INTERNATIONAL CONGRESS OF THE
EGYPTIAN
OPHTHALMOLOGICAL SOCIETY

EOS 1902

In collaboration with: MEACO

Acanthameba: The Tiny Monster

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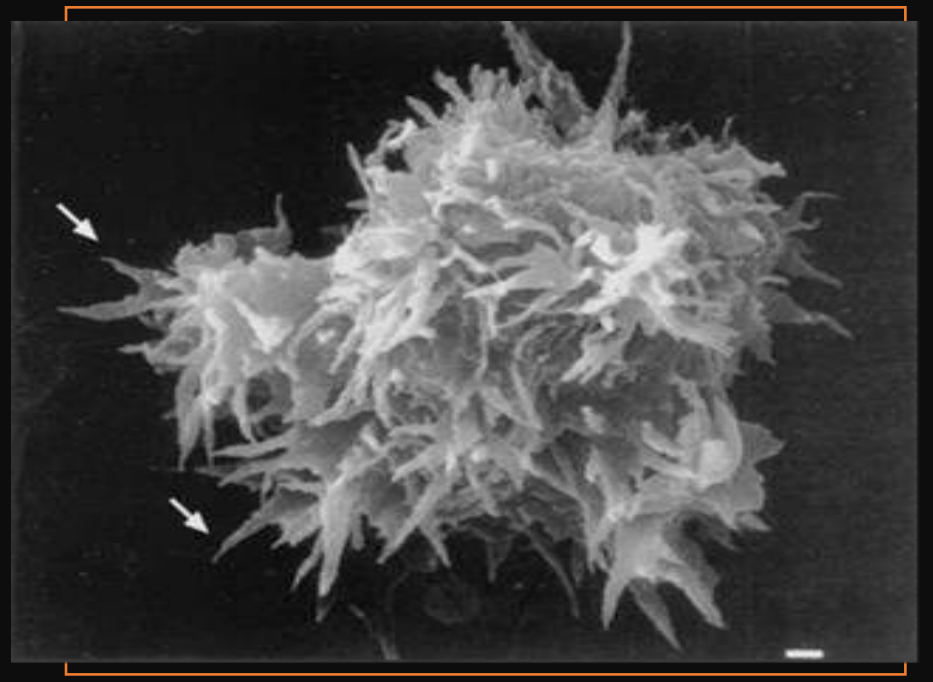
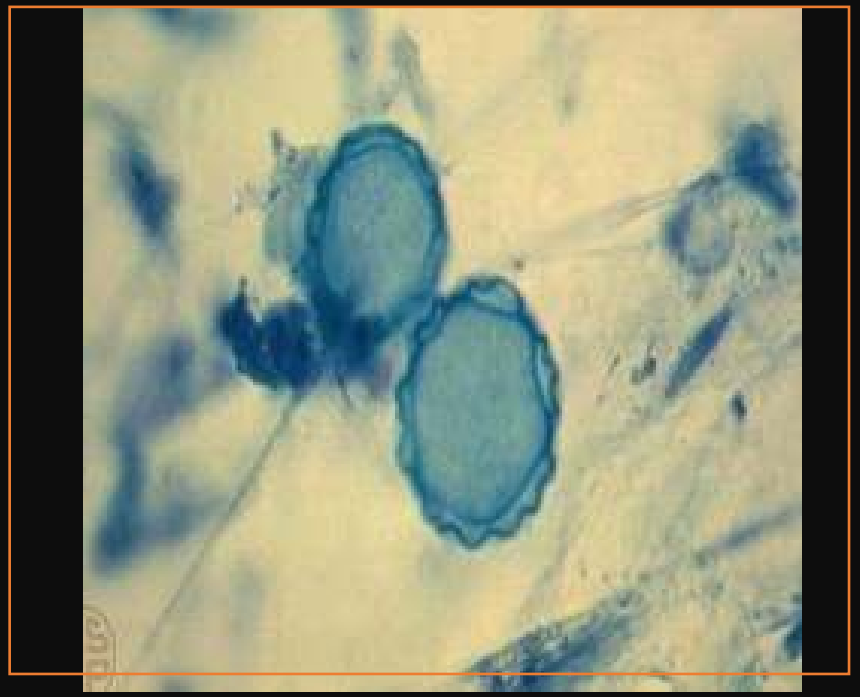
Acanthameba: Why a Monster?



