

Disastrous Toxic Anesthetic Infectious keratitis



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Thanks to our Cornea team

What is New ???



A lot of cases with Ana, Toxic keratitis within few weeks



Something Wrong ???



Most of them **Bilateral**
Presented with ring infiltration

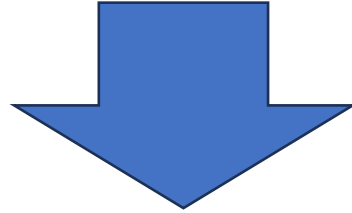


A high incidence of toxic anesthetic Keratopathy

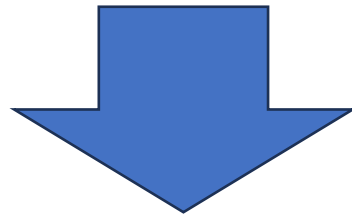
Disaster

- More than 19 cases of Factitious keratitis within few weeks
- All are chronic abuse of topical anesthetic eye drops
- Most of them working in metal welding
- All females are contact lenses wearers or PRK with topical abuse
- Most of them with psychic troubles
- Most of them are bilateral
- All the patients using the same type of topical anesthetics drops

Frequent abuse



Stopping neural conduction along axons
and dendrites



Nerve damage and dysfunction
lead to chronic pain and inflammatory reaction

Local effects on the corneal surface

- Inhibit the epithelial cells to migrate and divide
- Loss of microvilli
- Anesthetic deposits on microvilli increased desquamation
- Reduced number of desmosomes and cell loss
- Preservatives in topical anesthetics may also contribute to ocular surface toxicity.

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Tear Film

Glycocalyx

Microvilli

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Superficial cells

Wing cells

Basal cells

Basal lamina

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Hemidesmosomes

Desmosomes



Why **pain** in spite of
topical anesthesia ??

