COMPLICATIONS OF CATARACT SURGERY

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1. Operative complications

- Vitreous loss
- Posterior loss of lens fragments
- Suprachoroidal (expulsive) haemorrhage

2. Early postoperative complications

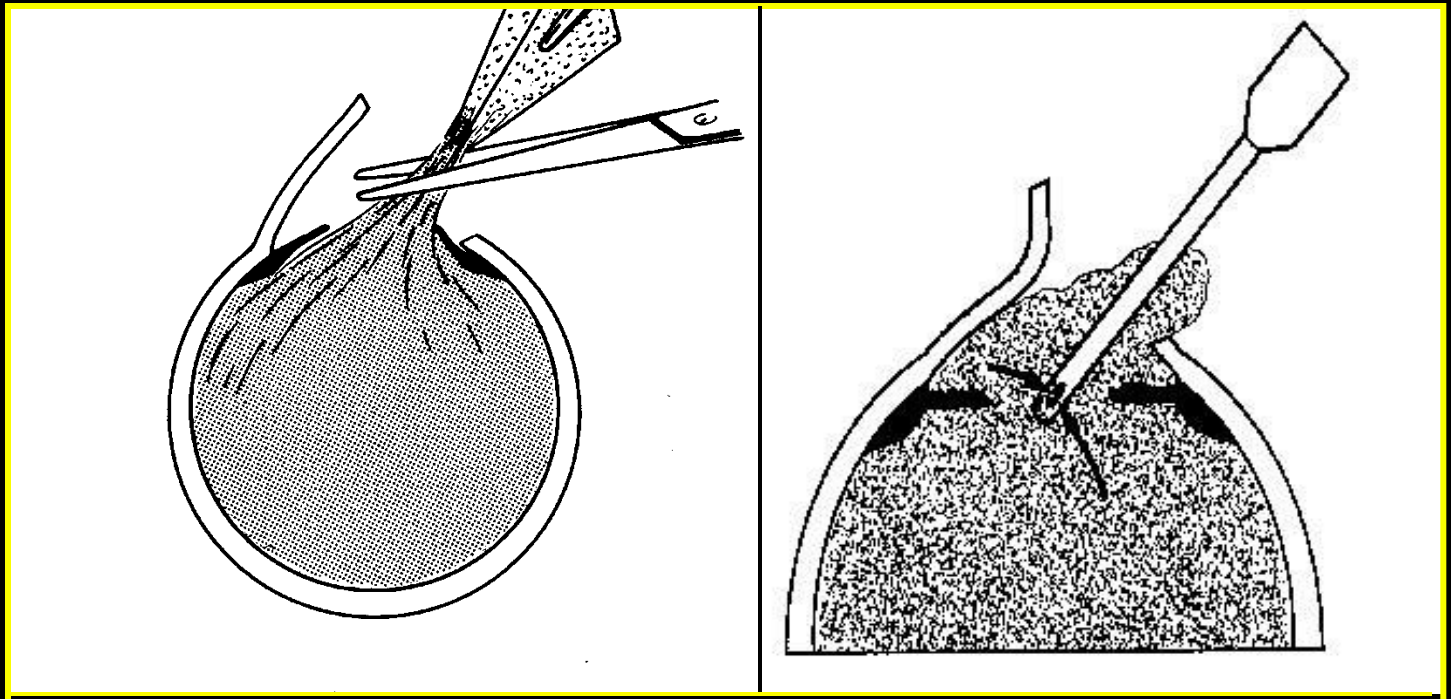
- Iris prolapse
- Striate keratopathy
- Acute bacterial endophthalmitis

3. Late postoperative complications

- Capsular opacification
- Implant displacement
- Corneal decompensation
- Retinal detachment
- Chronic bacterial endophthalmitis

Operative complications of vitreous loss

Management

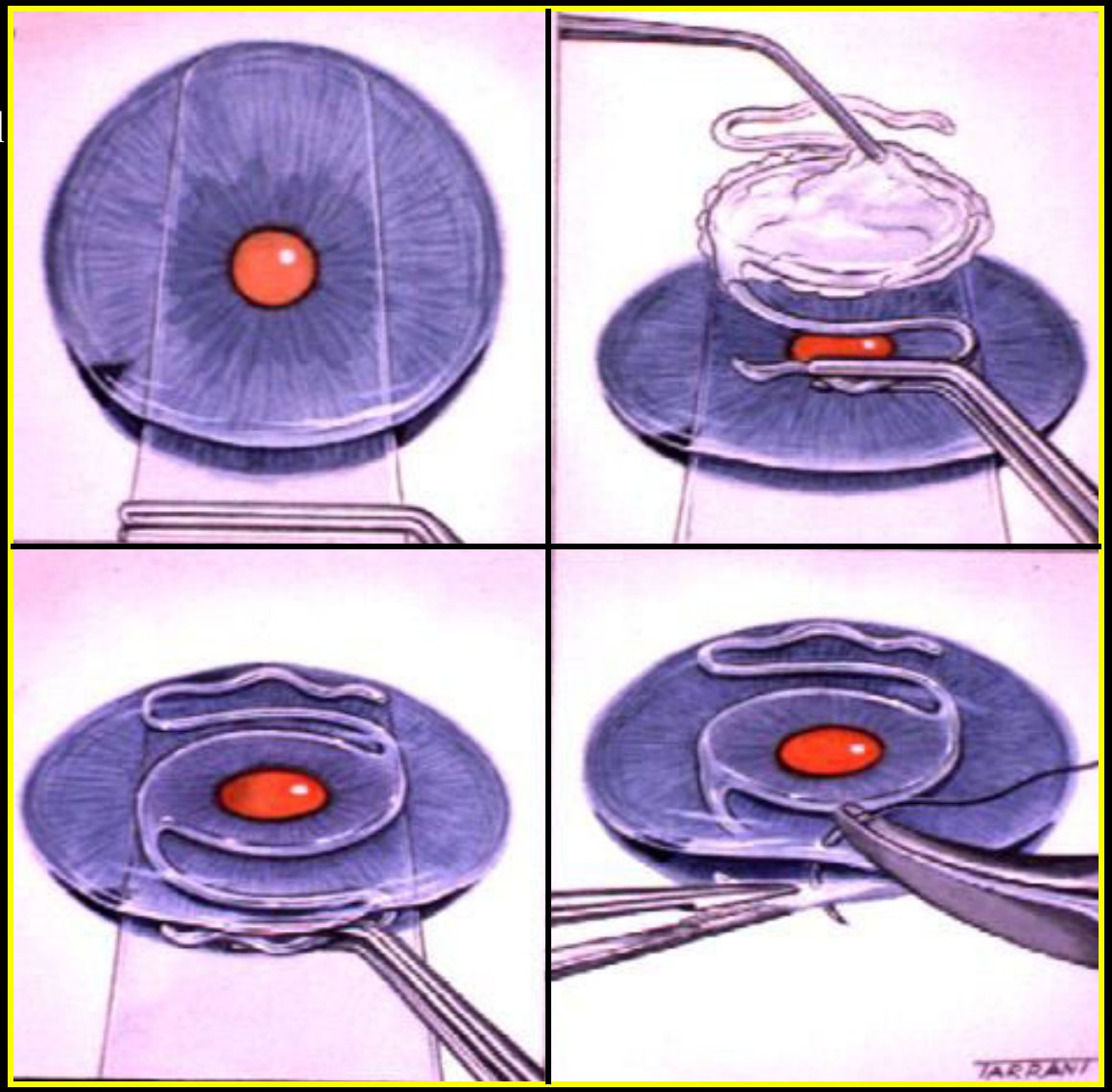


Sponge or automated anterior vitrectomy
Insertion of PC-IOL if adequate casular support present

Insertion of AC-IOL

If adequate capsular support absent

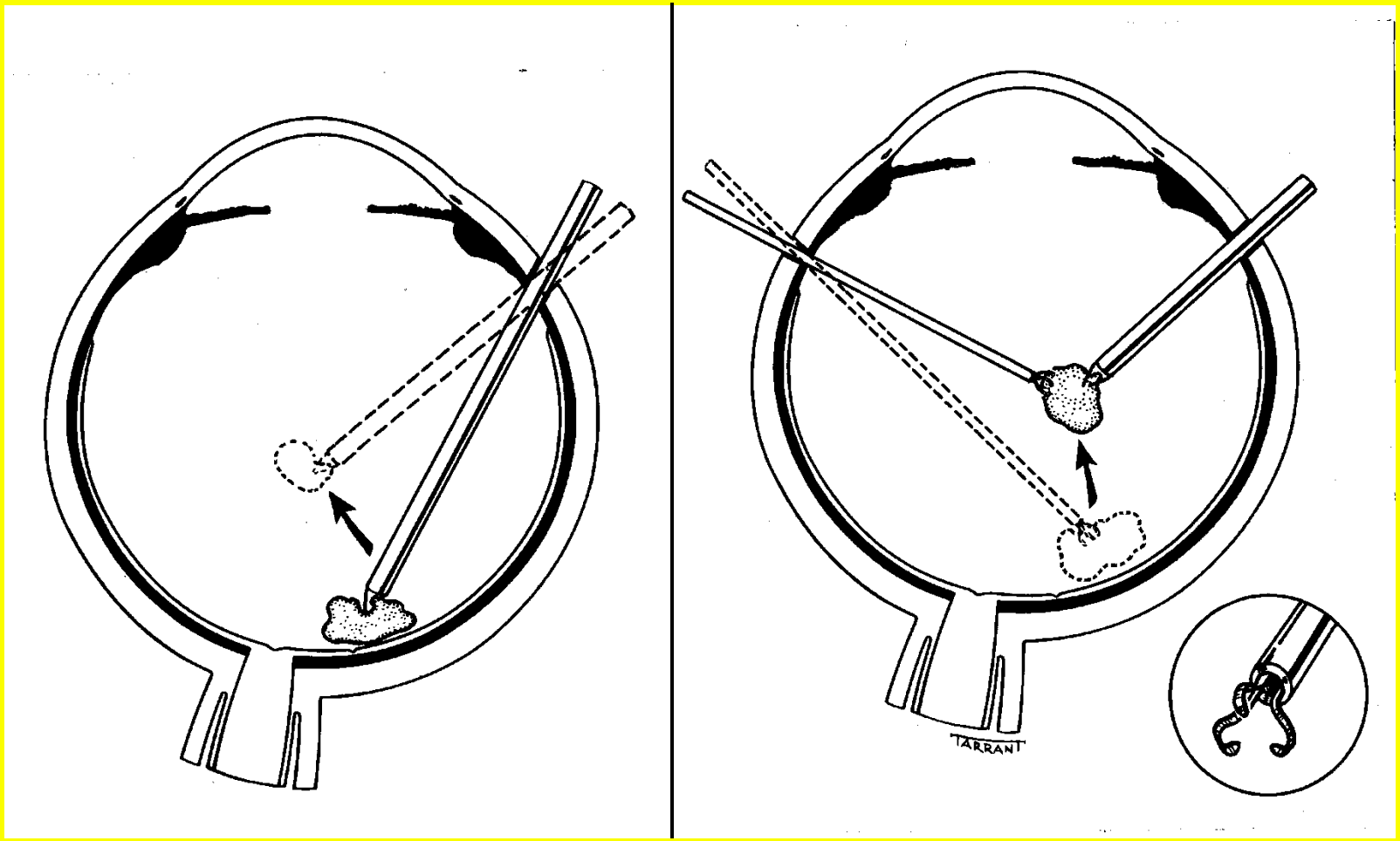
1. Constriction of pupil
2. Peripheral iridectomy
3. Glide insertion