- **Master of disguise:**
  two forms: Trophozoite & Cyst
- **The trophozoite:**
  a unicellular free-living organism.
  It measures 10-50 microns.
  It is amoeboid in shape with pseudopodia .
  It feeds on small algae, bacteria, and keratocytes
- **The Cyst:**
  spherical **double-walled**
  average size of 20 micron
  resists extreme weather, antimicrobial drugs, and the immune system of the body.
  Excystment occurs when trophozoites emerge from the cyst under suitable environmental conditions .

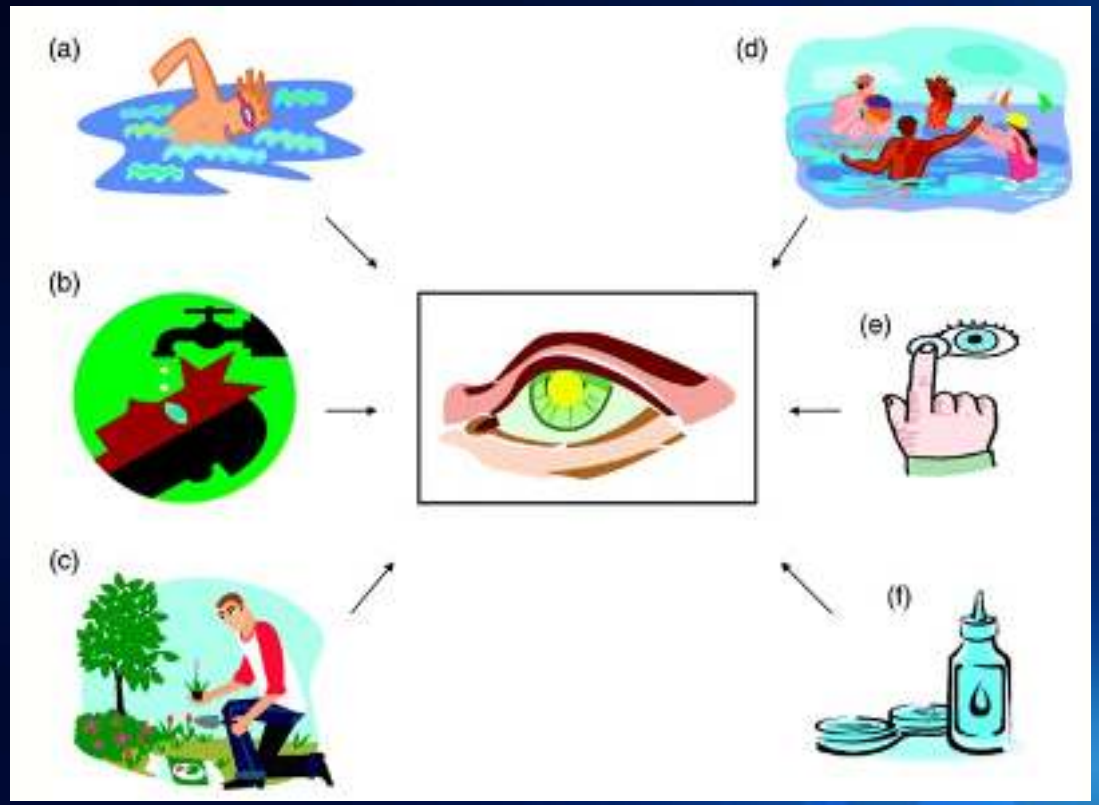


Acanthameba: Why a Monster?

