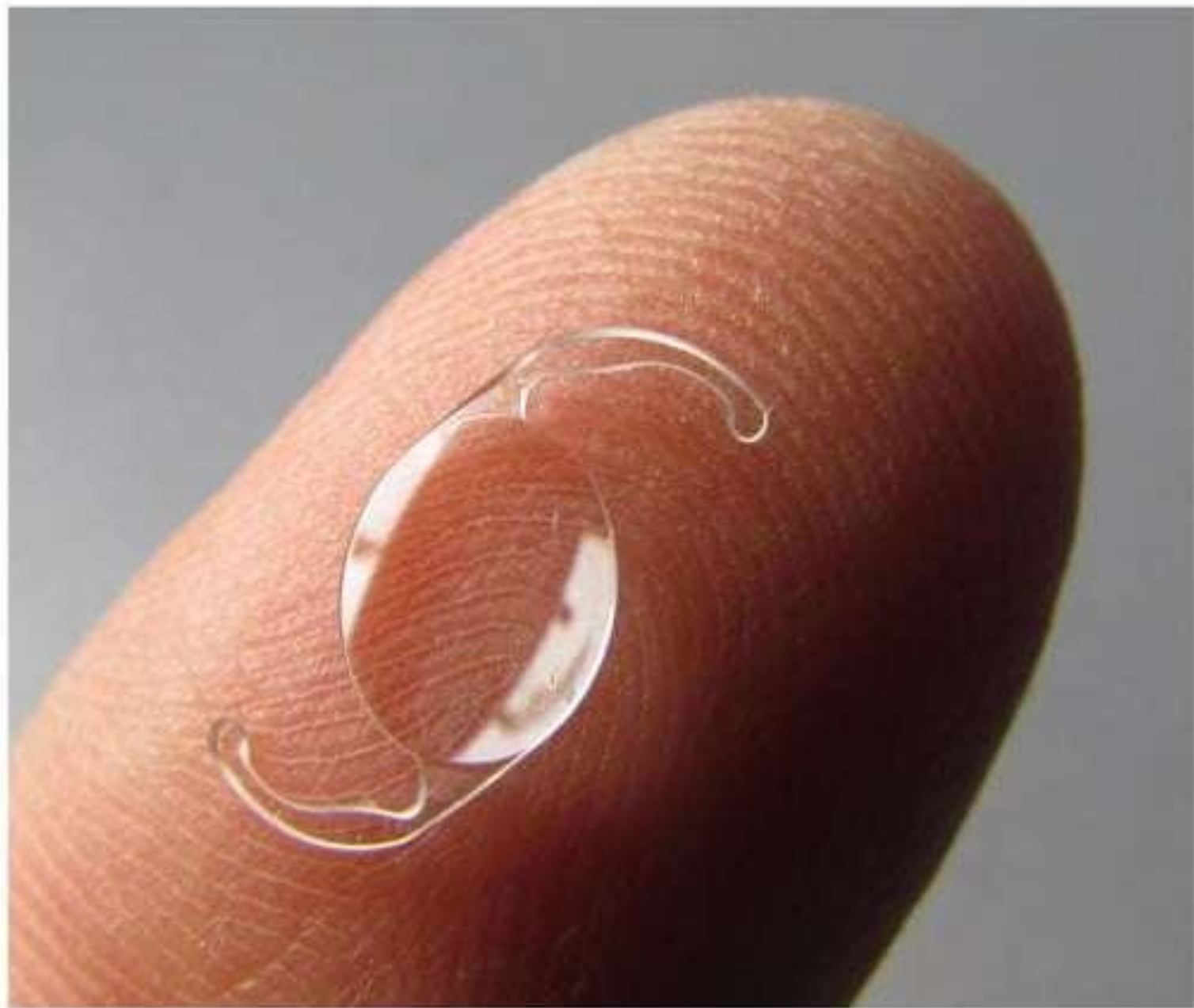


MANAGEMENT

- When both eyes have cataracts, one eye is treated first, with at least several weeks, preferably months, separating the two procedures.
- The surgeon may order preoperative antibiotic eyedrops. The patient should not have food or fluids for approximately 6 to 8 hours before surgery.
- The nurse will instill dilating eyedrops [mydriatics (Phenylephrine HCL) and cycloplegics (Tropicamide, Atropine)] and a non-steroidal anti-inflammatory eyedrop to reduce inflammation and to help maintain pupil dilation.

