

# Keratitis vs keratoconjunctivitis

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# Ocular surface "itis"

- Conjunctivitis
- Keratitis
- Keratoconjunctivits

# Infectious conjunctivitis



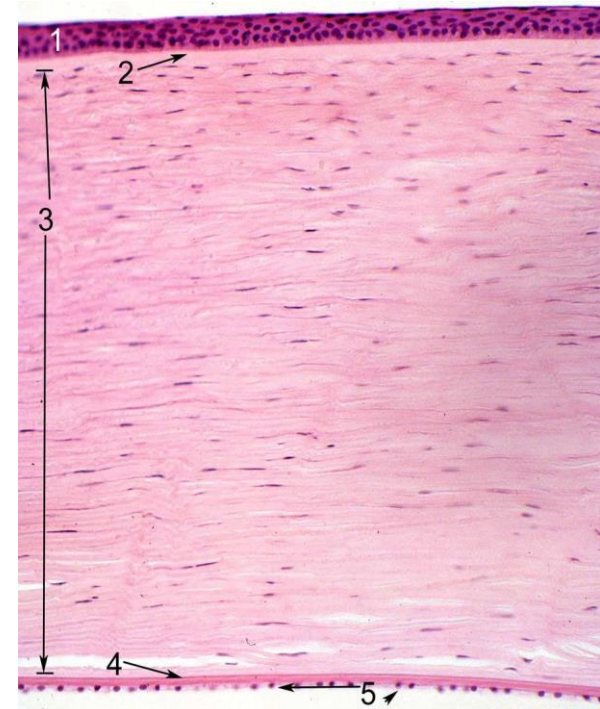
# Allergic conjunctivitis



# Corneal layers

- 1 Epithelium 0,05mm
- 2 Bowman´s layer
- 3 Stroma 0,5 mm
- 4 Descemet´s membran
- 5 Endothelium

The part of the body with most nerves



# Symptoms keratit and keratoconjunctivitis

Varying degree of:

- Discomfort, foreign body sensation, pain
- Light sensitivity
- Conjunctival injection
- Discharge
- Blurry vision/visual impairment
- Keratoconjunctivitis often both eyes, keratitis often unilateral

# Keratoconjunctivitis

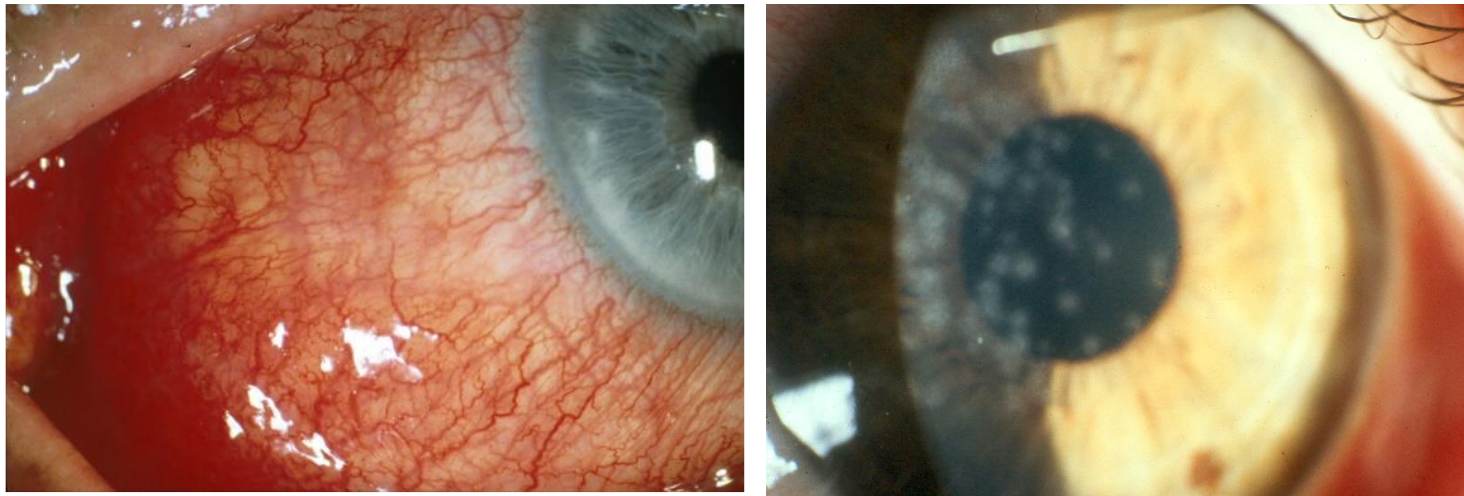
- Can be non-infectious
  - Allergic; vernal keratoconjunctivitis and atopic keratoconjunctivitis
  - Dry eyes- keratokonjunctivitis sicca
  - Exposure/neurotropic keratokonjunctivitis (often unilateral)
- Can be infectious
  - Adenovirus most common
  - Chlamydia (almost always unilateral)
- Superficial keratitis
- Can be acute or chronic