Pain

**Nerve dysfunction
And
Damage**

Inflammatory
reaction and pain

Inhibit cell division
and migration

**Persistent
Epithelial
defect
PED**

More
pain

Responsibility

Pharmacists

M
O
H

ophthalmologist

1

MOH

Lack of Occupational
health supervision

Welding
metals



Responsibility

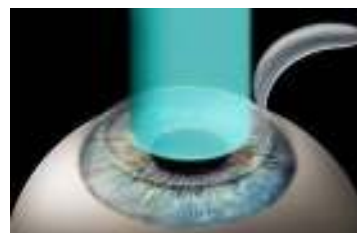
2

Pharmacists

3



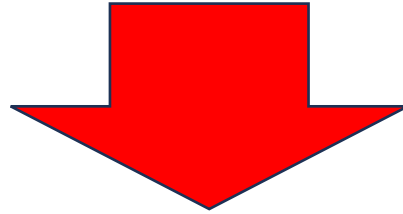
Refractive
Surgery



Contact
lenses

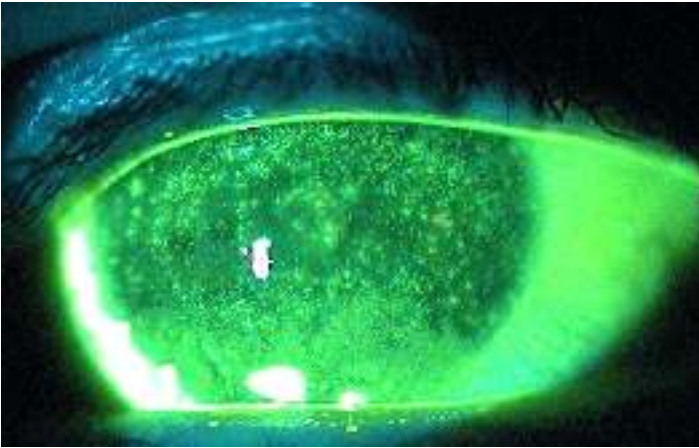


Presentation



Similar in the most of cases but
in stages

Usually pass in stages



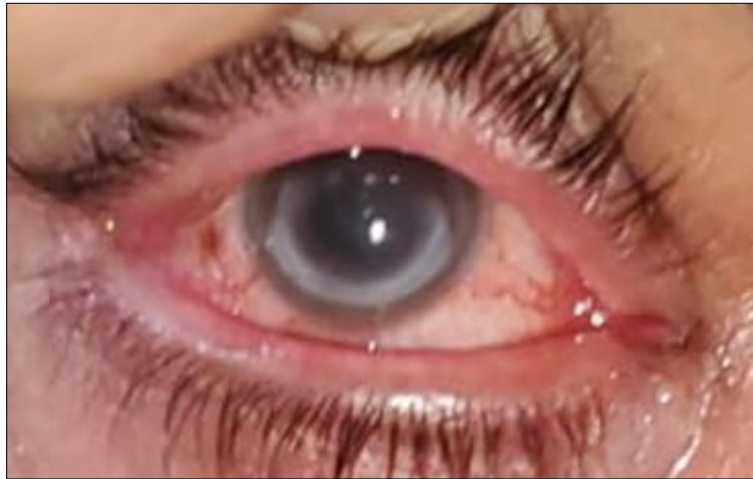
SPK



PED



Ring infiltration



Ring infiltration

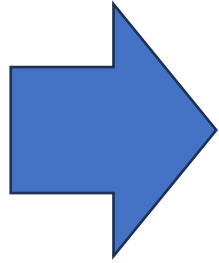


Thinning



Meting