4. Coating of IOL with viscoelastic substance
5. Insertion of IOL
6. Suturing of incision

Management of posterior loss of lens fragments

Fragments consisting of 25% or more of lens should be removed

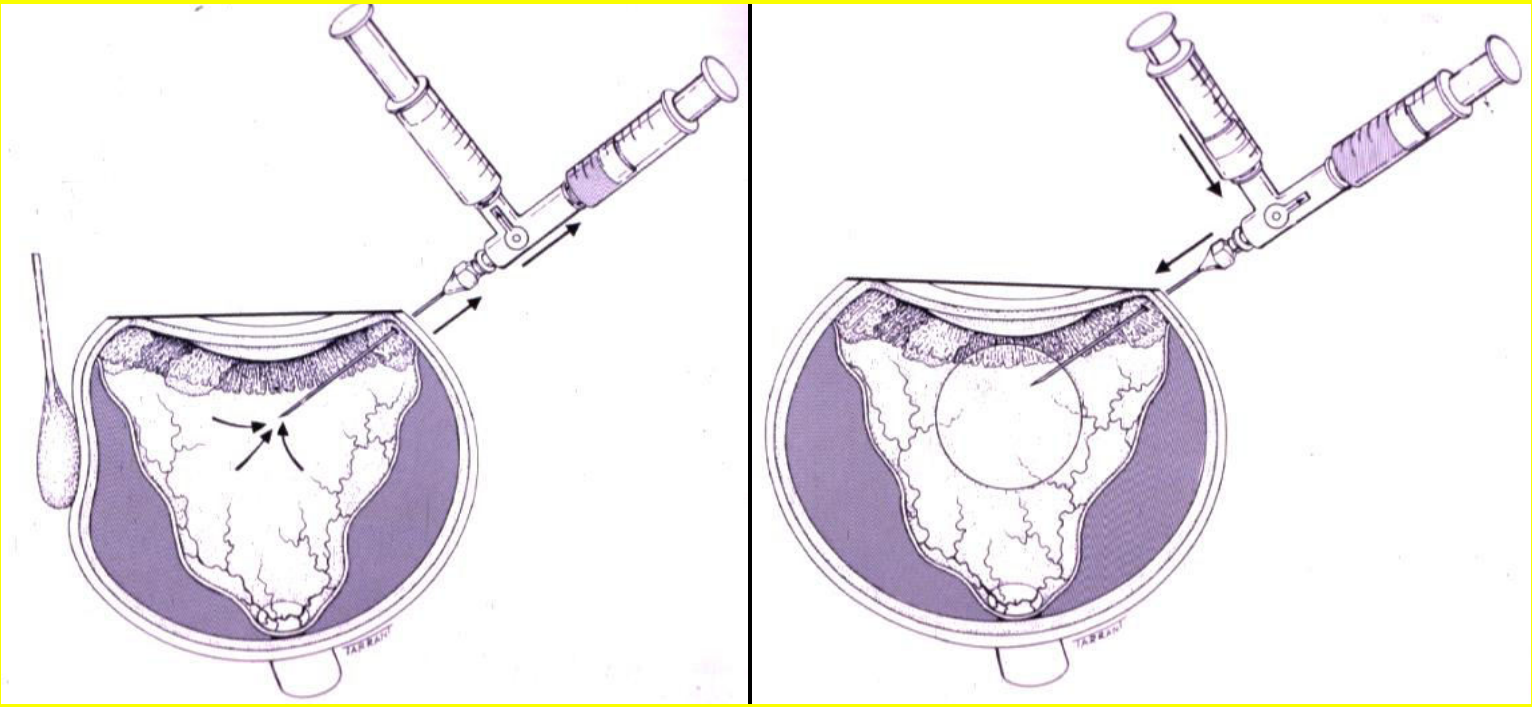


Pars plana vitrectomy and removal of fragment

Management of suprachoroidal (expulsive) haemorrhage

Close incision and administer hyperosmotic agent

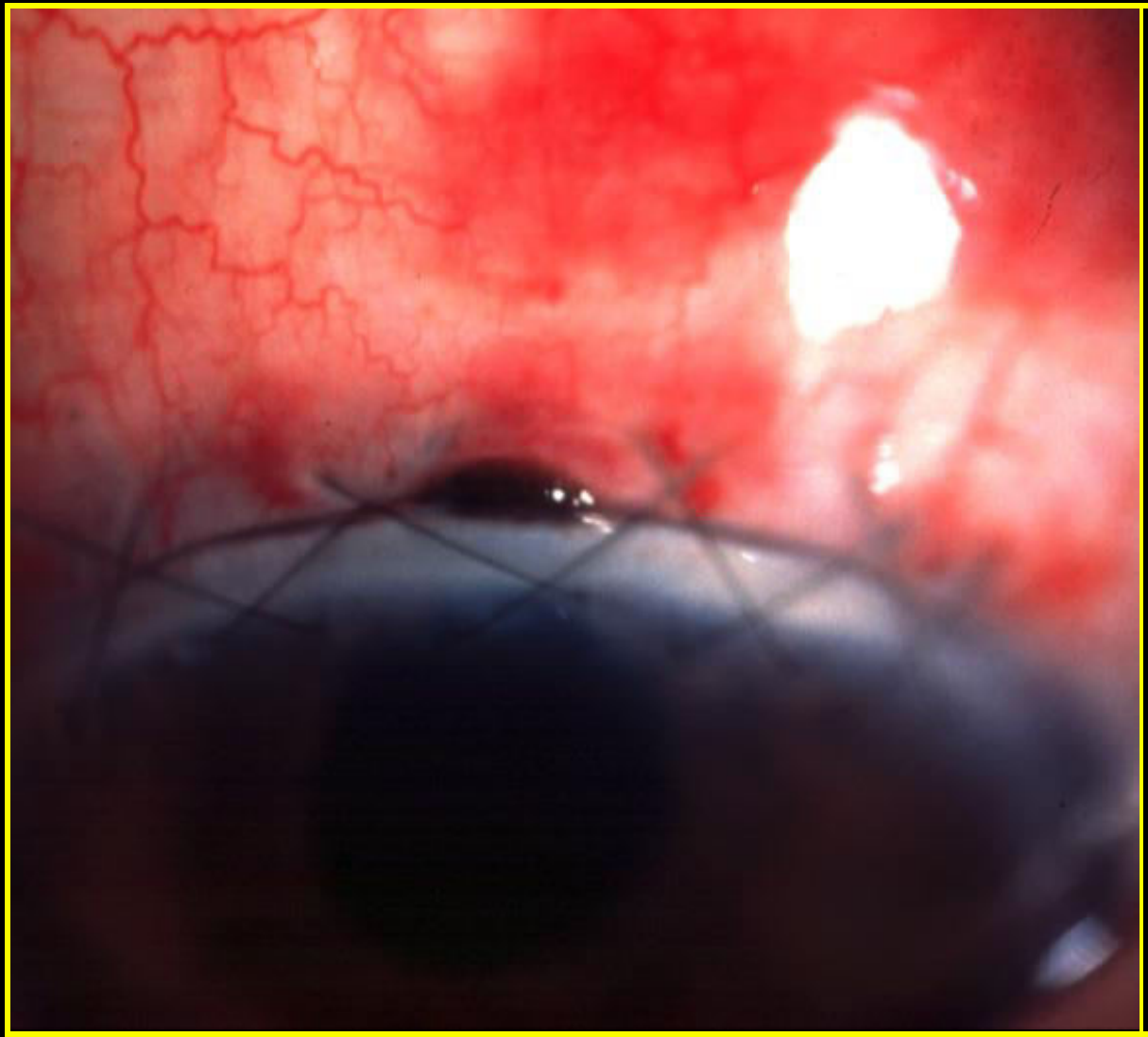
Subsequent treatment after 7-14 days



- **Drain blood**
- **Pars plana vitrectomy**
- **Air-fluid exchange**

Early postoperative complications

Iris prolapse



Cause

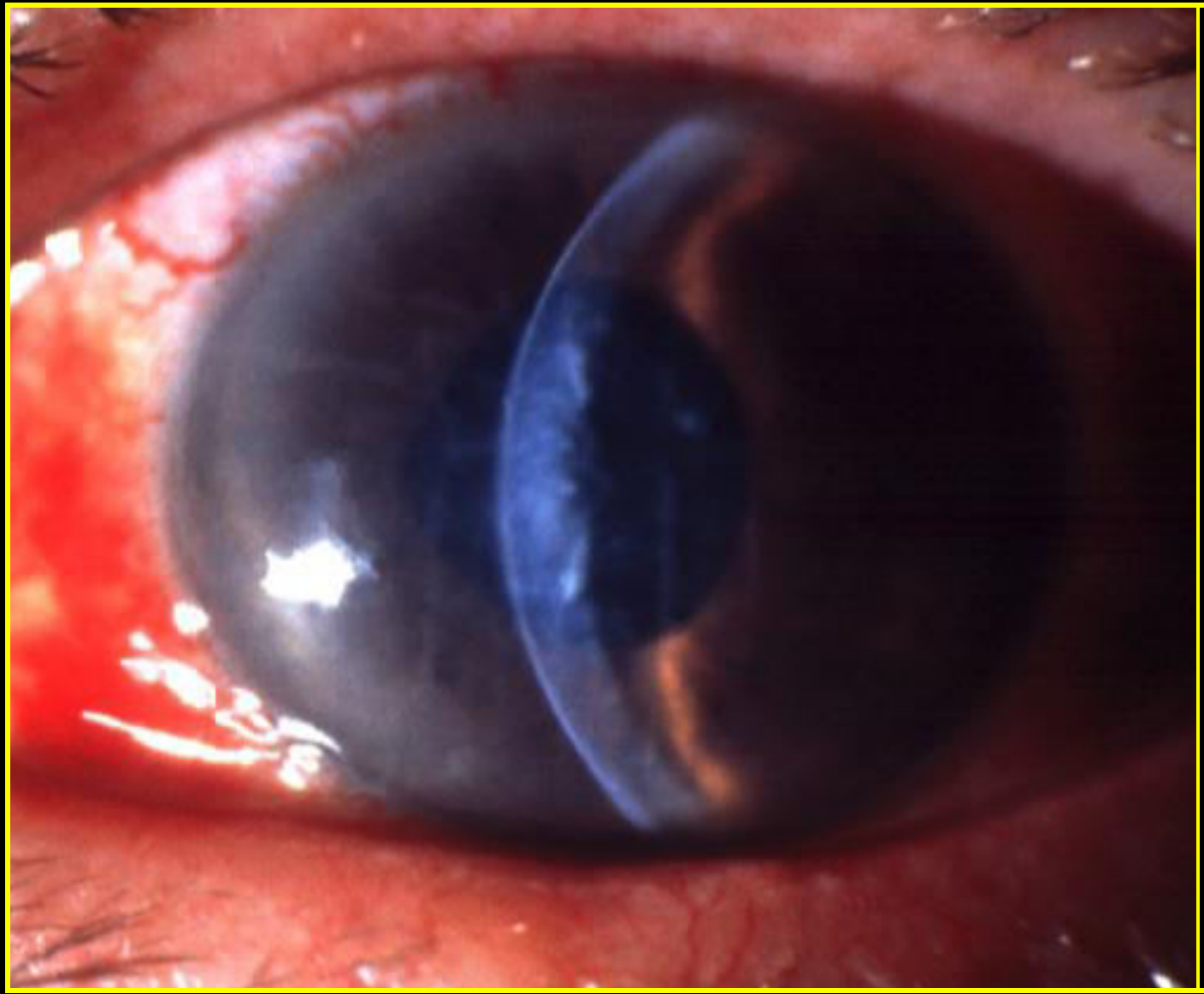
- Usually inadequate suturing of incision
- Most frequently follows inappropriate management of vitreous loss