# Adenoviral keratoconjunktivitis

- Epidemic keratoconjunktivitis "Pink eyes"
- Common cause of keratoconjunktivitis
- Often first one and after 2-3 days the other eye
- Sometimes very swollen eyelids
- Watery discharge
- **CONTAGIOUS!**
- No targeted treatment
- Normally 2 weeks for recovery
- Hygiene and moisturing drops



# Adenoviral keratoconjunctivitis



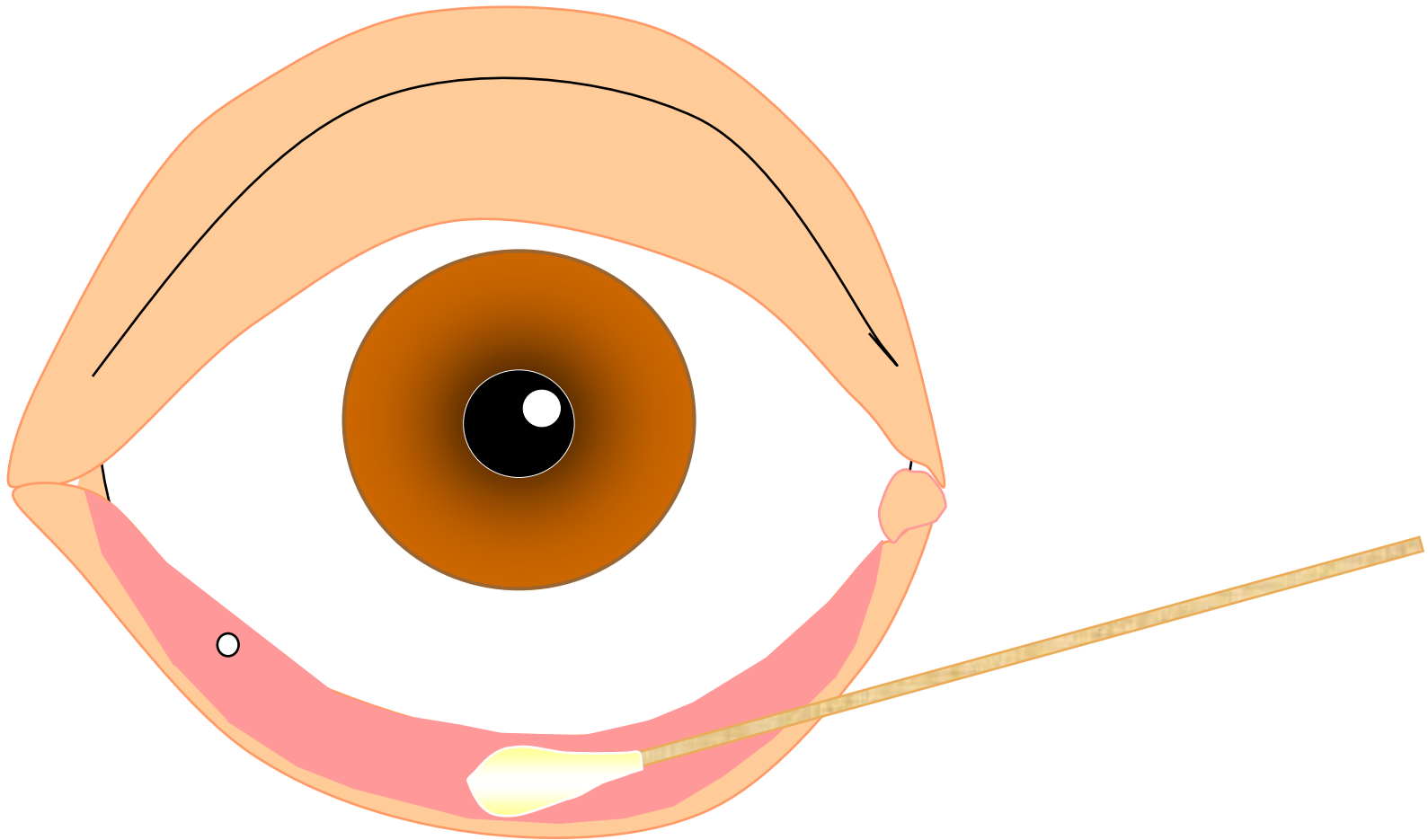
- Rapid tests – low specificity
- PCR-test if atypical
- If severe subepithelial infiltrates; cyclosporine drops or tacrolimus drops/ointment