- **Different species with variable virulence**
  Acanthameba castellanii & A. polyphaga: most common to cause keratitis (8 species)
- **Prolonged duration of treatment** to completely eradicate it
- If not properly and early treated ➔ **severe damage of the cornea and total visual loss**
- **Recurrence after apparent cure**

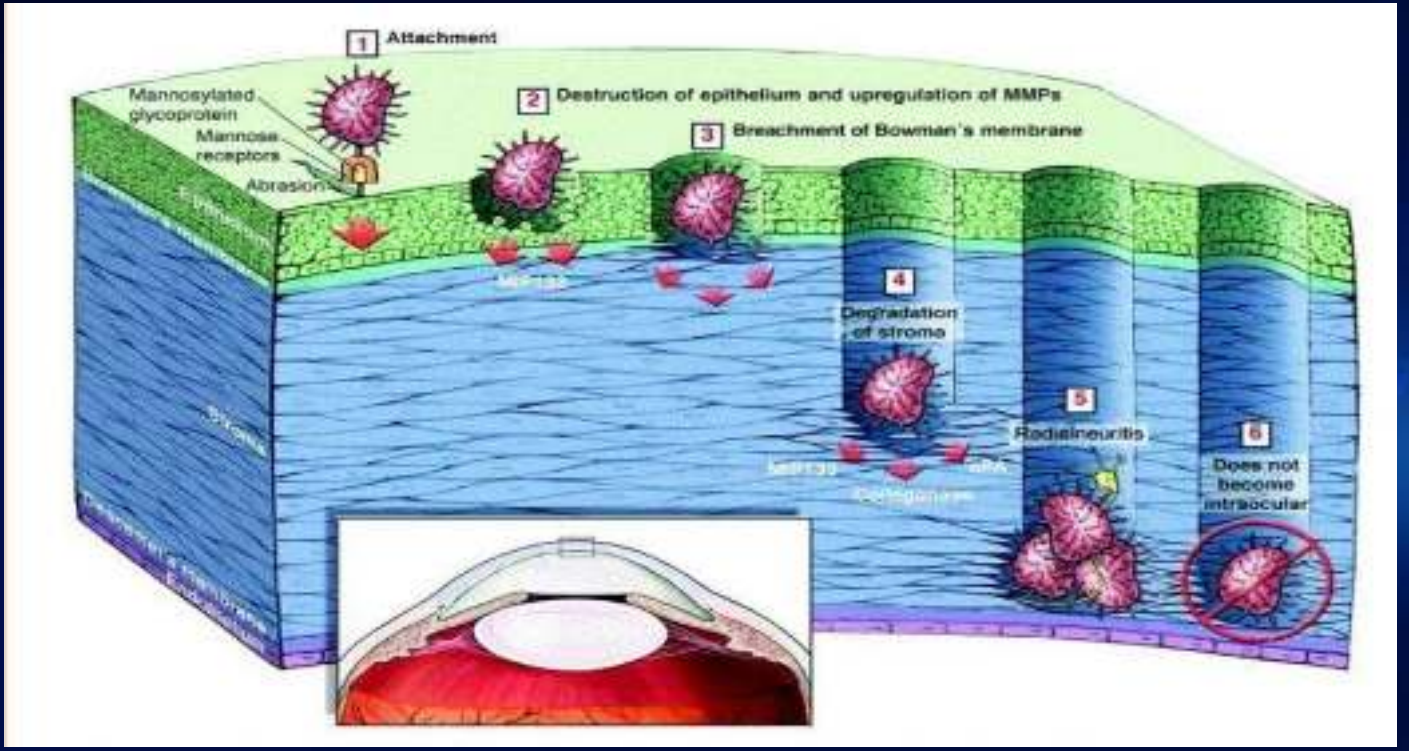
Acanthameba Keratitis

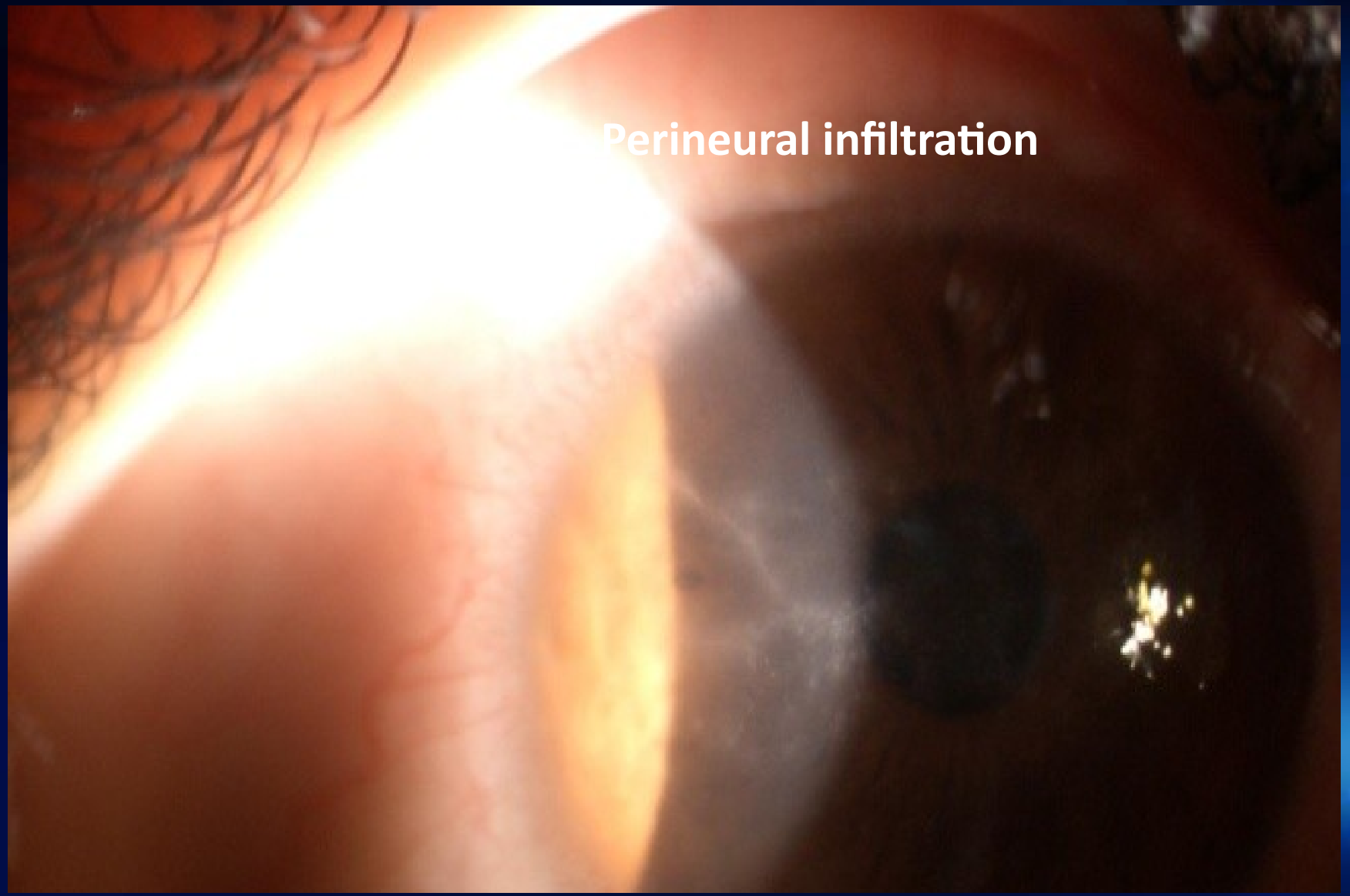
- **How does the monster reach the cornea?**
  - Contact lenses wear(80% of cases)
  - Swimming pools
  - Dust or soil in the eye
  - Plant-induced injuries