Treatment

- Excise prolapsed iris tissue
- Resuture incision

Striate keratopathy

Corneal oedema and folds in Descemet membrane



Cause

- Damage to endothelium during surgery

Treatment

- Most cases resolve within a few days
- Occasionally persistent cases may require penetrating keratoplasty

Acute bacterial endophthalmitis

Incidence - about 1:1,000

Common causative organisms

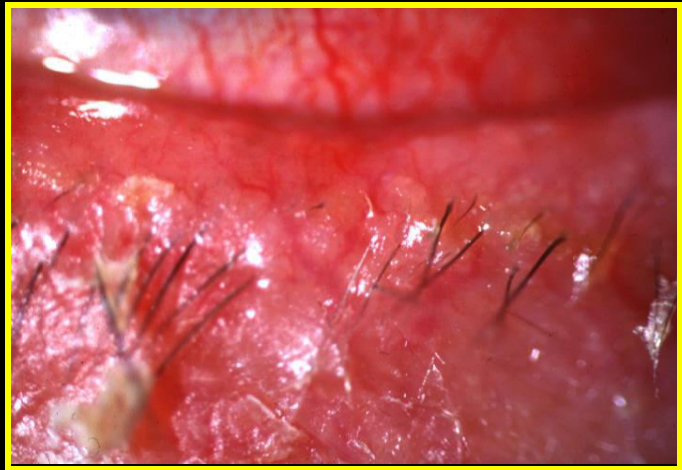
- *Staph. epidermidis*
- *Staph. aureus*
- *Pseudomonas* sp.

Source of infection

- Patient's own external bacterial flora is most frequent culprit
- Contaminated solutions and instruments
- Environmental flora including that of surgeon and operating room personnel

