

# CATARACT

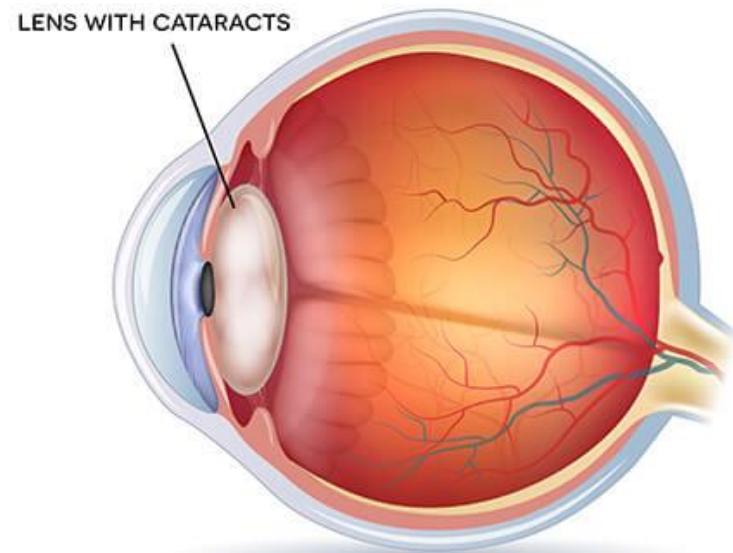
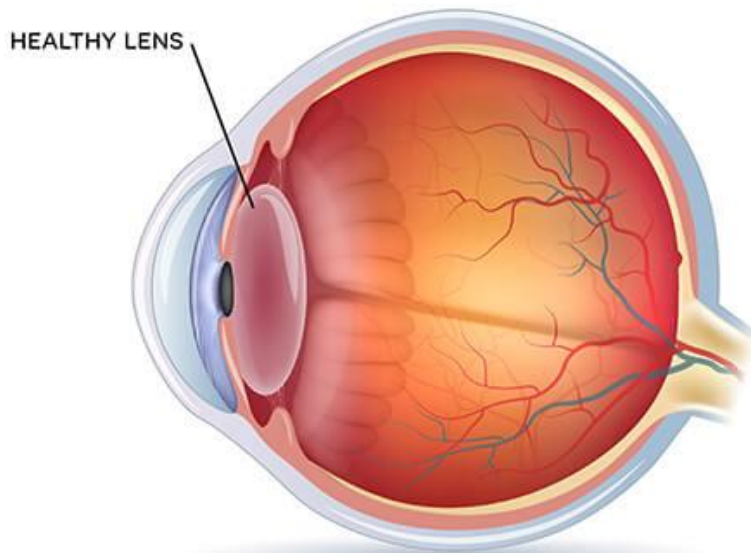