# Clamydia keratoconjunctivits

- Young adults
- Sexually transmitted
- Unilateral
- Often 2-3 weeks of symptomes
- PCR-test



# Conjunctival swab for culture



# Keratitis

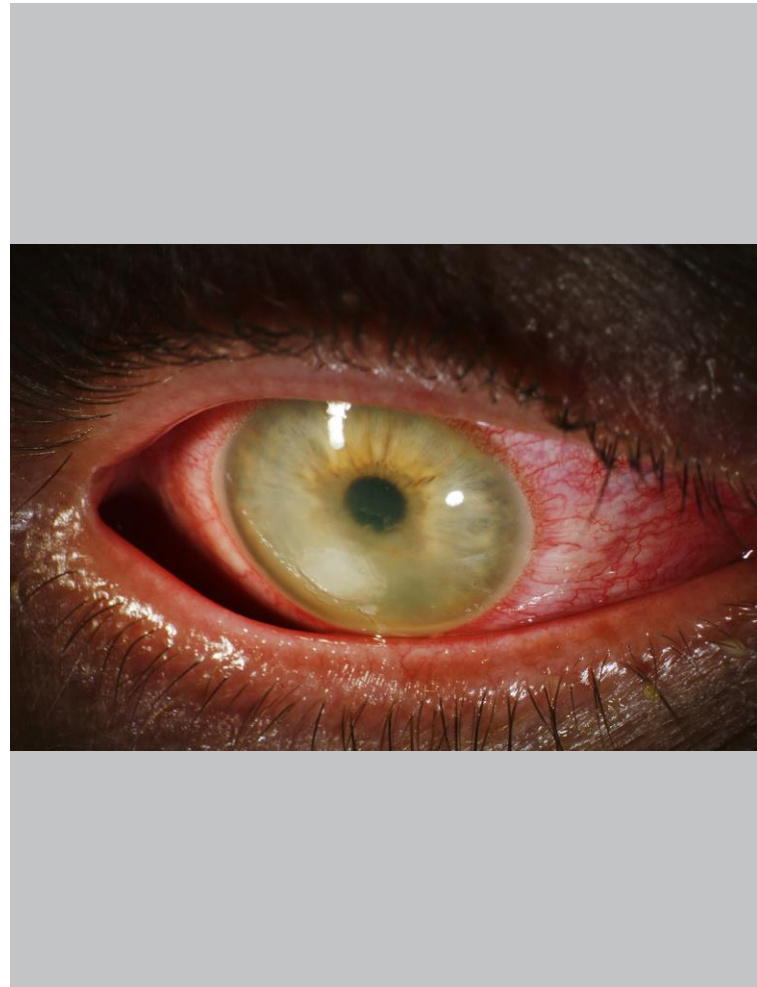
- Infectious or not?
  - What part of the world
  - Patient history
  - Patient risk factors
    - Rheumatic disease?
    - Scin disease?
  - Ocular risk factor
  - Presentation of the keratitis
  - Cultures/PCR/confocal microscope



