

# Cataract surgery

## II



Post operative outcomes  
Pre-op assessment of high risk characteristics

Deepak Vayalambrone FRCOphth.

# Visual acuity



## ASCRS –

- 85.5% had 6/12 or better at 3/12
- 57.2% had 6/7.5 or better.

## European (ECOS)-

- 89% had 6/12 or better

## CND UK Post op vision 6/12 or better (6/6 or better)

- 91% (45.9%)
- Without comorbidity 94.7% (51%)
- With comorbidity 79.9% (30.2%)

## AAO (NEON)

- 89% had 6/12 or better
- Without comorbidity 96%

# Refractive



## ∞ ASCRS

∞ 74.6% were within 1D of target SE

## ∞ European (ECOS)

∞ Average induced astigmatism 0.59 D

∞ Induced astigmatism within 1D in 86%

## ∞ AAO (NEON)

∞ 78% within 1D of target SE

∞ *Posterior corneal astigmatism is the elephant in the room*

# The Cataract Patient Outcomes Research Team (PORT) study



- ❧ Pre-op features as independent predictors of improvement
  - ❧ younger age <65 y
  - ❧ less comorbidity
  - ❧ higher cataract symptom score and
  - ❧ worse preoperative VF-14 (measure of visual function) score
- ❧ Pre-op Snellen VA
  - ❧ Poor predictor of symptomatic improvement or
  - ❧ Self reported improvement in visual function



## VA Outcomes

170 out of 249 (68.3%) were 6/6 or better  
226 out of 249 (90.8%) were 6/9 or better  
246 out of 249 (98.8%) were 6/12 or better



249 out of 2275 procedures analysed

## Refractive Outcomes

156 out of 218 (71.6%) were within 0.5D of aimed sphere  
207 out of 218 (95.0%) were within 1D of aimed sphere  
217 out of 218 (99.5%) were within 2D of aimed sphere



218 out of 2275 procedures analysed

## Complications

10 out of 2276 (0.4%) PC ruptures

- 3 (0.1%) with vitreous loss
- 7 (0.3%) without vitreous loss

2276 phacos (with or without IOL) analysed

# High risk characteristics



- ❧ Corneal opacity
  - ❧ Reduced visibility
  - ❧ Worsening clarity
  - ❧ Co-existing pathology



# High risk characteristics



- ❧ Deeply set eye
- ❧ Narrow lid fissure
- ❧ Prominent brow
  
- ❧ Reduced visibility
- ❧ Poor access to the limbus
- ❧ Pooling of irrigation fluid
- ❧ Wound deformation
- ❧ Wound leakage
  
- ❧ **Bacterial colonisation**



# High risk characteristics



## Dense brown nuclear cataract

- ❧ Concomitant zonular laxity
- ❧ Intraoperative miosis
- ❧ Little cortex to protect the capsule
- ❧ Increased phaco time
- ❧ Increased risk of post-op oedema
- ❧ Thermal and mechanical injury
- ❧ Risk of PC rupture and zonular dehiscence