As a rule



Any Ring infiltration

Exclude

Acanthaembic keratitis

Specially with CL wearers



Some cases
With

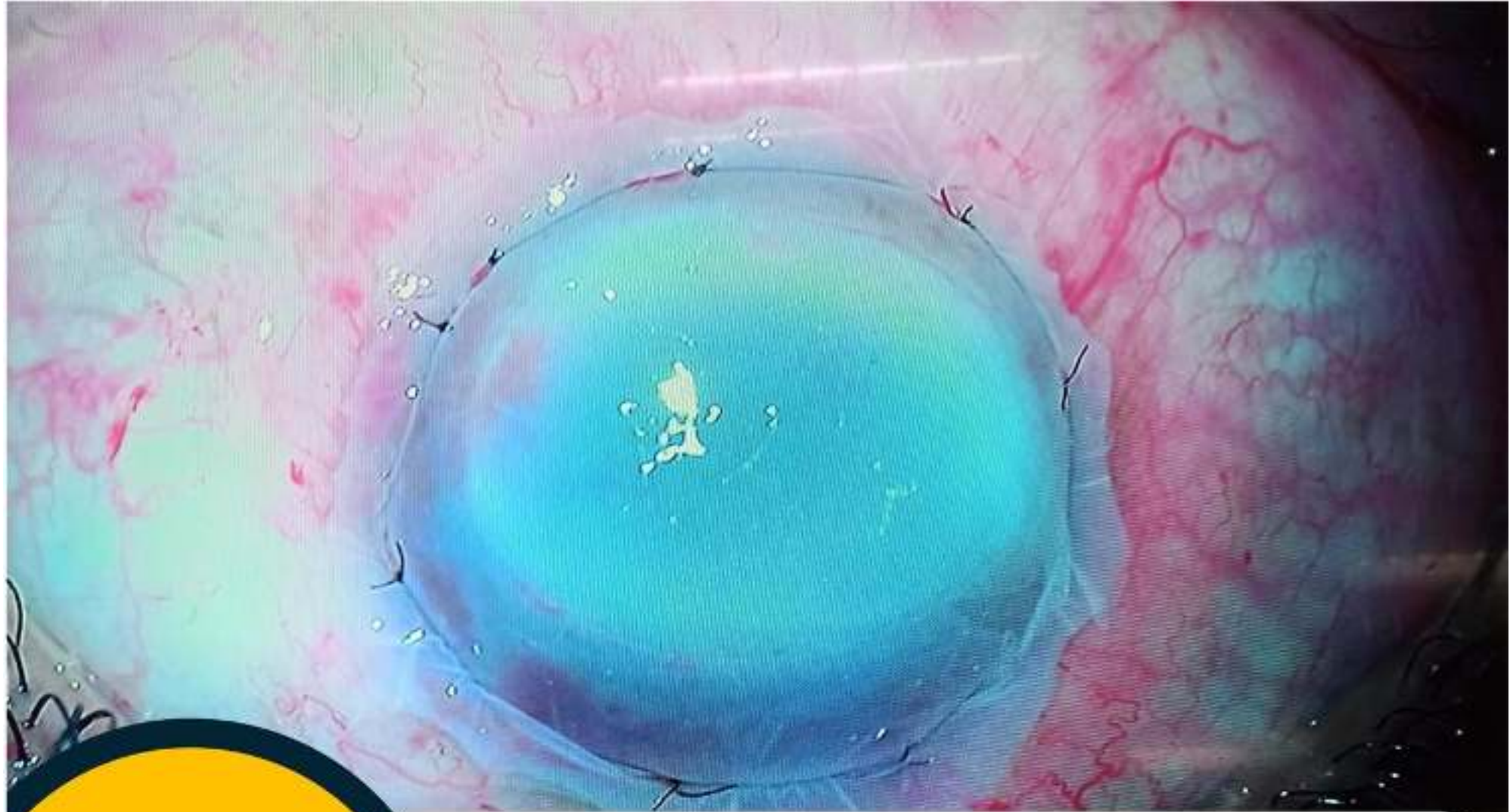
Toxic anesthetic Keratitis

Case 1

Female 26 years with chronic abuse after chemical trauma



We decide to do AMT



OD

After AMT



4 sep 2024

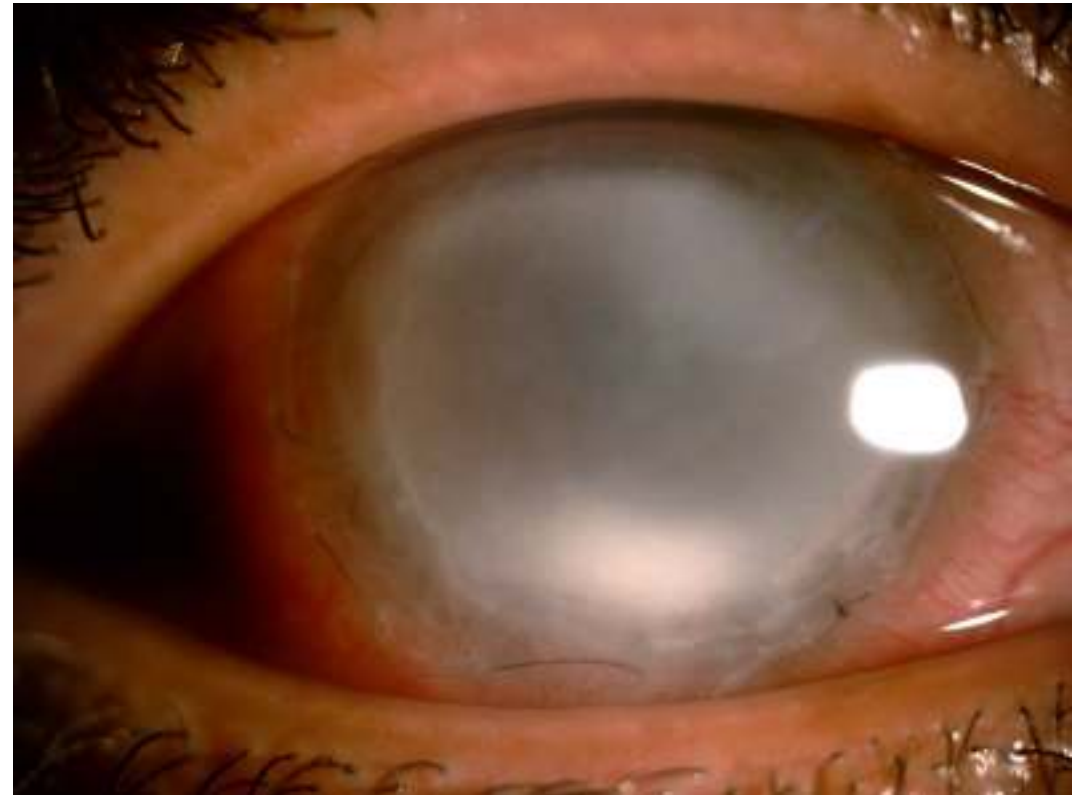


OS

After AMT