Acanthameba Keratitis

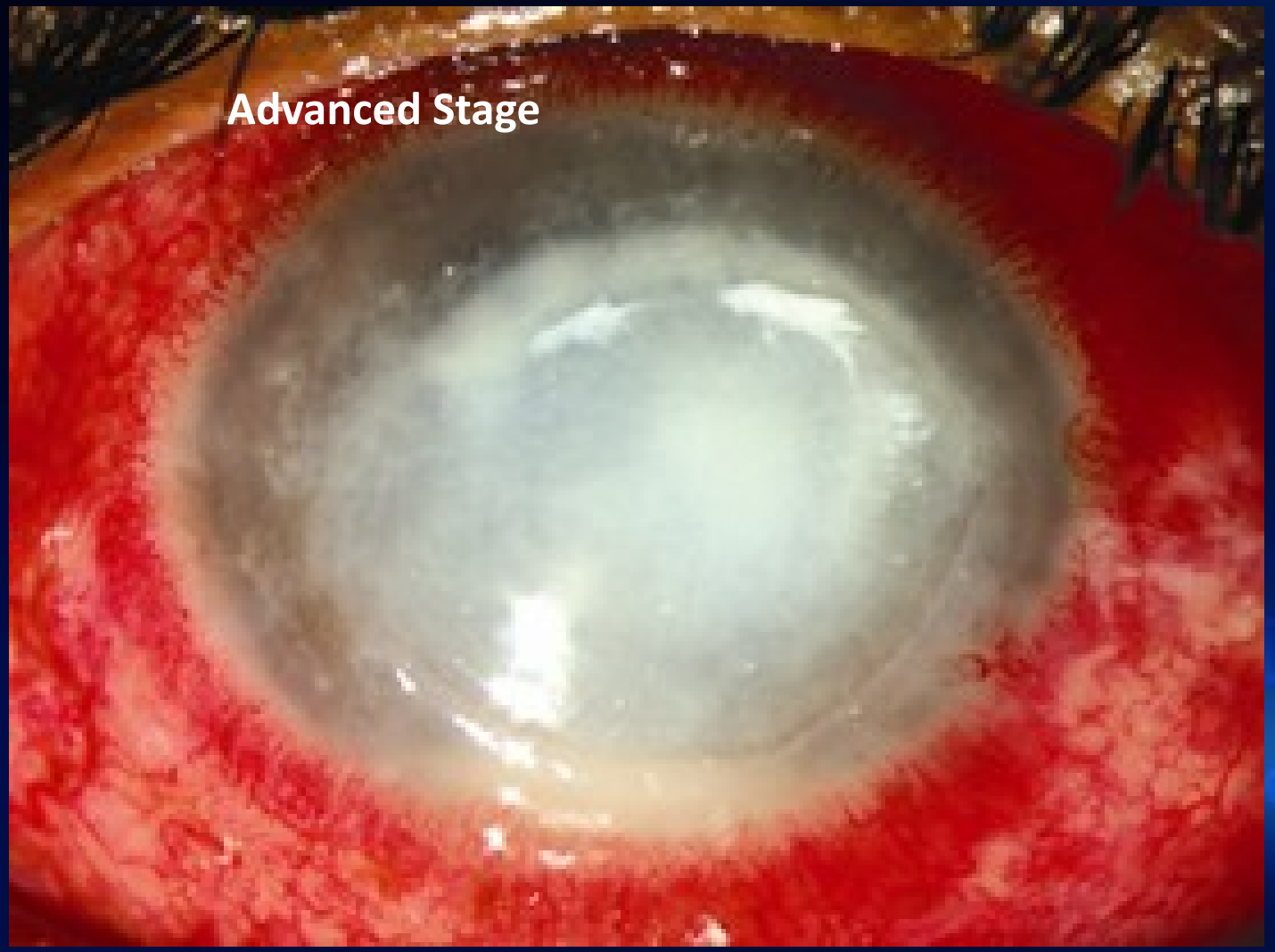
- **The pathogenic cascade of Acanthamoeba keratitis**