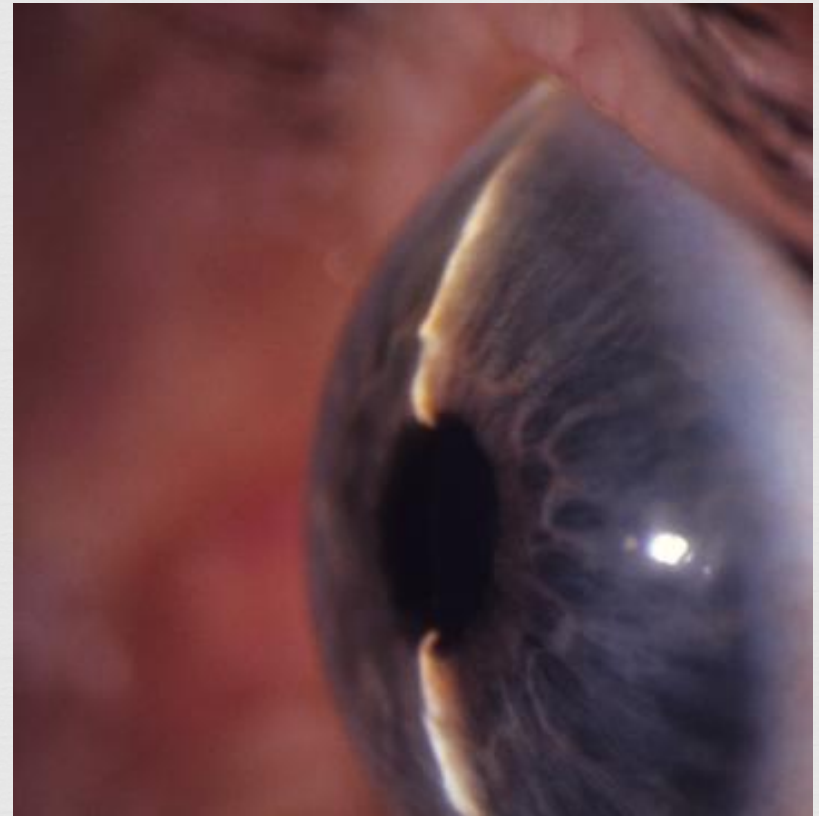


# High risk characteristics



## ❧ High hypermetropia

- ❧ *Shallow AC*
- ❧ *Risk of endothelial trauma*
- ❧ *Risk of iris trauma/prolapse*
- ❧ *Inaccurate IOL power*
  - ❧ *Use Haigis if AL <22mm*
- ❧ *Suprachoroidal effusion*



# High risk characteristics



## ❧ HIGH MYOPIA

- ❧ Decreased ocular rigidity
  - ❧ Difficulty sealing the wound
  - ❧ Increased risk of RD
  - ❧ Zonule weakness
- 
- ❧ AC depth fluctuation
    - ❧ Reverse pupillary block
- 
- ❧ Difficult IOL power calculation
    - ❧ (Posterior staphyloma)

# High risk characteristics



## ❧ HIGH MYOPIA

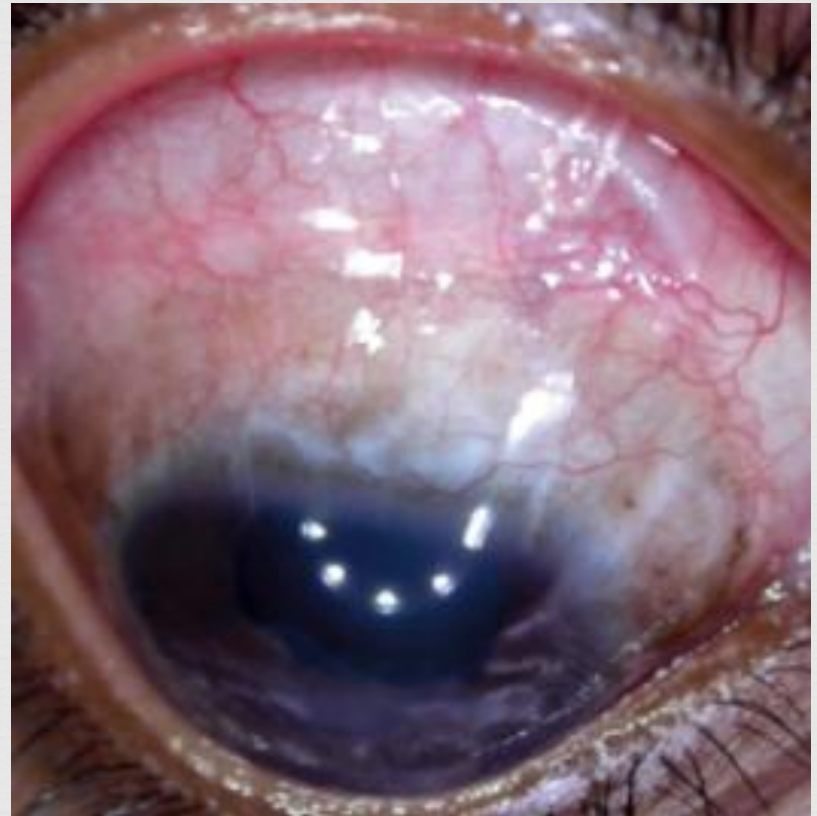
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  - ❧ Reverse pupillary block
  