Preoperative prophylaxis

Treatment of pre-existing infections



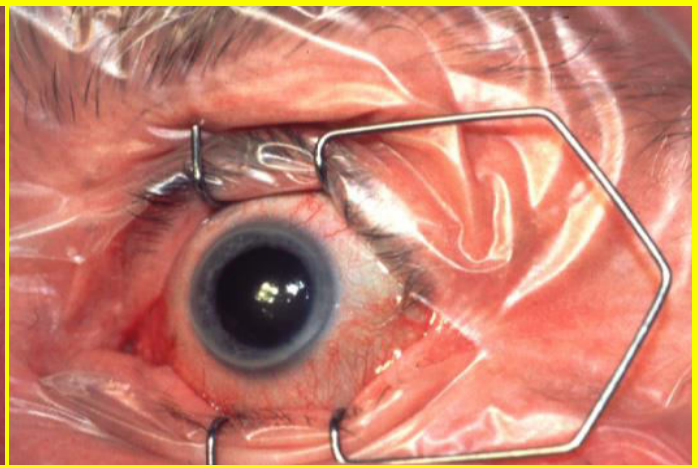
Staphylococcal blepharitis

Chronic conjunctivitis

Chronic dacryocystitis

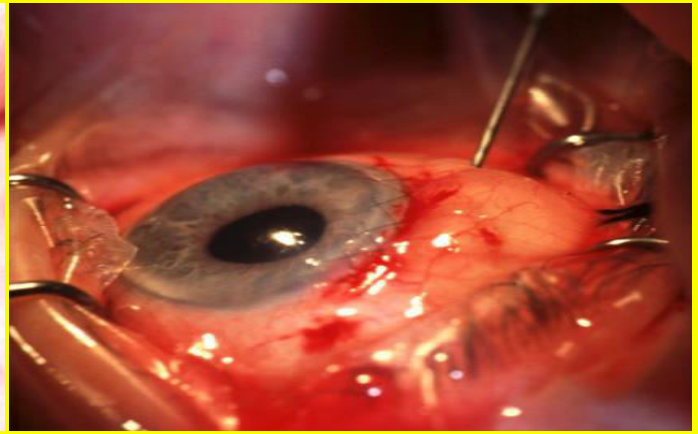
Infected socket

Peroperative prophylaxis



Meticulous prepping and draping

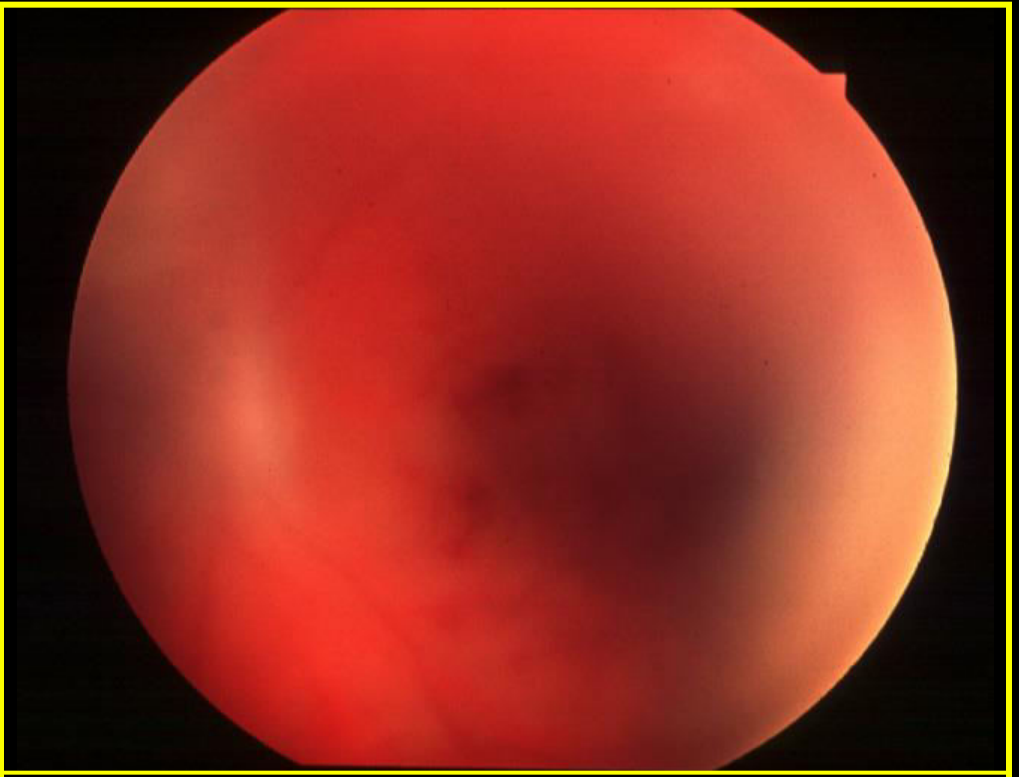
Instillation of povidone-iodine



Postoperative injection of antibiotics

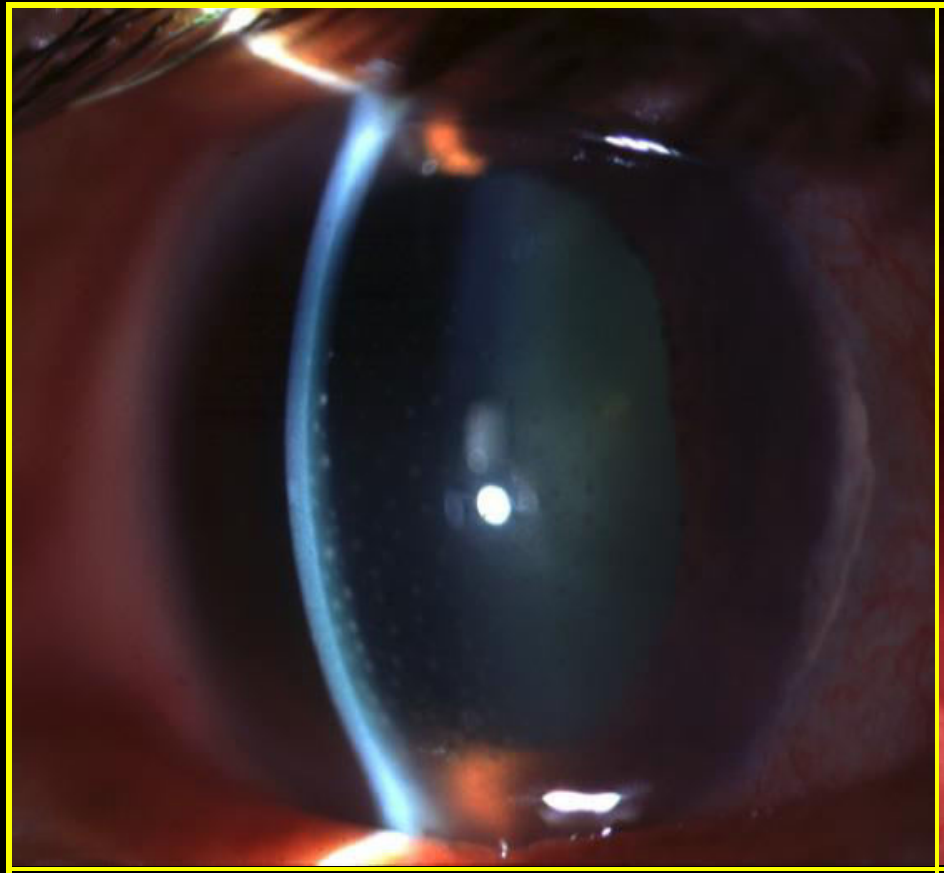
Signs of severe endophthalmitis

- Pain and marked visual loss
- Corneal haze, fibrinous exudate and hypopyon



- Absent or poor red reflex
- Inability to visualize fundus with indirect ophthalmoscope

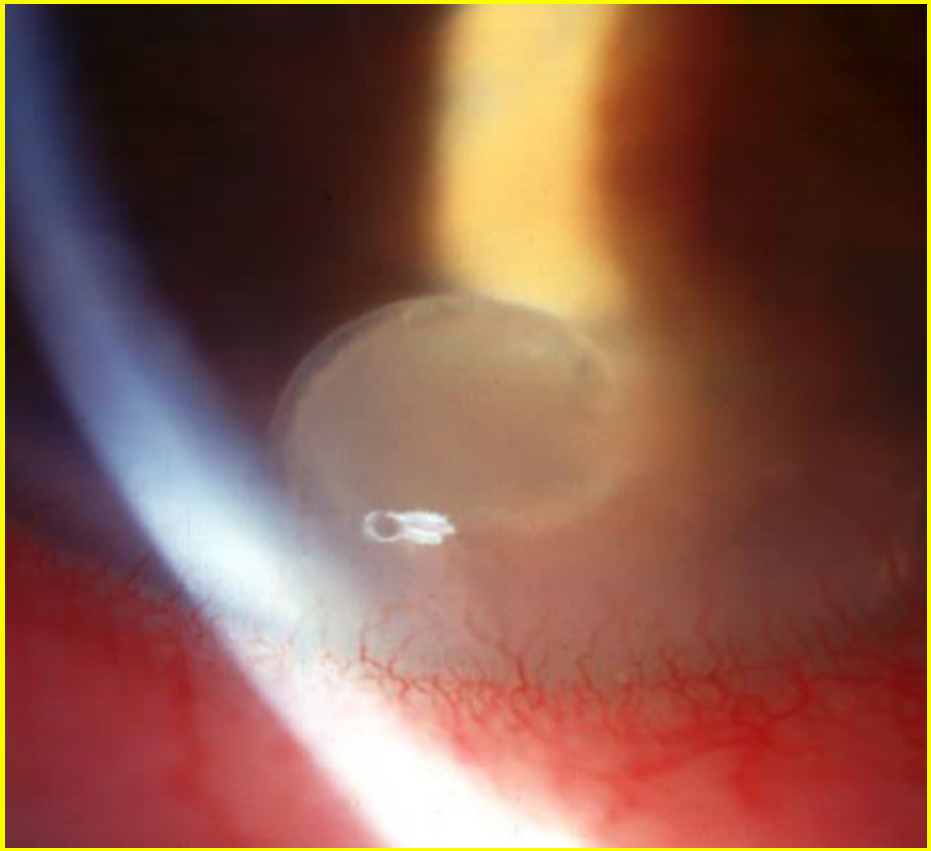
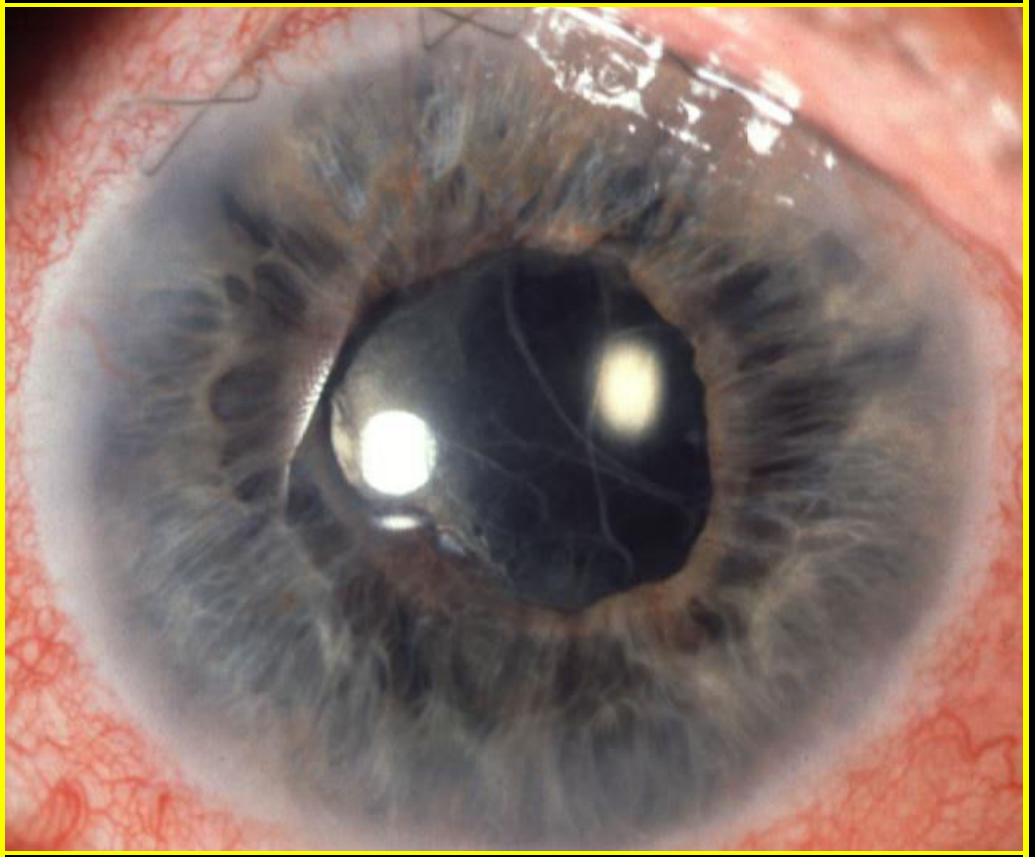
Signs of mild endophthalmitis