# Keratitis

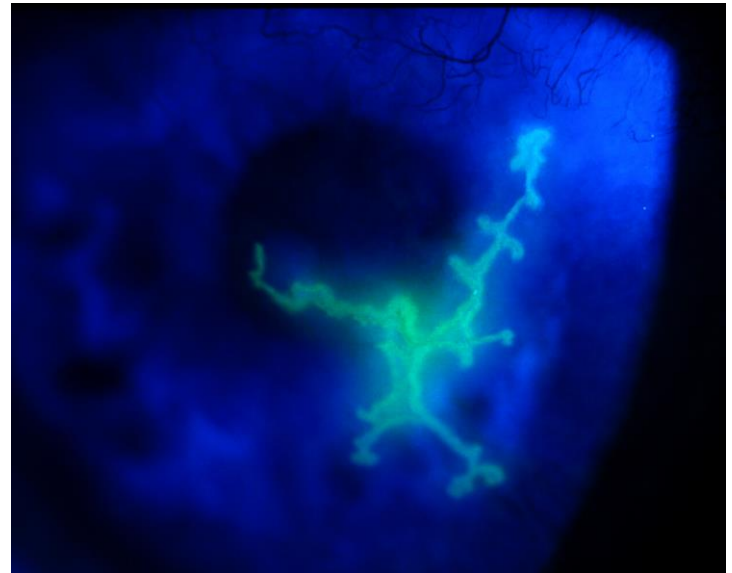
- Bacterial 40-50%
- Viral 30-40%
- Fungal 1%
- Protozal <1%
- (sterile 10-25%)

Ibrahim et al. **Incidence of Infectious Corneal Ulcers, Portsmouth Study, UK** J Clin Exp Ophthalmol 2012



# Viral keratits

- Virus
  - Adenovirus
  - Herpes simplex virus
  - Varicella virus (herpes zoster)
- Risk factors
  - Known disease
  - Immunosuppression
  - Atopic dermatitis
- Tests
  - PCR



# Corneal sensibility



# Microbial keratitis –risk factors

- Epithelial defect
  - Contact lenses
  - Dry eyes
  - Lagophthalmus
  - Decreased sensibility
  - Trauma
  - Corneal surgery
- Generall risk factors
  - Immunosuppression, drug abuse, age