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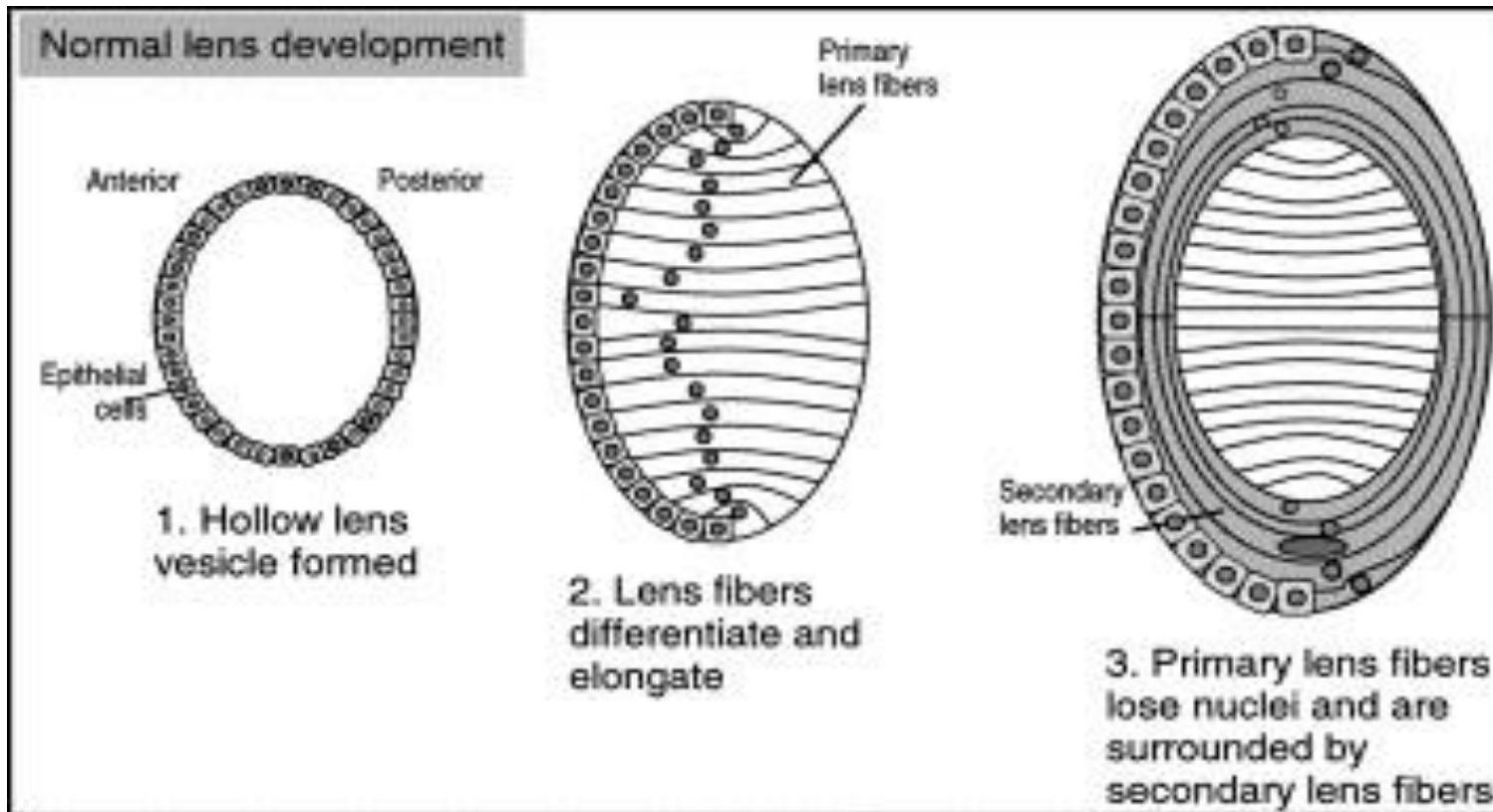
## DEFINITION:

- Opacity of crystalline lens matter / capsule

## CATARACTS



# EMBRYOLOGY OF LENS



# EMBRYOLOGY OF LENS

- **Embryonic nucleus** develop – 6week of gestation
- Arises from primitive post lens epithelium
- **Fetal nucleus-next** to develop from lens fibers from equatorial epithelial cells
- They stretch ant & post to around embryonic nucleus
- At birth both form most of lens fibers..
- Cortical Lens fiber Mostly develop postnatal



# CLASSIFICATION:

- Etiology
- Morphology
- Degree of maturity



# ETIOLOGY

- Congenital
- Age related / Senile
- Metabolic
  - DM
  - Hypocalcaemia
  - Wilson disease
  - Galactosemia
- Drug induced
  - Corticosteroids
  - Amiodarone
  - Phenothiazines



- Traumatic
- Inflammatory
  - Post intraocular surgery
  - Uveitis
- Disease associated
  - Down syndrome
  - Dystrophia Myotonica
  - Lowe's syndrome
  - Atopic dermatitis