- Mild pain and visual loss
- Anterior chamber cells

- Small hypopyon
- Fundus visible with indirect ophthalmoscope

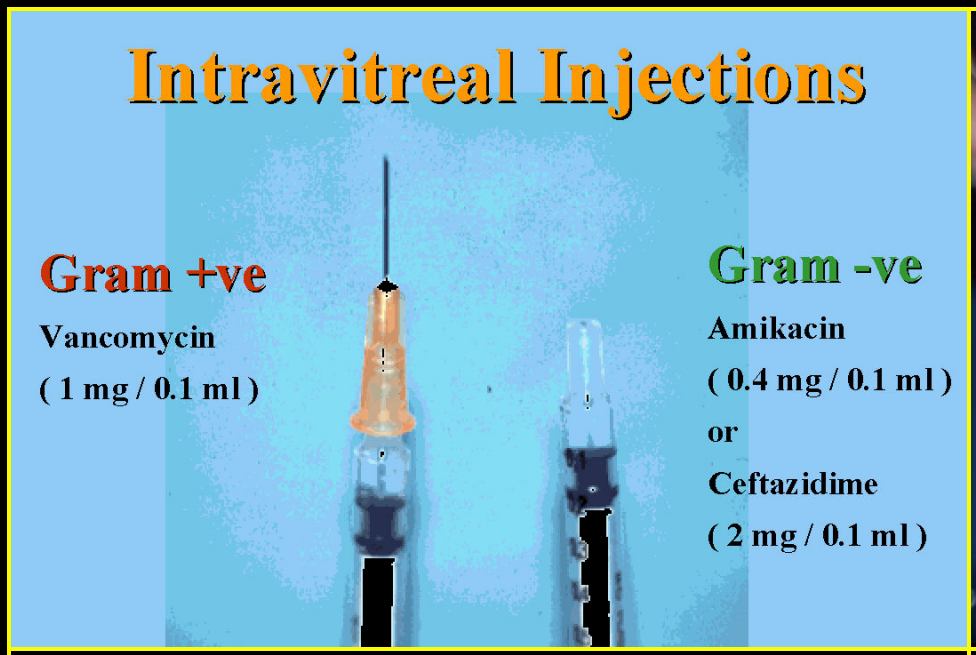
Differential diagnosis of endophthalmitis

Uveitis associated with retained lens material	Sterile fibrinous reaction
	
• No pain or hypopyon	• No pain and few if any anterior cells • Posterior synechiae may develop

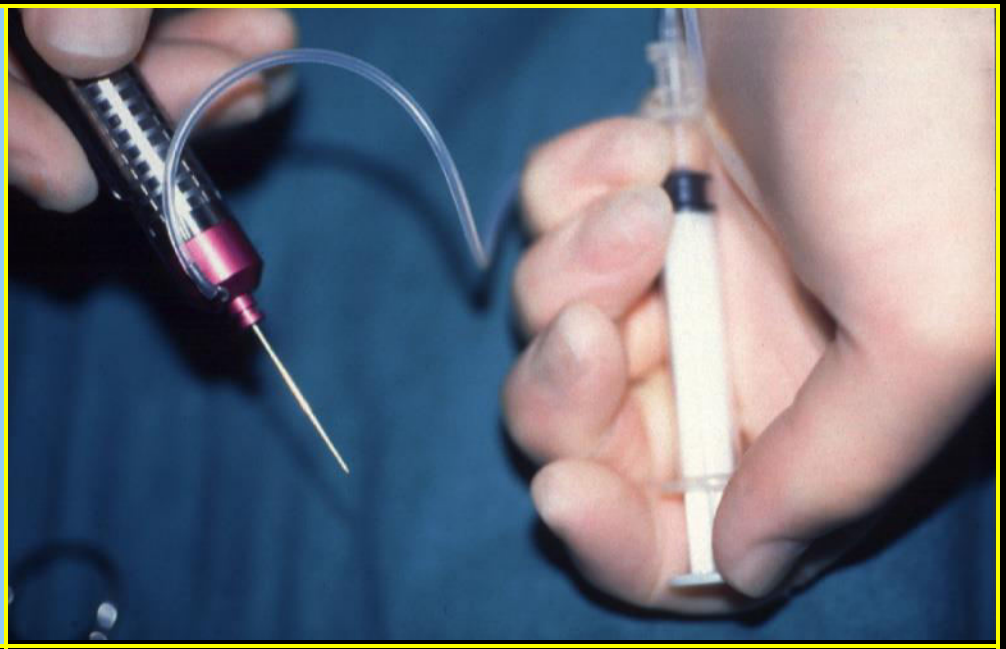
Management of Acute Endophthalmitis

1. Preparation of intravitreal injections
2. Identification of causative organisms
   - Aqueous samples
   - Vitreous samples
3. Intravitreal injections of antibiotics
4. Vitrectomy - only if VA is PL
5. Subsequent treatment

Preparation for sampling and injections

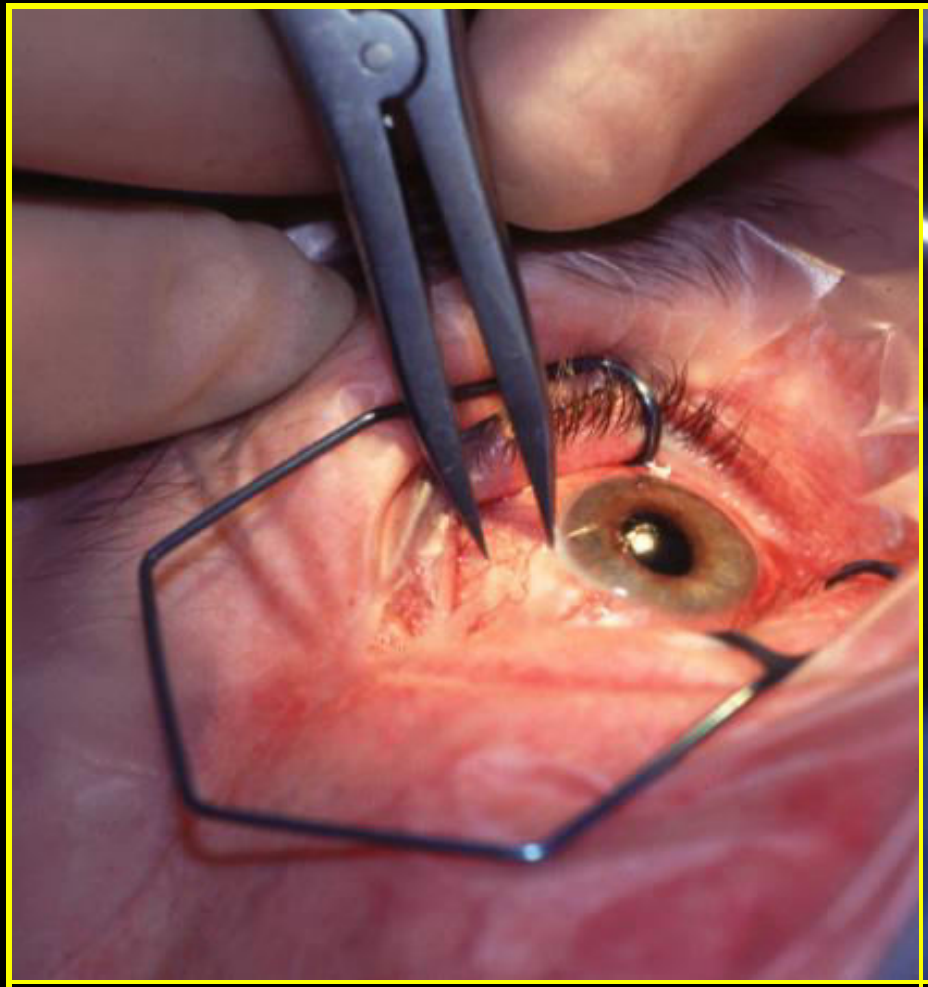


Antibiotics

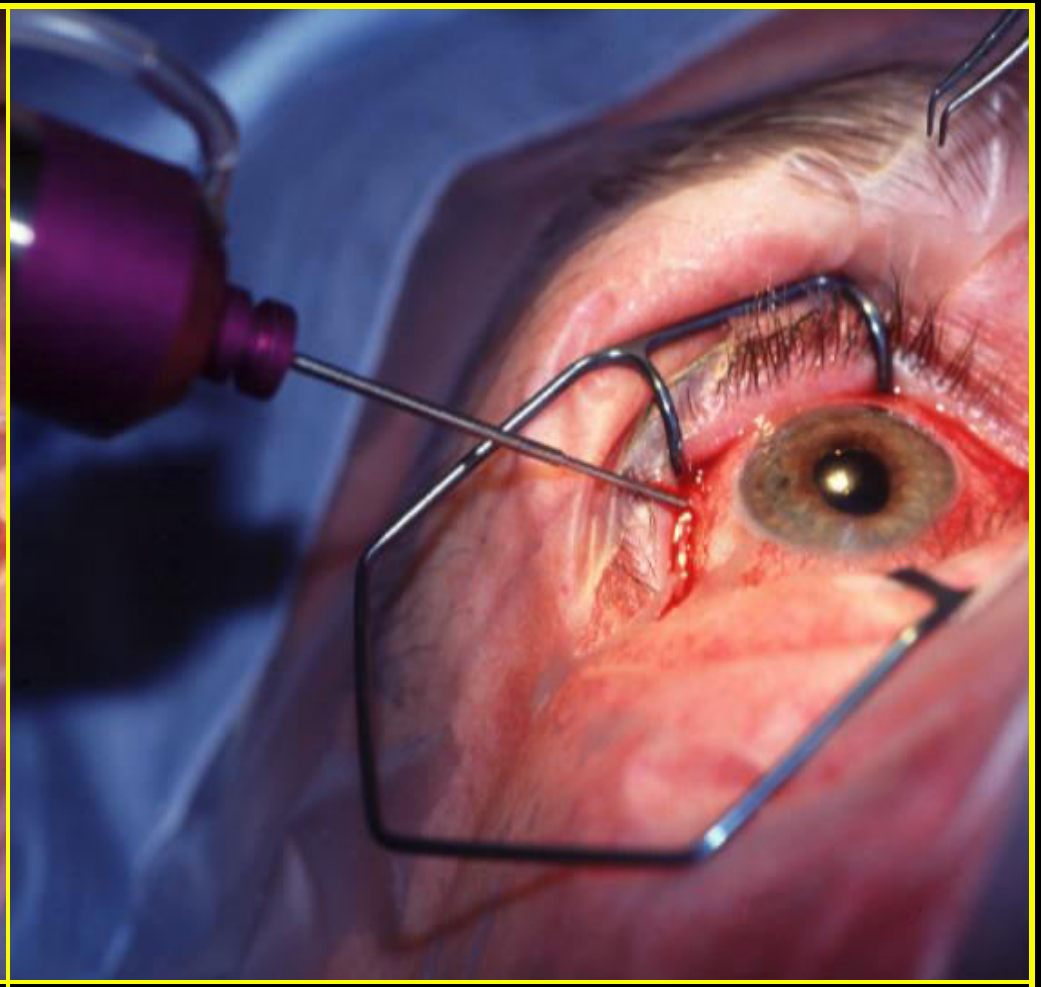


Mini vitrector

Sampling and injections (1)