- ❧ Difficult IOL power calculation
  - ❧ (Posterior staphyloma)



# High risk characteristics



- ❧ Prior glaucoma filtration surgery
- ❧ Leak via bleb during surgery
- ❧ Bleb failure following surgery
- ❧ Postoperative hypotony
- ❧ Zonular laxity
- ❧ *May need concomitant 5FU/MMC*

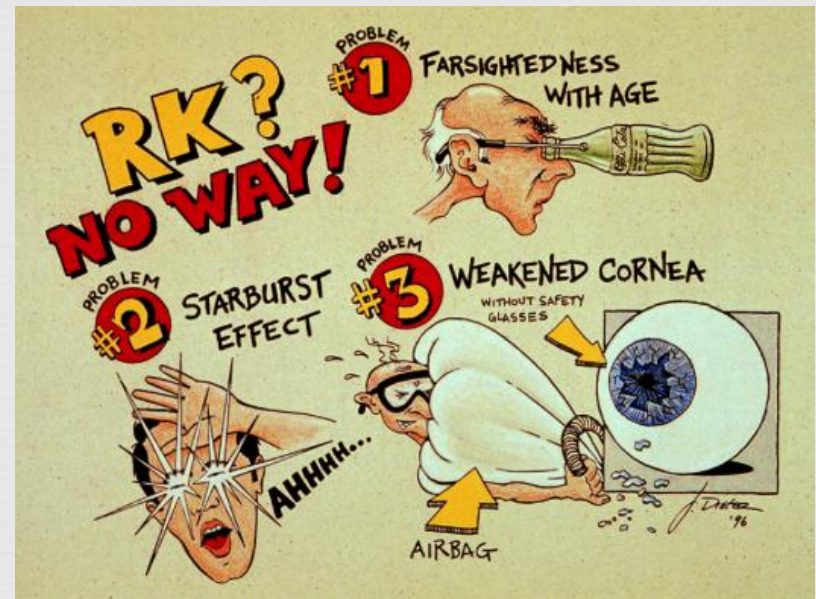


# High risk characteristics



## ❧ Prior keratorefractive surgery

- ❧ IOL power calculation
- ❧ Transient hyperopic shift (RK)
- ❧ Dehiscence of RK incision
- ❧ Irregular astigmatism
- ❧ Corneal aberrations with glare and haloes



# High risk characteristics



## ❧ Prior Vitrectomy

- ❧ Conjunctival scarring
- ❧ Intraop AC depth fluctuation
- ❧ Intraoperative miosis
- ❧ Increased nuclear sclerosis
- ❧ Posterior capsule plaques
- ❧ Weak lens capsule and zonules