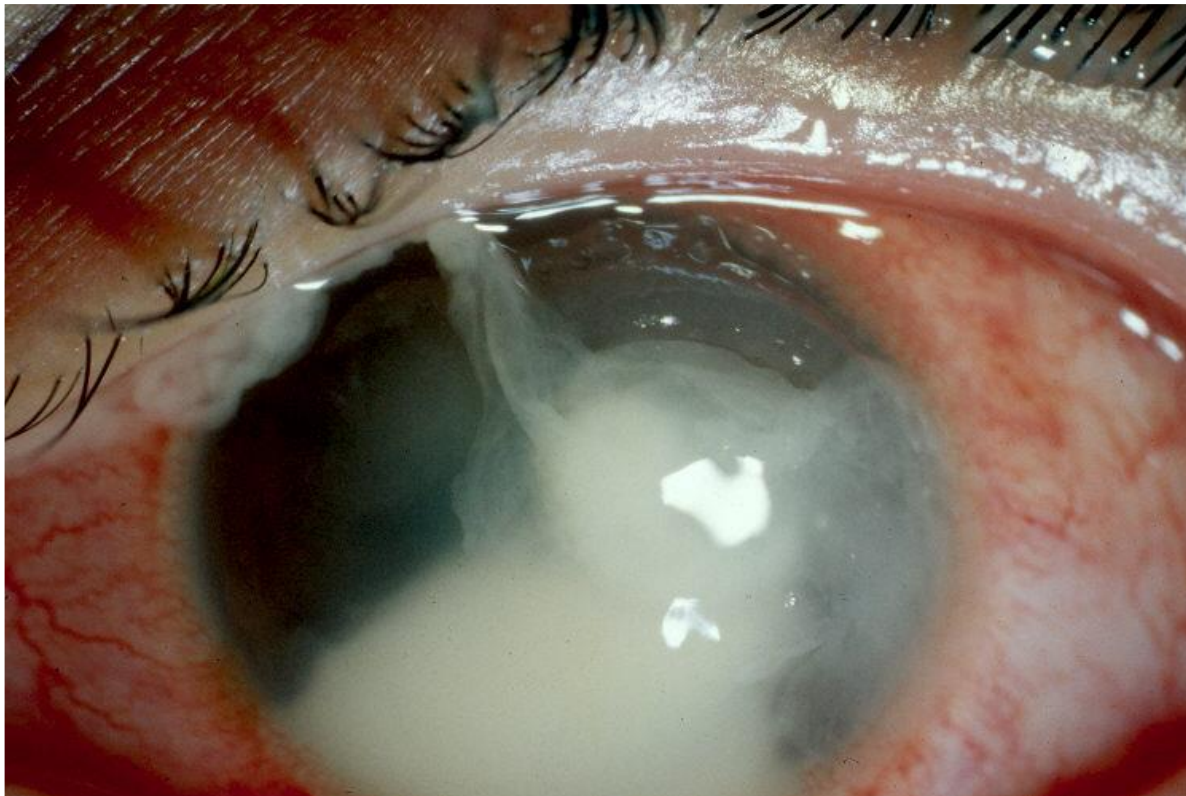
## 40-year old man, pain since 1 day



Right eye no problems  
Left eye, light sensitive, pain,  
discharge and white spot on  
cornea

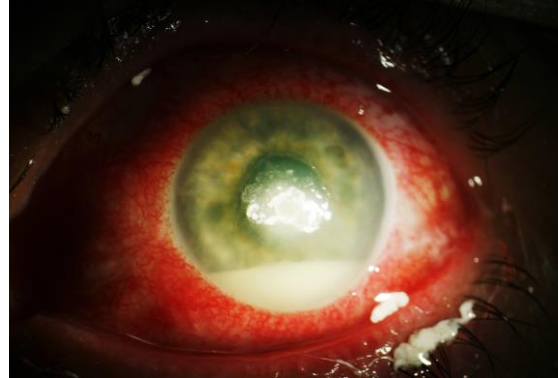
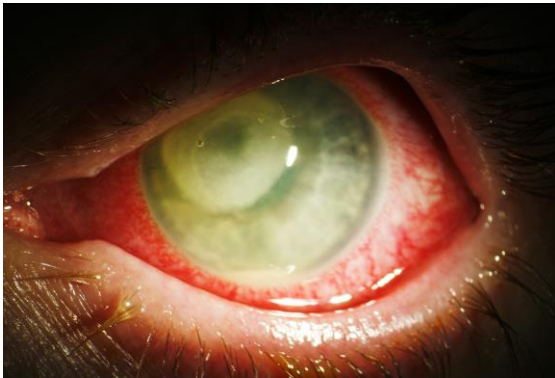
# 23-year old woman, 3 days pain

-This is the reason for the need of quick management i keratitis!