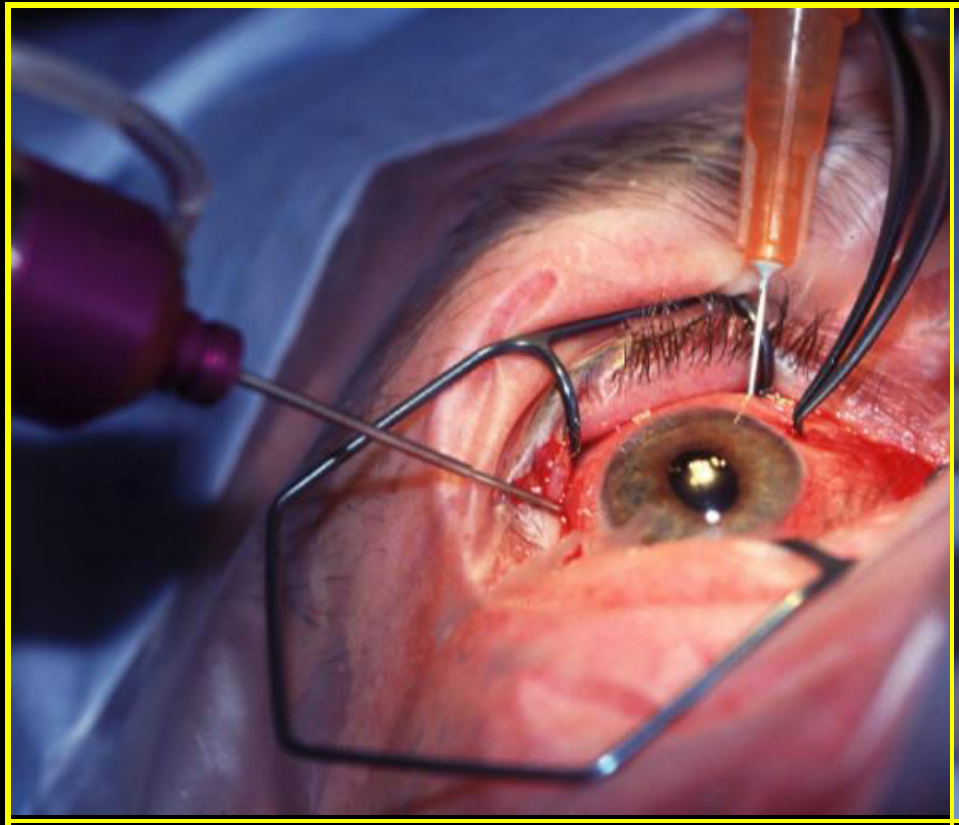


Make partial-thickness sclerotomy
3 mm behind limbus

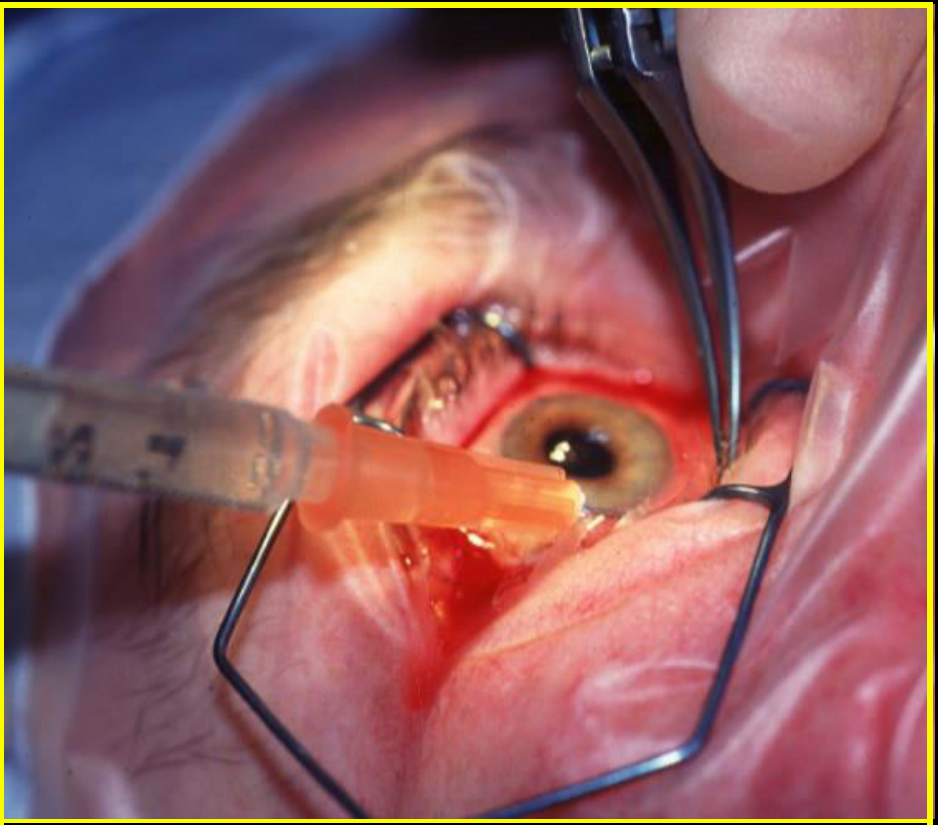


Insert mini vitrector

Sampling and injections (2)



- Insert needle attached to syringe containing antibiotics
- Aspirate 0.3 ml with vitrector
- Give first injection of antibiotics
- Disconnect syringe from needle
- Give second injection



- Remove vitrector and needle
- Inject subconjunctival antibiotics

Subsequent Treatment

1. Periocular injections

- Vancomycin 25 mg with ceftazidime 100 mg or gentamicin 20 mg with cefuroxime 125 mg
- Betamethasone 4 mg (1 ml)

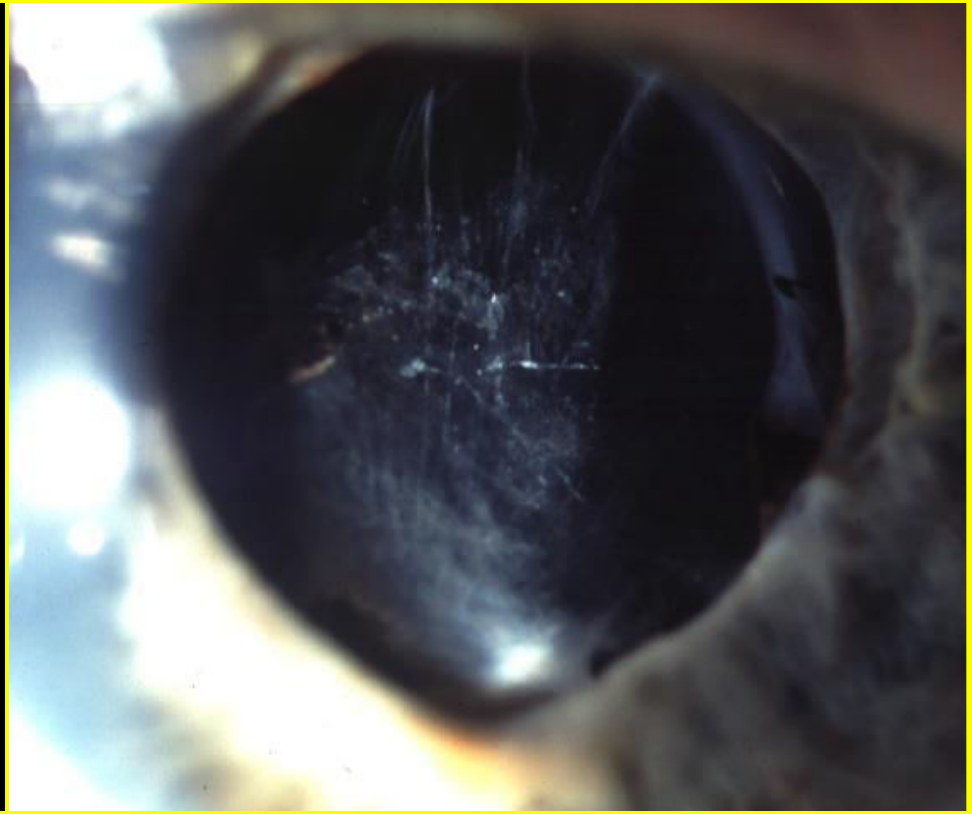
2. Topical therapy

- Fortified gentamicin 15 mg/ml and vancomycin 50 mg/ml drops
- Dexamethasone 0.1%