# MORPHOLOGICAL CLASSIFICATION

- **ANTERIOR:-**

- Anterior polar
- Anterior pyramidal
- Anterior sub capsular cataract

- **POSTERIOR:-**

- Posterior polar cataract
- Posterior lenticonus
- Persistent fetal vasculature
- Posterior subcapsular cataract



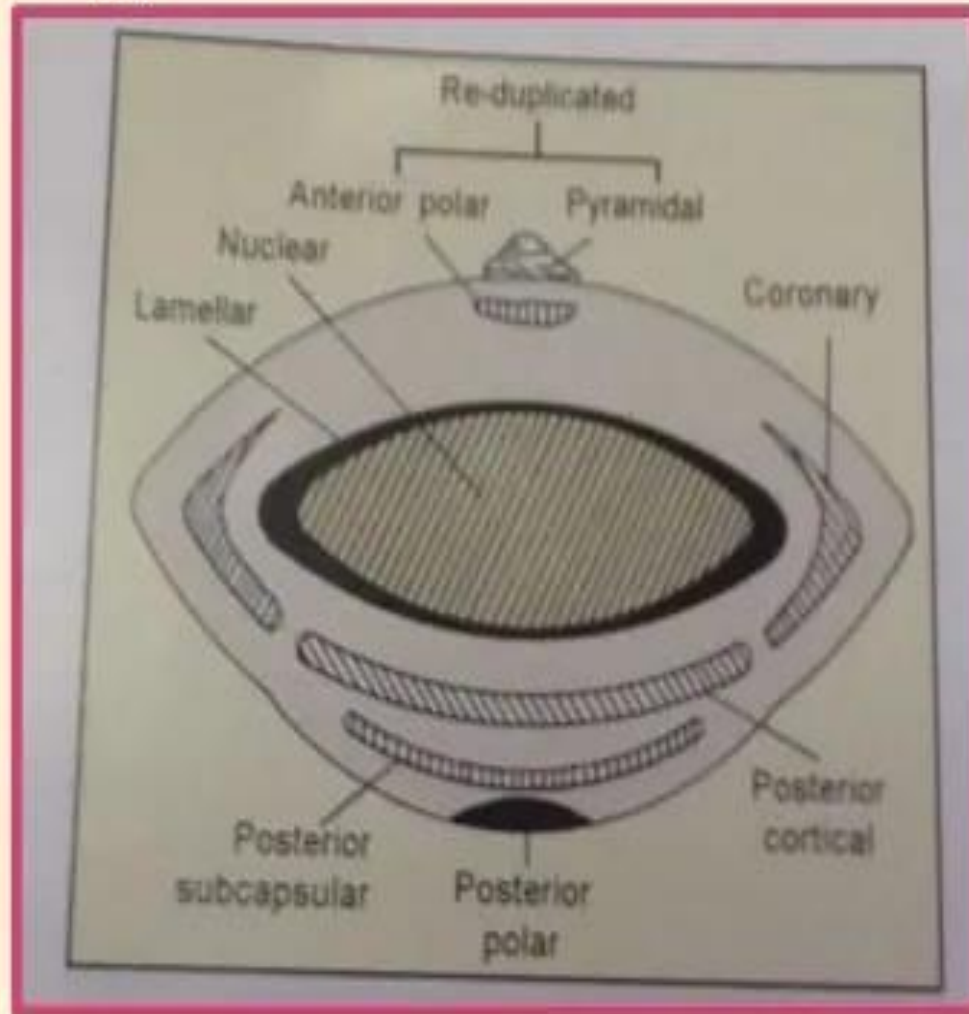


# MORPHOLOGICAL CLASSIFICATION

- **CENTRAL :-**
  - Lamellar cataract
  - Sutural cataract
  - Nuclear
  
- **DIFFUSE:-**
  - Blue dot cataract(CERULEAN)
  - Membranous cataract



# Morphology:



(Basak, SK., 2007)