Perineural infiltration

Ring Infiltration


Secondary Infection


Advanced Stage

Challenges in treating acanthameba keratitis

1. Late diagnosis
2. Resistance to treatment
3. Slow Resoponse to medication
4. Limited Treatment Options
5. Potential for severe complications
6. Patient Compliance

Treatment Options for Acanthameba Keratitis

1. **Anti-amebic medicatioins**
    1. Biguanides (Polyhexamethylene biguanide-PHMB 0.02%, 0.04%, 0.06%)
       It targets trophozoites and cysts
    2. Propamidine isethionate 0.1% (Brolene) never used as monotherapy
    3. Chlorhexidine 0.02- 0.2%
    4. Hexamidine 0.1% (DESOMEDINE) Faster &better >brolene
2. **Combination Therapy:** **is the best approach**
3. **Corneal Grafting**
   In severe cases where medications are ineffective
4. **Supportive Care**
   Management of pain and secondary infection
5. **Patient Compliance and Monitoring**

Acanthameba Keratitis Medical Protocol

PHMB + Propamidine isethionate	
48 hrs	Every hour/ day & night
72 hrs	Every hour / day only
3-4 wks	Every 2 hours

Decreased till 4 times/day for 3-6 months

Acanthameba Keratitis
Steroids

- Controversial
- Early cases not necessary
- Indications :-

1. Persistent pain
2. Persistent inflammations
3. Indolent ulcer
4. Uveitis (r/o 2ry infection)
5. Scleritis

AFTER 2-3 WKS of TREATMENT WITH anti-AMOEBA ED

Acanthameba Keraitis
Duration of Treatment

- Minimum in Early Acanthamoeba = 3 month
- Minimum in late =6 months
- Mean duration variable among studies up to 18 months