PHACOEMULSIFICATION

- In this method, a portion of the anterior capsule is removed, allowing extraction of the lens nucleus and cortex while the posterior capsule is left intact.
- An ultrasonic device is used to liquefy the nucleus and cortex, which are then suctioned out through a tube.
- The pupil is dilated to 7 mm or greater. The surgeon makes a small incision on the upper edge of the cornea and a viscoelastic substance (clear gel) is injected into the space between the cornea and the lens.
- This prevents space from collapsing and facilitates insertion of IOL. Because the incision is smaller, the wound heals more rapidly, and there is stabilization of refractive error and less astigmatism.



LENS REPLACEMENT

- After removal of the crystalline lens, the patient is referred to as aphakic. There are three lens replacement options: aphakic eyeglasses, contact lenses and IOL implants.
- Aphakic glasses, are rarely used. Peripheral vision is also limited.
- Contact lenses provide patients with almost normal vision, but because contact lenses need to be removed occasionally, the patient also needs a pair of aphakic glasses.
- Insertion of IOLs during cataract surgery is the most common approach to lens replacement. After cataract extraction, or phacoemulsification, the surgeon implants an IOL.

APHAKIC GLASSES



COMPLICATIONS OF CATARACT SURGERY


Immediate Preoperative

- Retrobulbar hemorrhage can result from retrobulbar infiltration of anesthetic agents. It can manifest as increased IOP, proptosis, lid tightness and subconjunctival hemorrhage with or without edema.

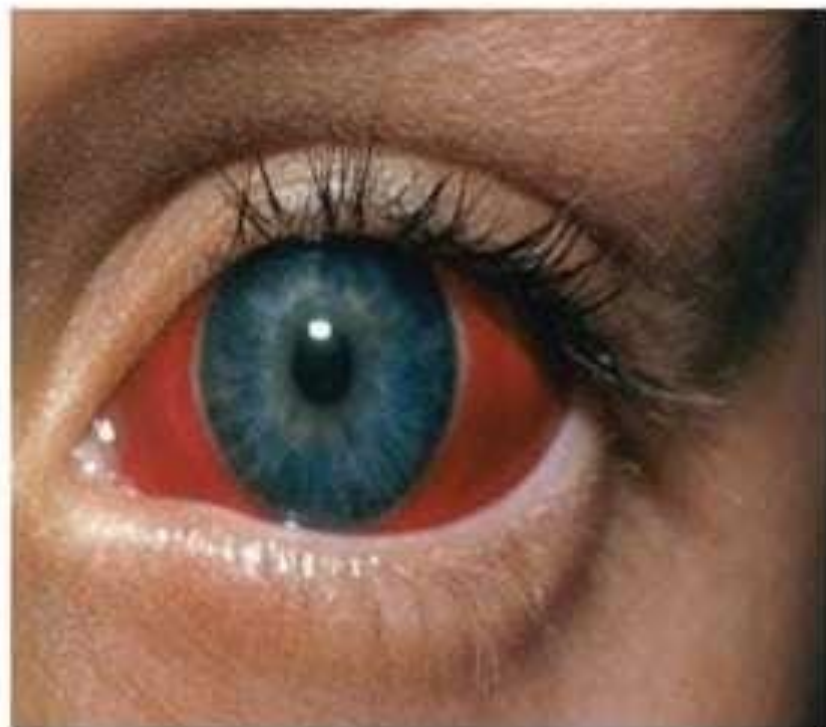
Intraoperative

- Rupture of the posterior capsule

Early postoperative

- Acute bacterial endophthalmitis characterized by marked visual loss, pain, lid edema.
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RETROBULBAR HEMORRHAGE



Late postoperative

- Suture related problems
- Malposition of the IOL
- Chronic endophthalmitis
- Opacification of the posterior capsule





Thank you!