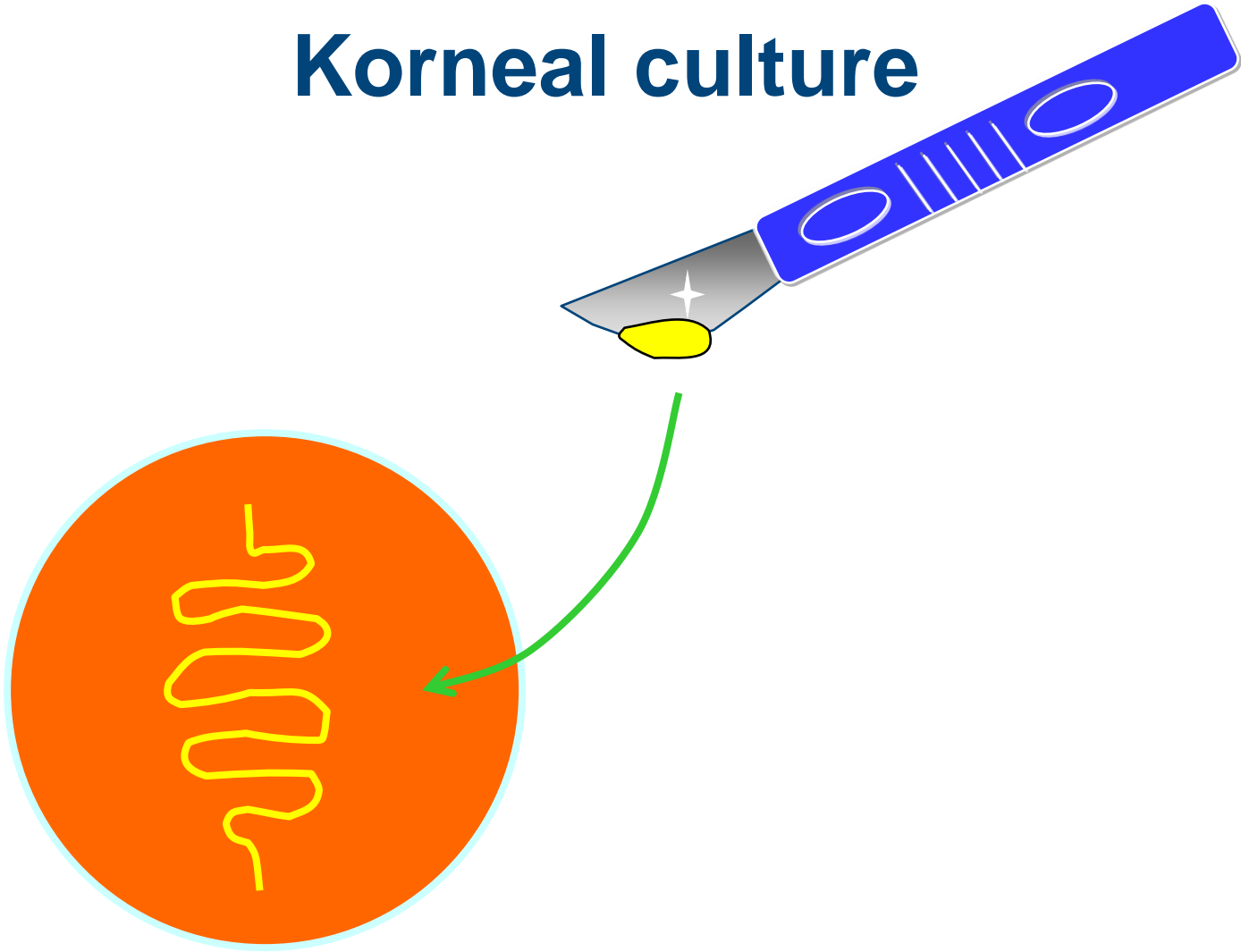


# Keratitis left eye

Patient history and cultures/PCR necessary for diagnosis



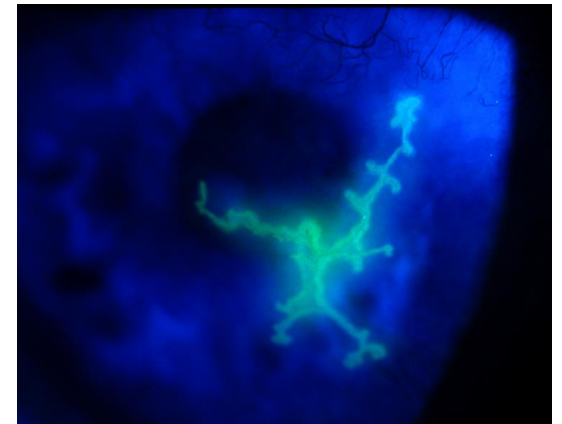
# Korneal culture



# Acanthamoeba keratitis



# Acanthamoeba keratitis versus HSV



# Management in suspected microbial keratitis

- Identify the enemy
  - Corneal scrapings for culture
  - If suspected fungi take double plates for culture
  - PCR
  - If suspected acanthamoeba special culture/ PCR/ confocal microscopy