Acanthameba Keratitis
Rate of recurrence

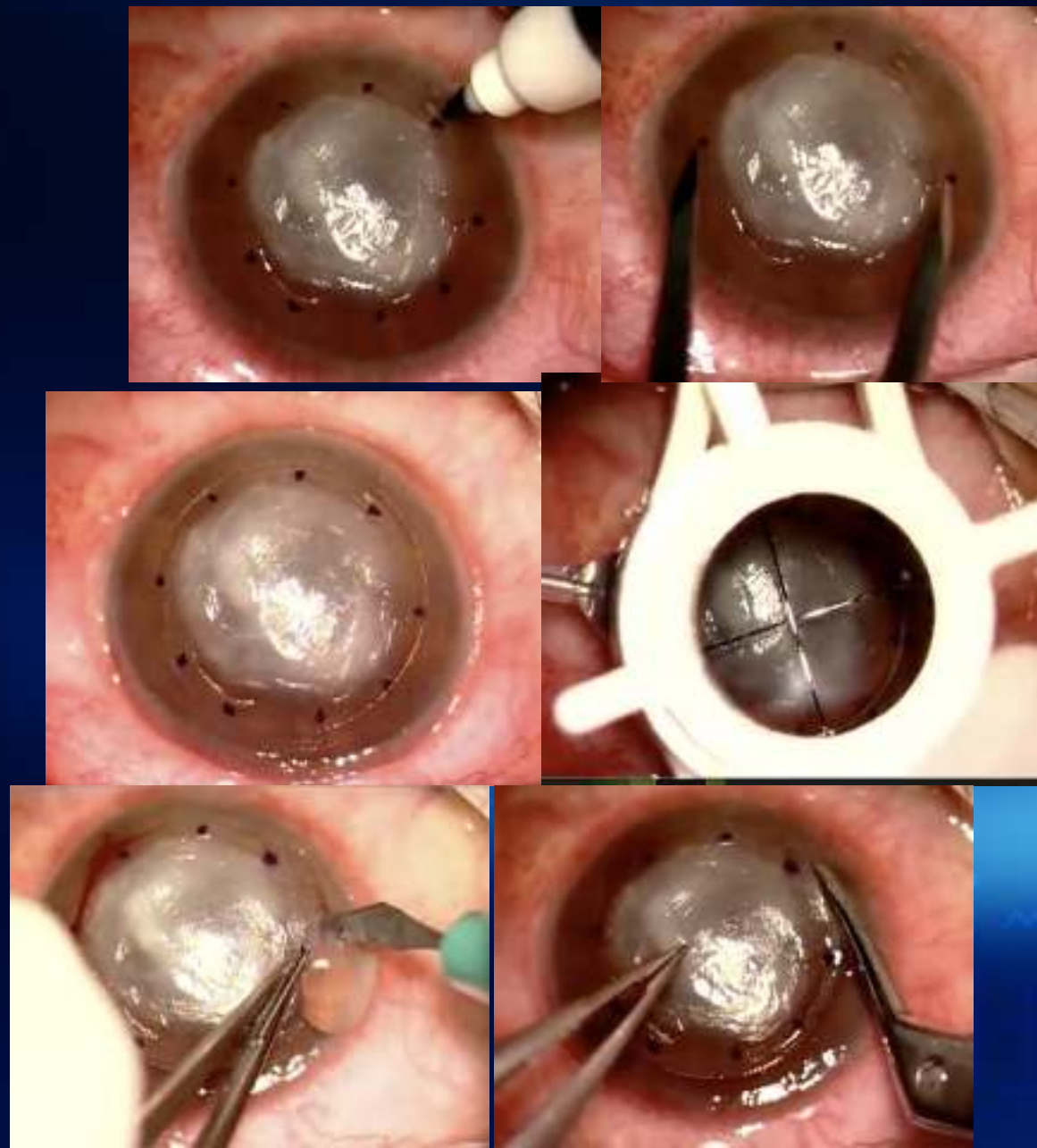
- 11-25%
- Can be as late as 18 months

Acanthameba Keratitis:
Surgical Tips

- Keratoplasty is indicated in severe cases not responding to medical treatment
- Central lesions not more than 6 mm in diameter are more likely to be completely removed with low risk of recurrence
- Anti-amebic treatment should be continued for at least 3 months postoperatively

Acanthameba Keratitis:
Surgical Tips

- The entire lesion should be included in the trephination
- The excised button should be examined histopathologically to confirm the diagnosis and absence of the organism in the cut edge