## DEGREE OF MATURITY

- Immature.. Partially opaque
- Mature .. Completely opaque

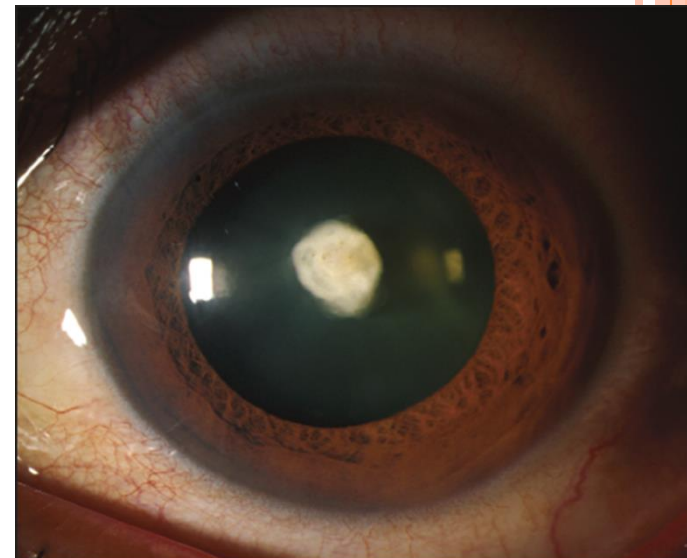


- Hypermature .. Shrunken and wrinkled capsule
- Morgagnian .. Nucleus sink inferiorly due to liquafication of cortex