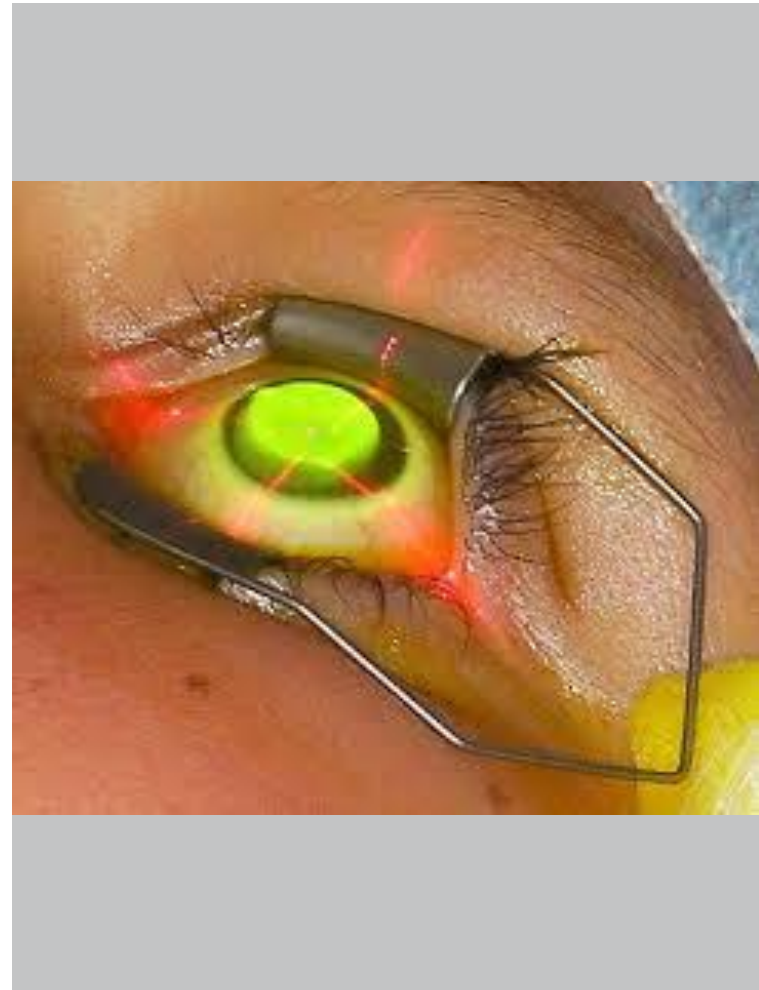
# Management in suspected microbial keratit

- Kill the enemy!
  - Always initiate empirical treatment
  - Broad spectrum antibiotics covering both gram negative and gram positive bacteria.
  - At St Eriks Ögonsjukhus
    - Fluoroquinolon and Cloramfenikol drops
    - Intense treatment 2-3 days, adjusted therapy after culture results
  - Targeted treatment for fungai or acanthamoeba



# PACK-CXL

- Photoactivated chromophore for infectious keratitis
- Several case reports
- Herpes contraindicated
- No consensus yet
  - Which cases will benefit
  - Which microbes are susceptible
  - Which settings are the best
  - Which chromophore is the best



## To summarize

- Patient history, symptoms and duration of symptoms will guide
- **Conjunctivitis**
  - Selflimiting, infections seldom need for treatment
- **Keratokonjunctivitis**
  - Acute – often viral
  - Semi-acute think of chlamydia - PCR
  - Chronic - often keratoconjunctivitis sicca
- **Keratitis – sight threatening**
  - Inflammatory in systemic disease
  - Infectious keratitis, almost always unilateral
    - Try to identify the microorganism
    - Start empiric treatment!