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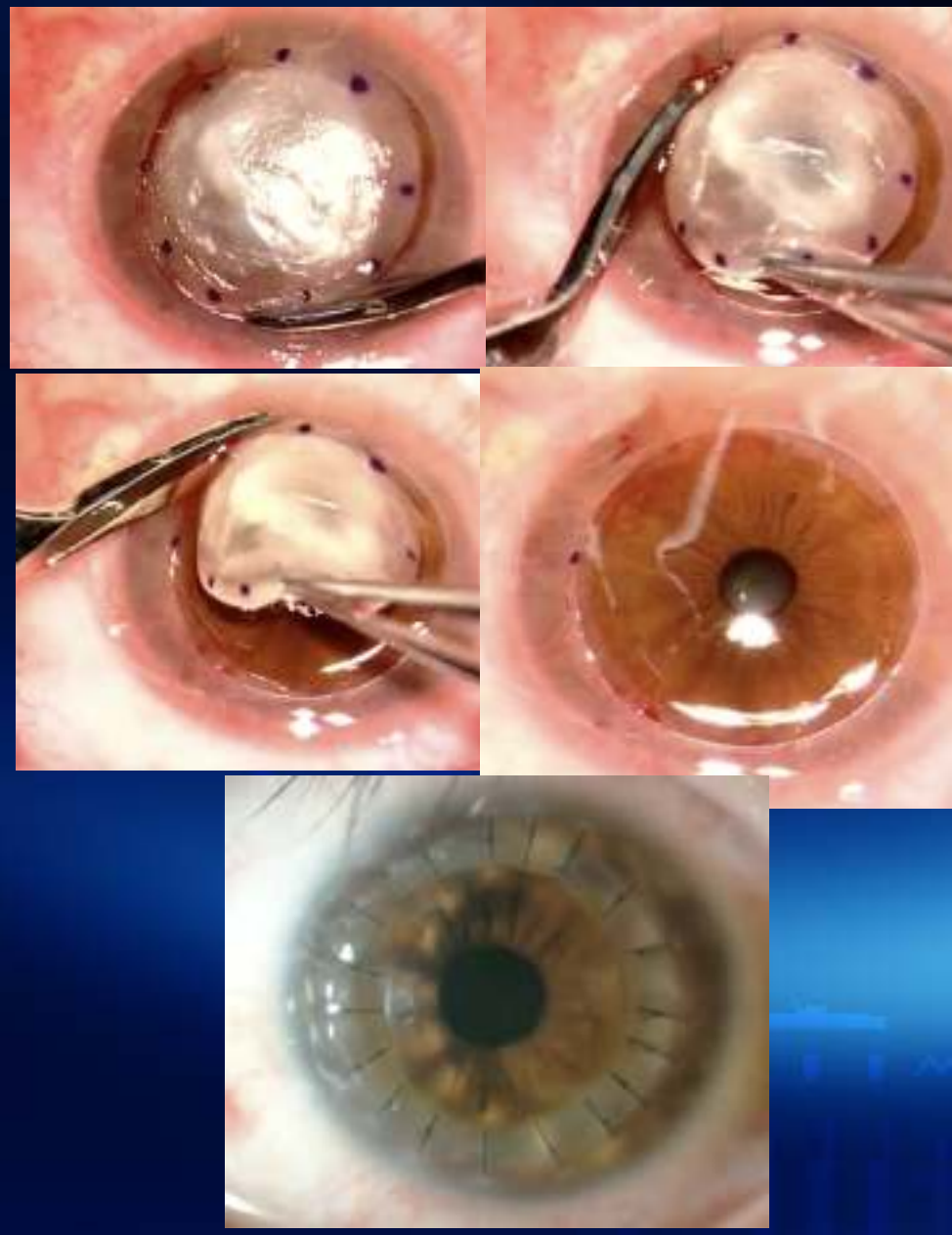

Acanthameba Keratitis:
Tips to Remember

- **Suspect acanthameba keratitis**
  - in a SCL wearer with severe pain
  - minimal cellular infiltration
  - rough corneal surface
  - no or small epithelial defect
  - no response for antibacterial treatment

- Early treatment is crucial (at the stage of perineural infiltration)
  Ring infiltrate is advanced disease

Acanthameba Keratitis:
Tips to Remember

- **Treatment with two drugs is more efficient.**
  Polyhexamethylene Biguanide 0.02% (Baquacil) and Propamidine isethionate 0.1% (Brolene)

- **Topical steroids are used only in advanced cases to control pain and severe inflammatory manifestations, in conjunction with full anti-amebic treatment.**

Acanthameba Keratitis:
Tips to Remember

- **Anti-amebic treatment should be continued for a long period (3- 6 month) even after apparent cure.**
  Patients should be continuously encouraged to keep them compliant with treatment.

- **Superadded infections may occur (bacterial and viral).**
  This may explain resistant cases.

Acanthameba Keratitis:
Tips to Remember

- **Dispensing of colored soft contact lenses in Egypt is a mess.**

- **One of the recommendations of this meeting should be to strongly urge the ministry of health to implement strong rules controlling the dispensing of soft contact lenses (colored and disposable)**

Thank You

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