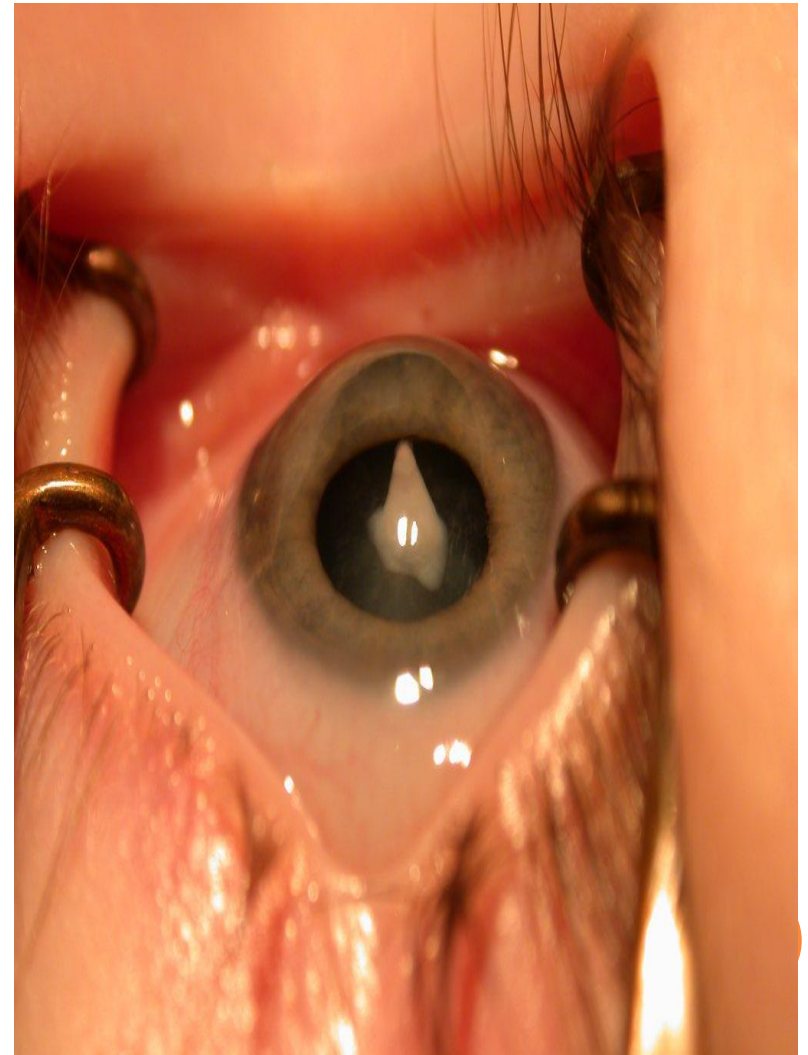
# ANTERIOR POLAR CATARACT

- White opacity Locate at center anterior Capsule
- Small 1-2mm.
- Derive from abnormal separation of lens vesicle from surface ectoderm.
- 1/3 bilateral
- 90% sporadic 10% AD



# ANTERIOR PYRAMIDAL CATARACT

- Bilateral . Mostly Sporadic
- Type of anterior polar cataract..
- Anterior capsular fibrosis
- Conical in shape Apex projected in A/C.
- 1-2mm cone opacity.



# ANTERIOR LENTICONUS

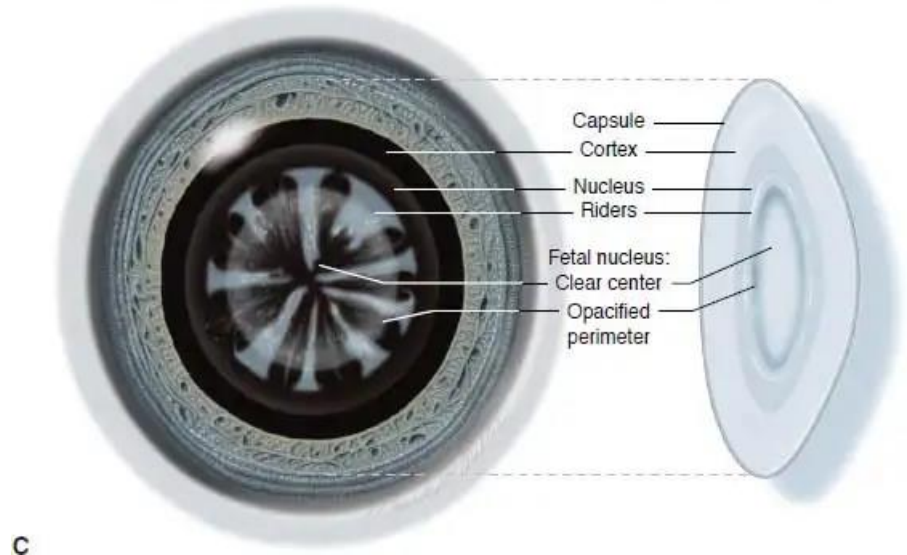
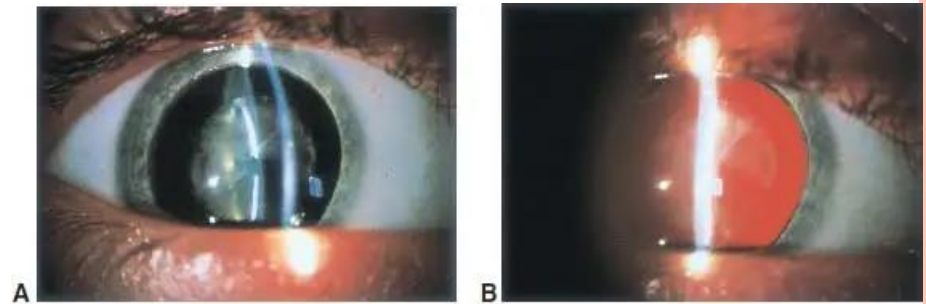
- This refers to a thinned-out central anterior capsule with or without anterior cortical opacities.
- Anterior lenticonus is said to be characteristic of Alports syndrome. Spontaneous rupture of the lens can occur, resulting in a hydrated Total cataract