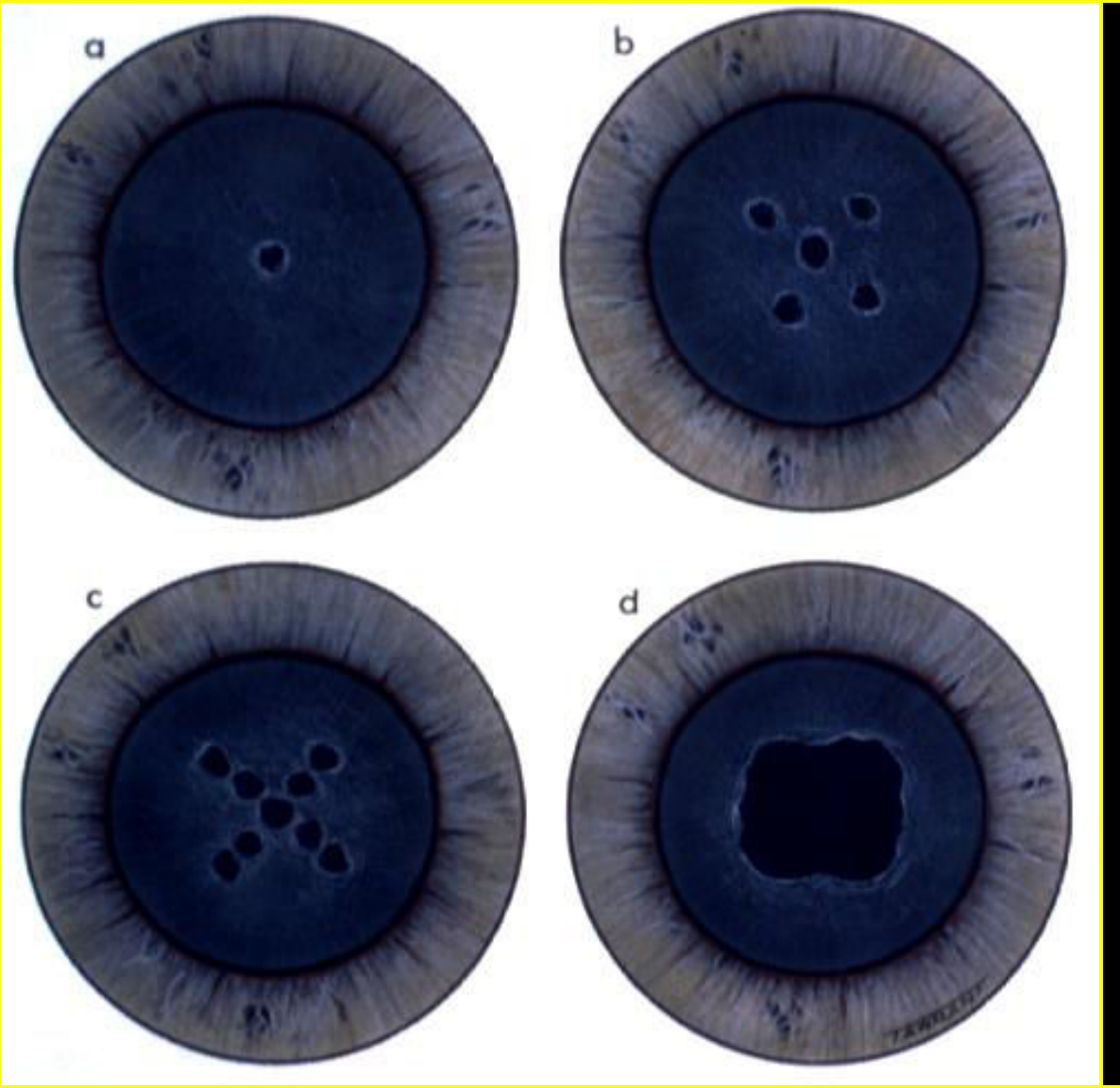
3. Systemic therapy

- Antibiotics are not beneficial
- Steroids only in very severe cases

Types of capsular opacification

Elschnig pearls	Fibrosis
	
• Proliferation of lens epithelium • Occurs after 3-5 years	• Usually occurs within 2-6 months • May involve remnants of anterior capsule and cause phimosis

Treatment of capsular opacification



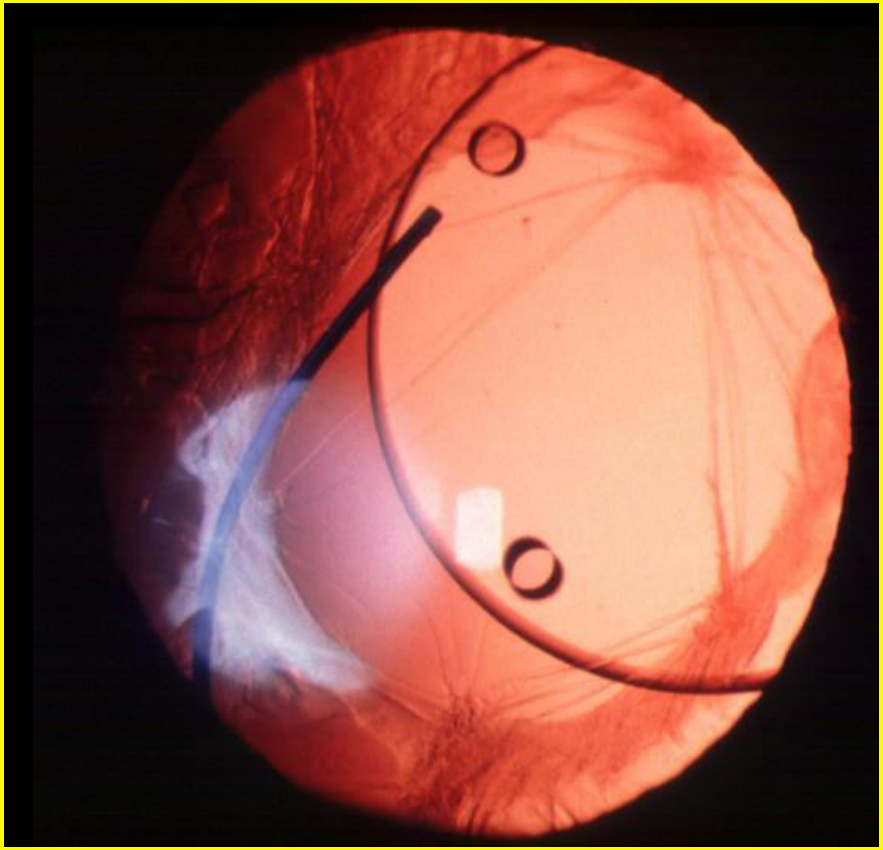
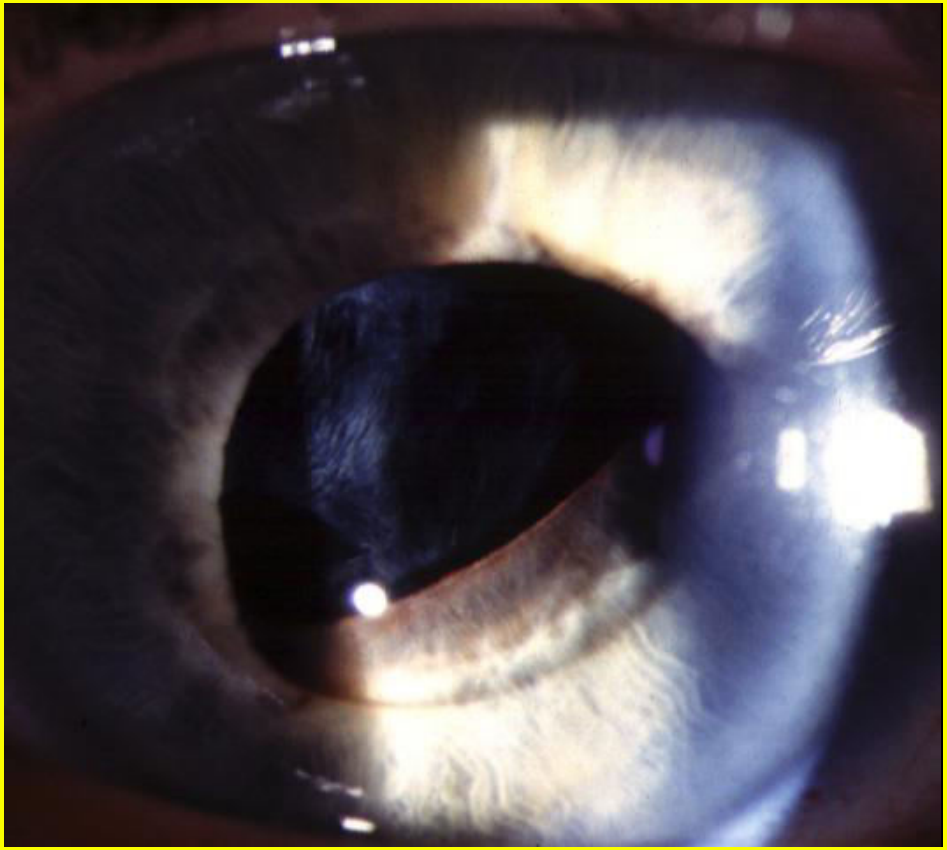
Nd:YAG laser capsulotomy

- Accurate focusing is vital
- Apply series of punctures in cruciate pattern (a-c)
- 3 mm opening is adequate (d)

Potential complications

- Damage to implant
- Cystoid macular oedema - uncommon
- Retinal detachment - rare except in high myopes