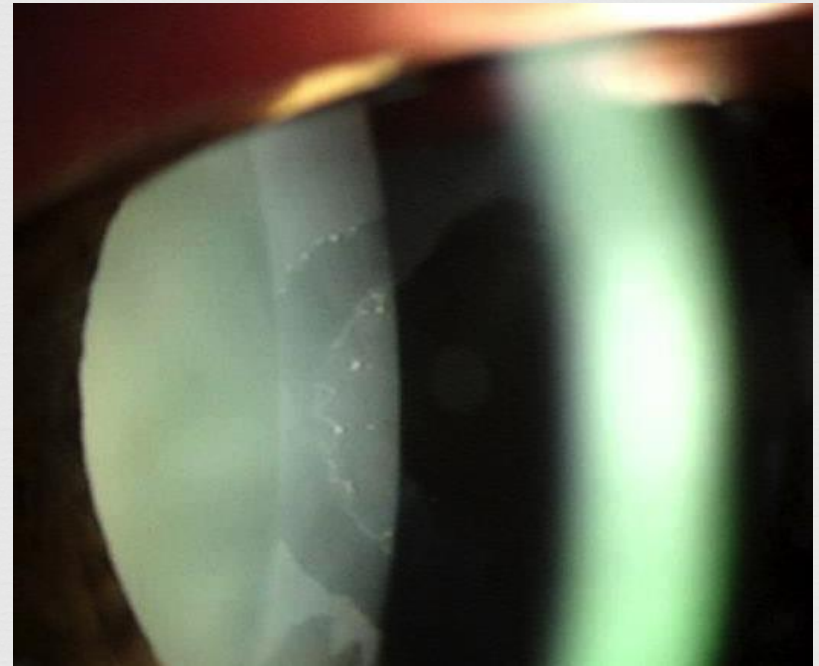


# High risk characteristics



## ☞ PXF

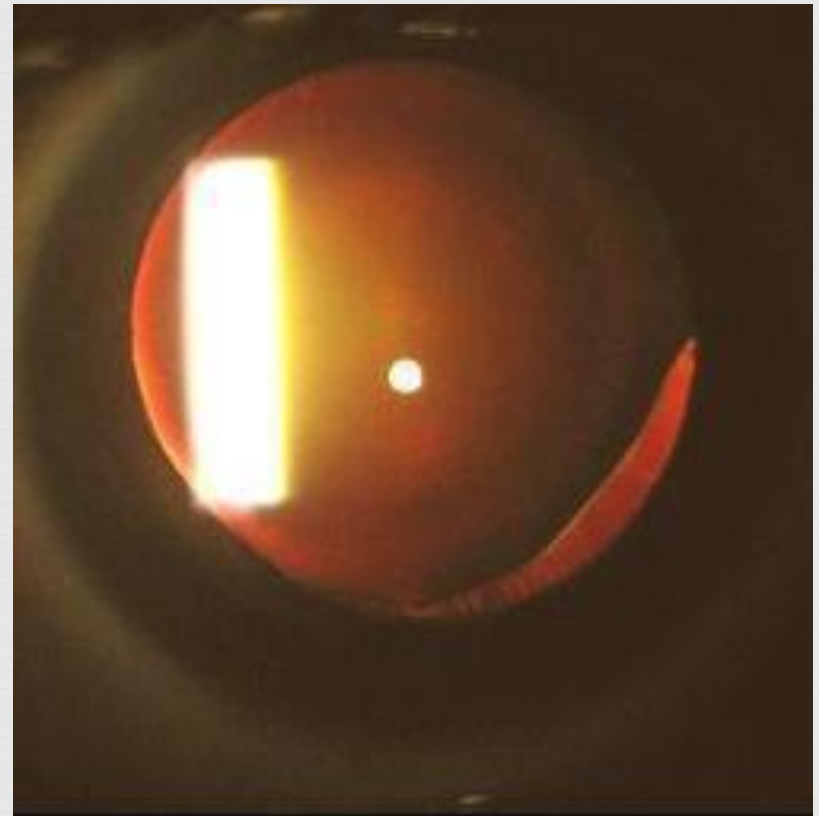
- ☞ Small pupil
- ☞ Posterior synechiae
- ☞ Subluxation of lens
- ☞ Increased post op iritis
- ☞ Glaucoma



# High risk characteristics



- ❧ Zonular laxity/ dehiscence
- ❧ (e.g., trauma)
  - ❧ Phacodonesis
  - ❧ Vitreous prolapse
  - ❧ Capsular rupture
  - ❧ Retained lens fragments
  - ❧ Fluid misdirection syndrome
  - ❧ Post-op IOL decentration
  - ❧ Risk of radial rhexis tear
  - ❧ Capsular contraction
  - ❧ Late IOL/capsular bag decentration or dislocation





# High risk characteristics



- ⌘ White cataract
  - ⌘ Difficult rhexis
  - ⌘ Lens intumescence
  - ⌘ Radial rhexis tear



# High risk characteristics



- ∞ Shallow AC
  - ∞ Iris injury
  - ∞ Iris prolapse
  - ∞ Post-op corneal edema



# High risk characteristics



❧ Relative anterior  
microphthalmos

❧ Damage to iris, cornea,  
and posterior capsule

❧ IOL power inaccuracy

❧ Posterior polar cataract

❧ Defective PC

# High risk characteristics



- ❧ Posterior synechiae
  - ❧ Intraoperative miosis
  - ❧ Prolonged postop inflammation
  - ❧ Inflammatory deposits on IOLs
  - ❧ Iris bleeding



# High risk characteristics



Tamsulosin and other  
other alpha blockers





## COMING UP

INTRAOPERATIVE COMPLICATIONS AND PITFALLS TO AVOID