# LAMELLAR CATARACT (ZONULAR)

- Most common congenital type
- Mostly Bilateral
- Opacification of specific zone/layer
- Layer of Opacification involving fetal nucleus surrounding clear center and surround in turn by layer of clear cortex





# LAMELLAR CATARACT

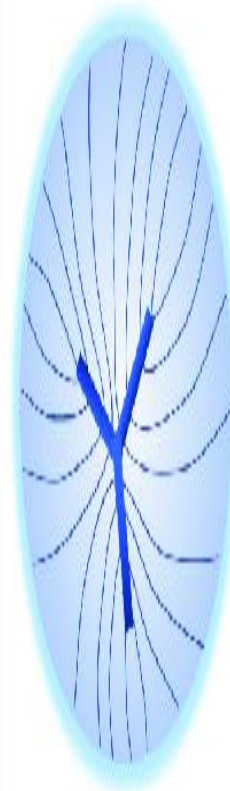
- RIDER OPACITIES:-  
Arcuate opacity  
straddle the equator...
- Spoke of wheel



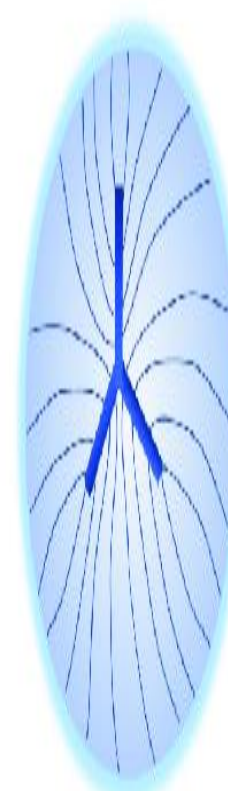
# SUTURAL CATARACT

- AD
- Type of cong nuclear cataract with opacity Along Y suture in fetal nucleus.
- Progressive
- Expand into cortex and embryonic nucleus

A. Anterior Y-Suture



B. Offset Posterior Y-Suture

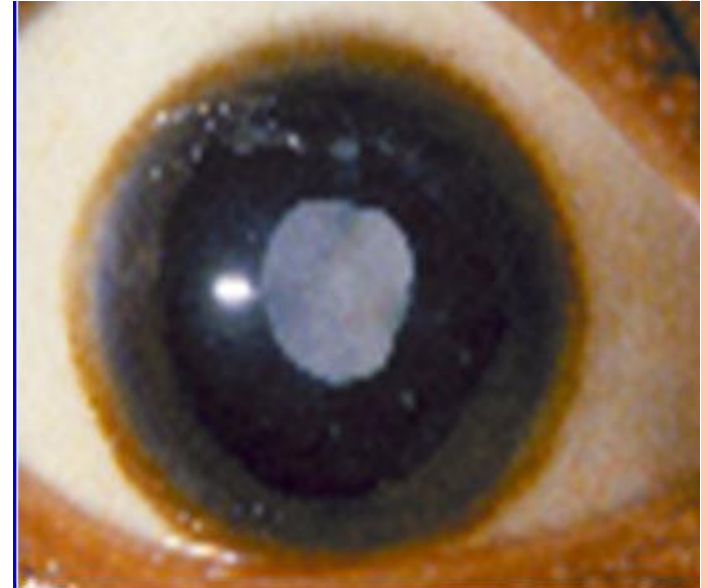


C. Sutural Cataract



# NUCLEAR CATARACT

- Opacity within embryonic nucleus or fetal nucleus..
- Mostly bilateral with AD
- Non progressive
- Congenital onset
- Common presentation intrauterine infections specially RUBELLA cataract