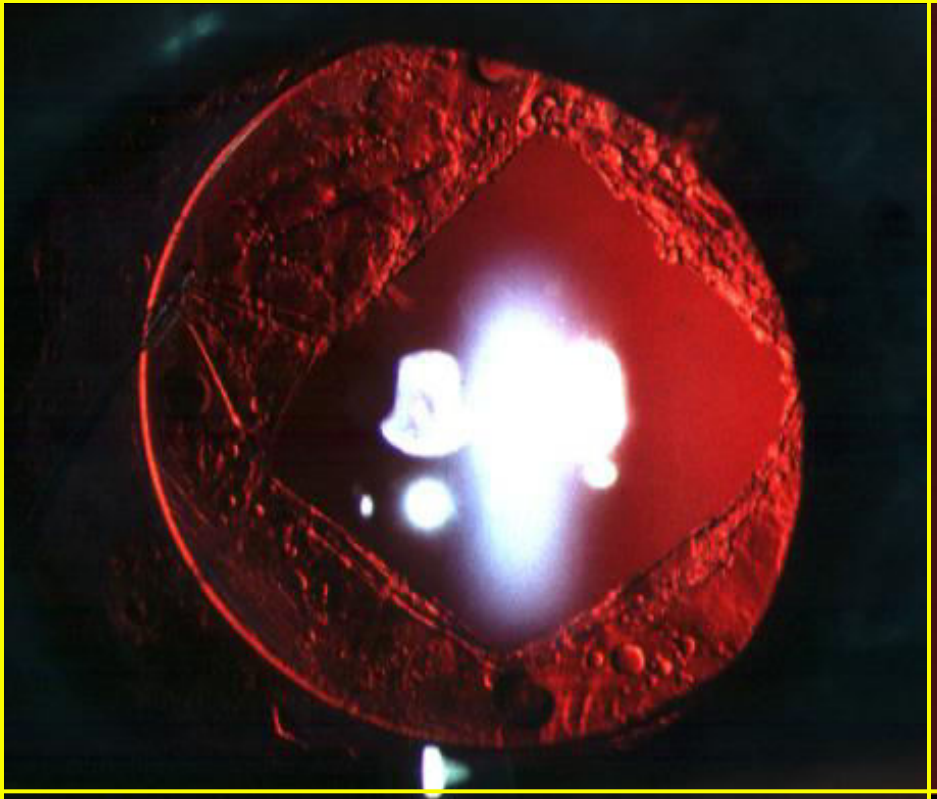
Implant displacement

Decentration	Optic capture
	
• May occur if one haptic is inserted into sulcus and other into bag • Remove and replace if severe	• Reposition may be necessary

Corneal decompensation

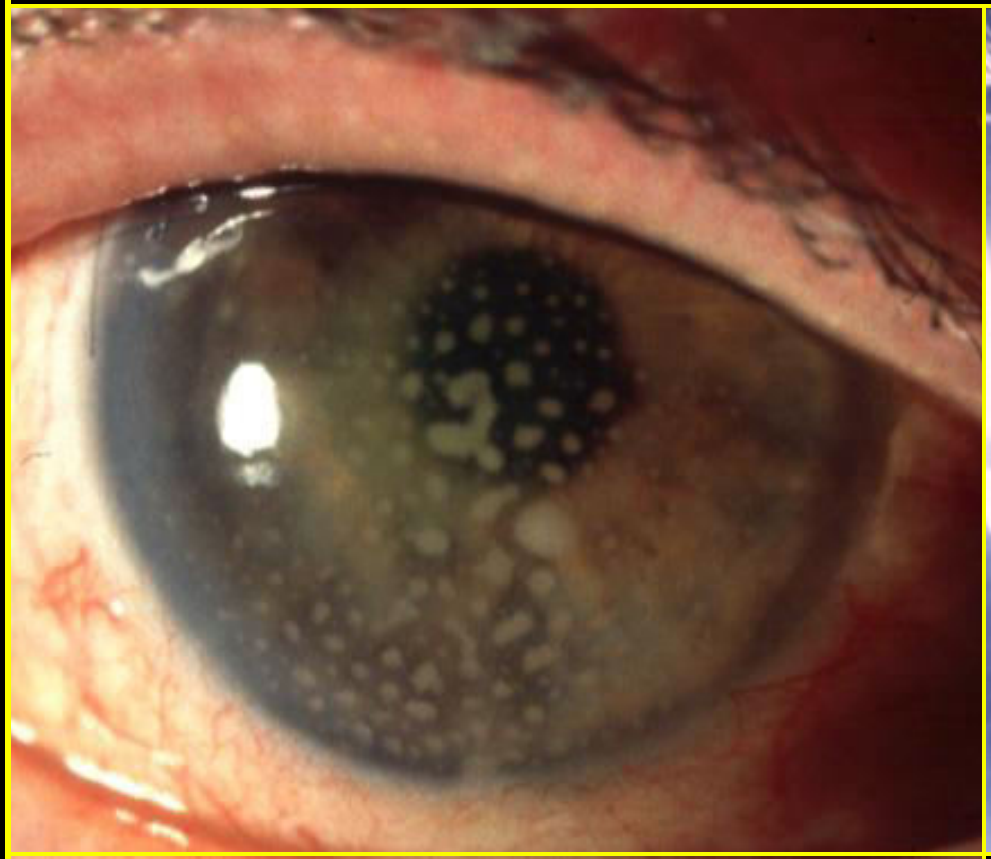
Predispositions	Treatment
	
• Anterior chamber implant • Fuchs endothelial dystrophy	• Penetrating keratoplasty in severe cases • Guarded visual prognosis because of frequently associated CMO

Retinal detachment risk factors

Disruption of posterior capsule	Lattice degeneration
	
• Intraoperative vitreous loss • Laser capsulotomy, particularly in high myopia	• Treat prophylactically before or soon after surgery

Chronic bacterial endophthalmitis

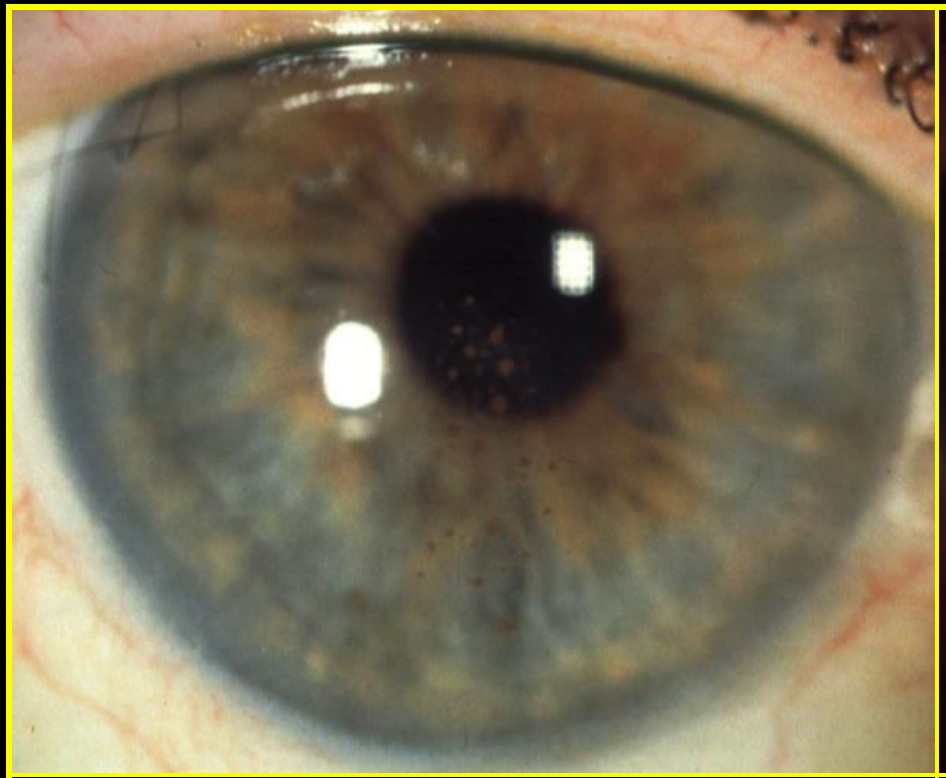
Signs



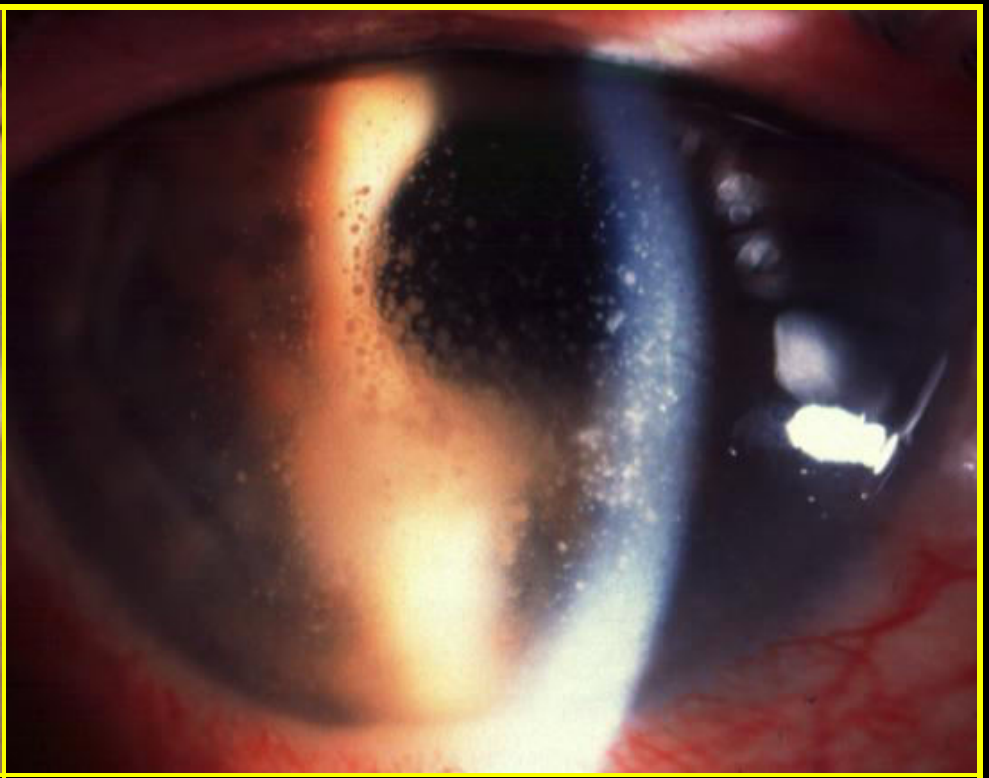
- Late onset, persistent, low-grade uveitis - may be granulomatous
- Commonly caused by *P. acnes* or *Staph. epidermidis*

- Low virulence organisms trapped in capsular bag
- White plaque on posterior capsule

Treatment of chronic endophthalmitis



- Initially good response to topical steroids



- Recurrence after cessation of treatment
- Inject intravitreal vancomycin
- Remove IOL and capsular bag if unresponsive