# PFV

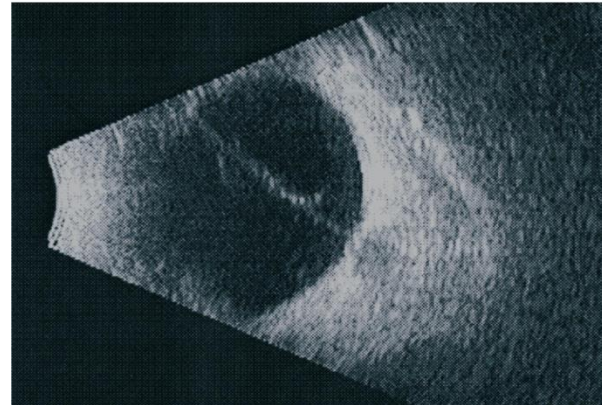
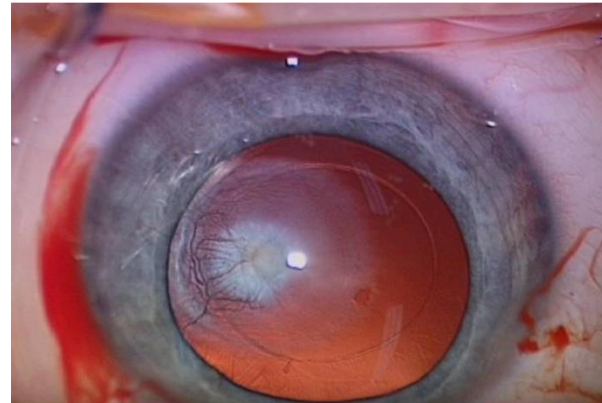
## PERSISTENT FETAL VASCULATURE

- Previously (Persistent hyperplastic primary vitreous)
- MOST COMMON CAUSE OF UNILATERAL CATARACT
- Isolated, sporadic
- Progressive. Anterior chamber shallowing causing Secondary glaucoma



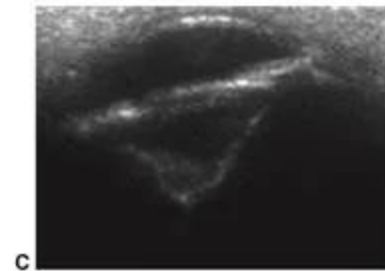
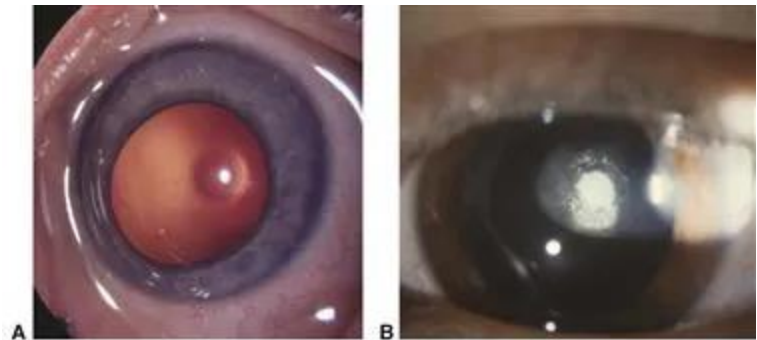
# PFV

- The lens opacities in patients with PFV are generally capsular and can be associated with *shrinkage, thickening, and vascularization of the capsule.*
- There may be a posterior plaque outside or involving the lens capsule with a clear lens that must be Treated as a cataract



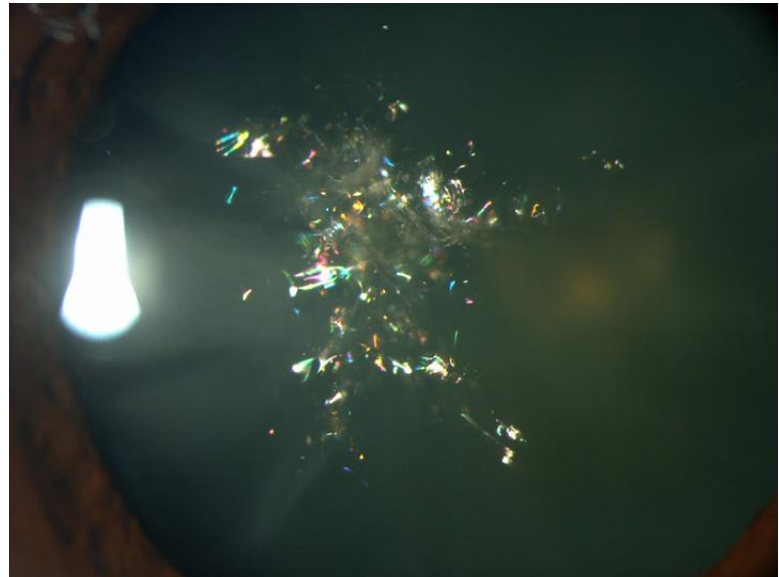
# POSTERIOR LENTICONUS

- Mostly uniLateral
- Posterior capsule is thin and bulges posteriorly..
- This usually occurs at the location where the hyaloid system attaches to the eye.
- The distortion can cause a localized area of myopic refraction
- May or may not be subcapsular cortical opacification



# CHRISTMAS TREE CATARACT

- Multiple.. small flecks in cortex
- Cataract with polychromatic luster..
- Appearance of various colors
- Associated with myotonic dystrophy, hypoparathyroidism





# OIL DROP CATARACT

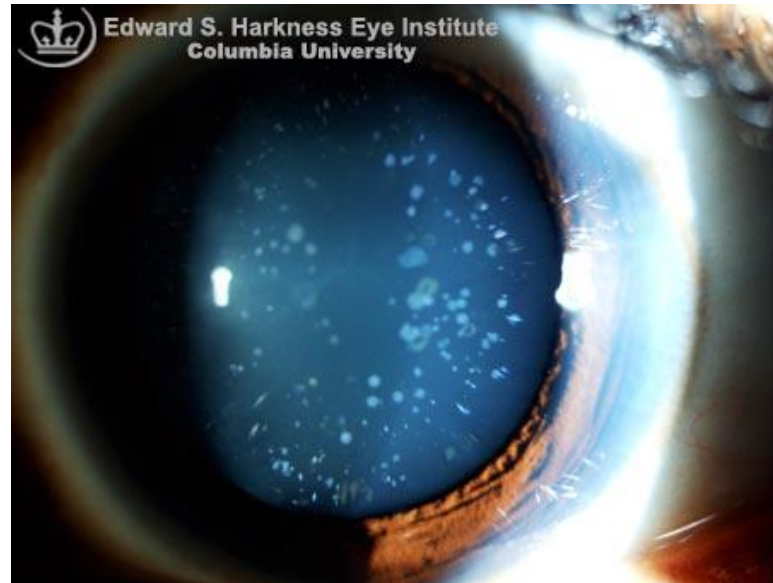
- Commonly seen in patients with galactosemia
- Bilateral
- Central aspect of Posterior lens cortex opacity with "oil droplet" appearance on retro illumination
- Restrict galactose from the diet will reverse cataract





# CERULEAN CATARACT

- Bilateral ..slowly progressing
- Scattered bluish-white opacities in cortex
- AD ..also in down syndrome
- Do not require cataract surgery



# ASSESSMENT

- History
- VA
- Refraction
- Pupil Reaction
- Regurge Test
- SLE
- Funduscopy
- B.P



# INVESTIGATIONS

- Biometry
- B.Scan
- HBS Ag
- Anti-HCV Ab
- FBS/RBS



# TREATMENT

- Glasses
- Surgery



# TYPES OF SURGERY

- ICCE
- ECCE
  - Conventional ECCE
  - Manual Small Incision Cataract Surgery(MSICS)
  - Phacoemulsification
  - Femto Laser Assisted Cataract Surgery(FLACS)





**THANK**

**YOU!**