4 sep 2024

Late postoperative



Case 2

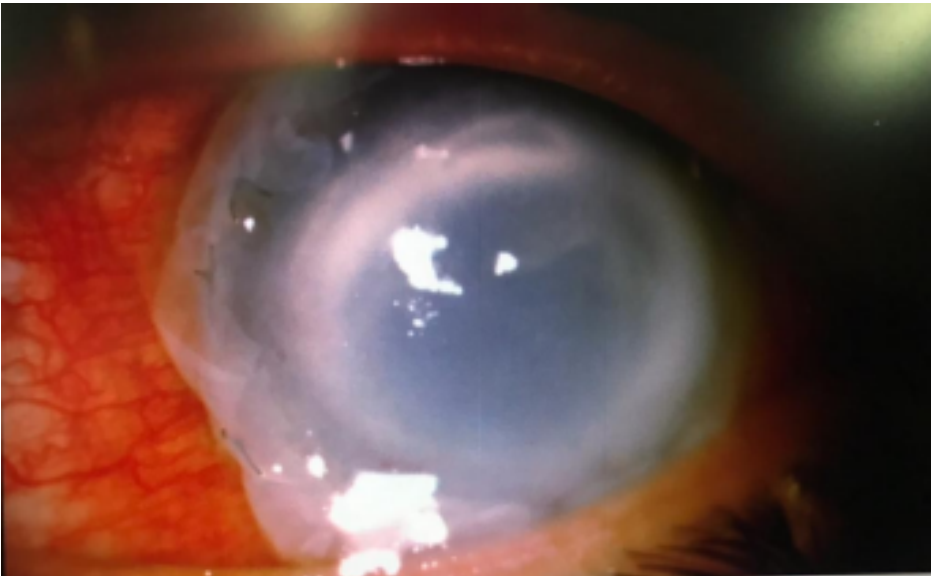
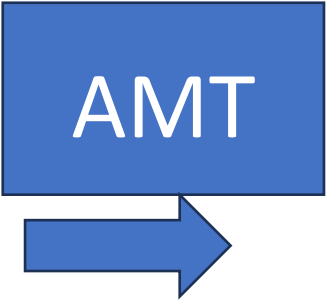
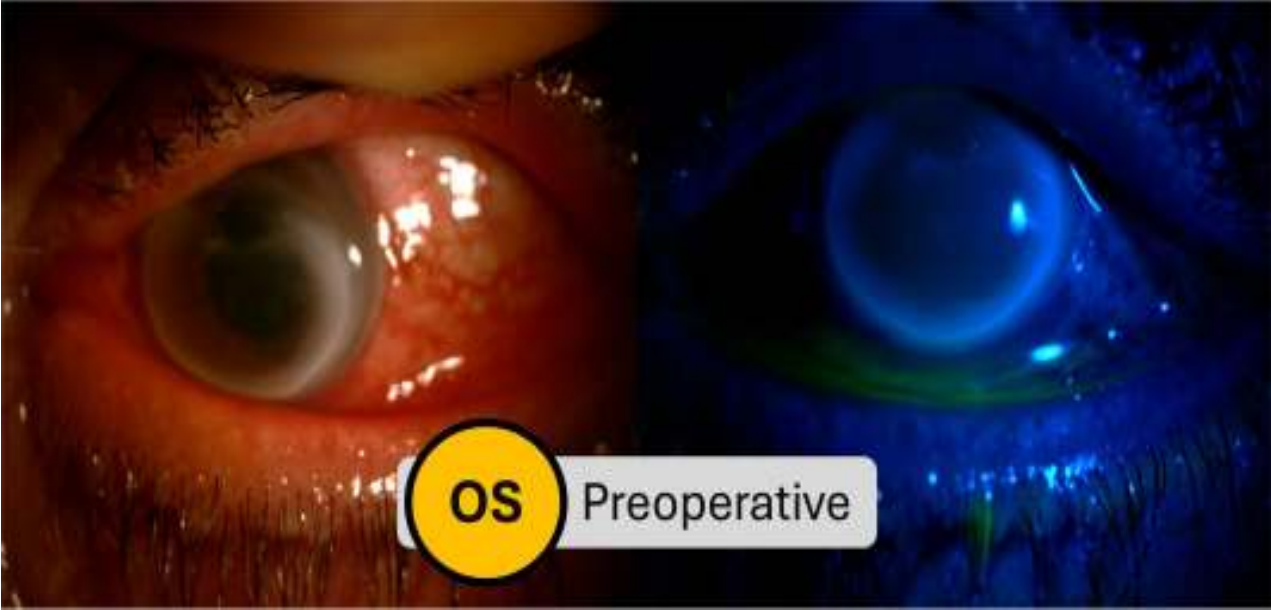
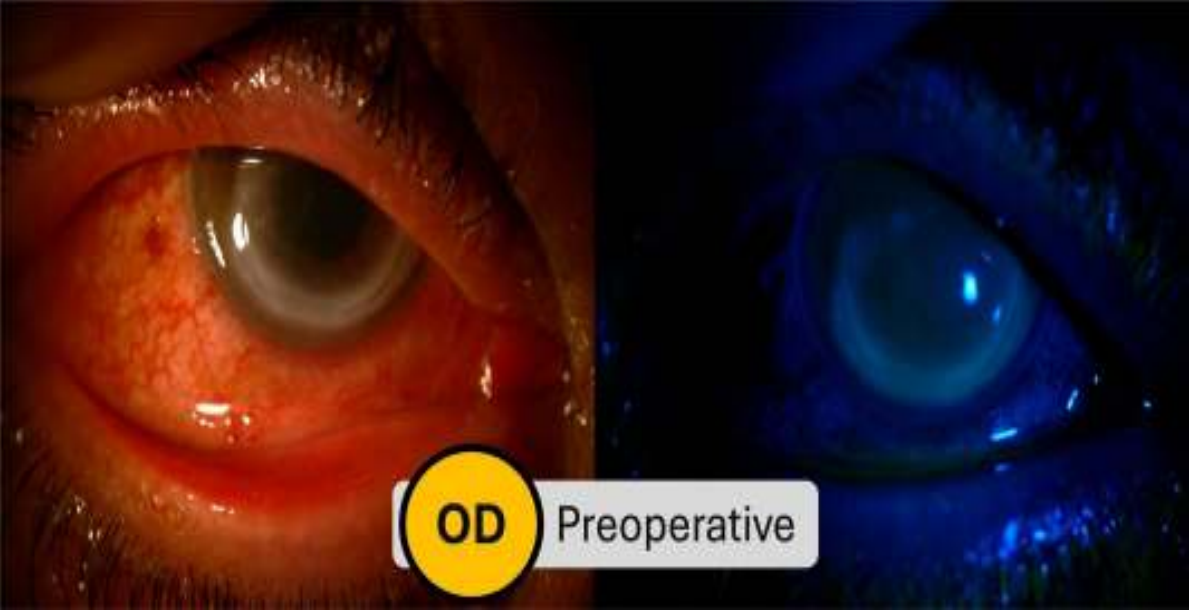
- A male patient 20 years
- Works in welding metals
- Not wearing safety goggles
- Chronic use of topical Anth. since long time
- Sever pain in both eyes



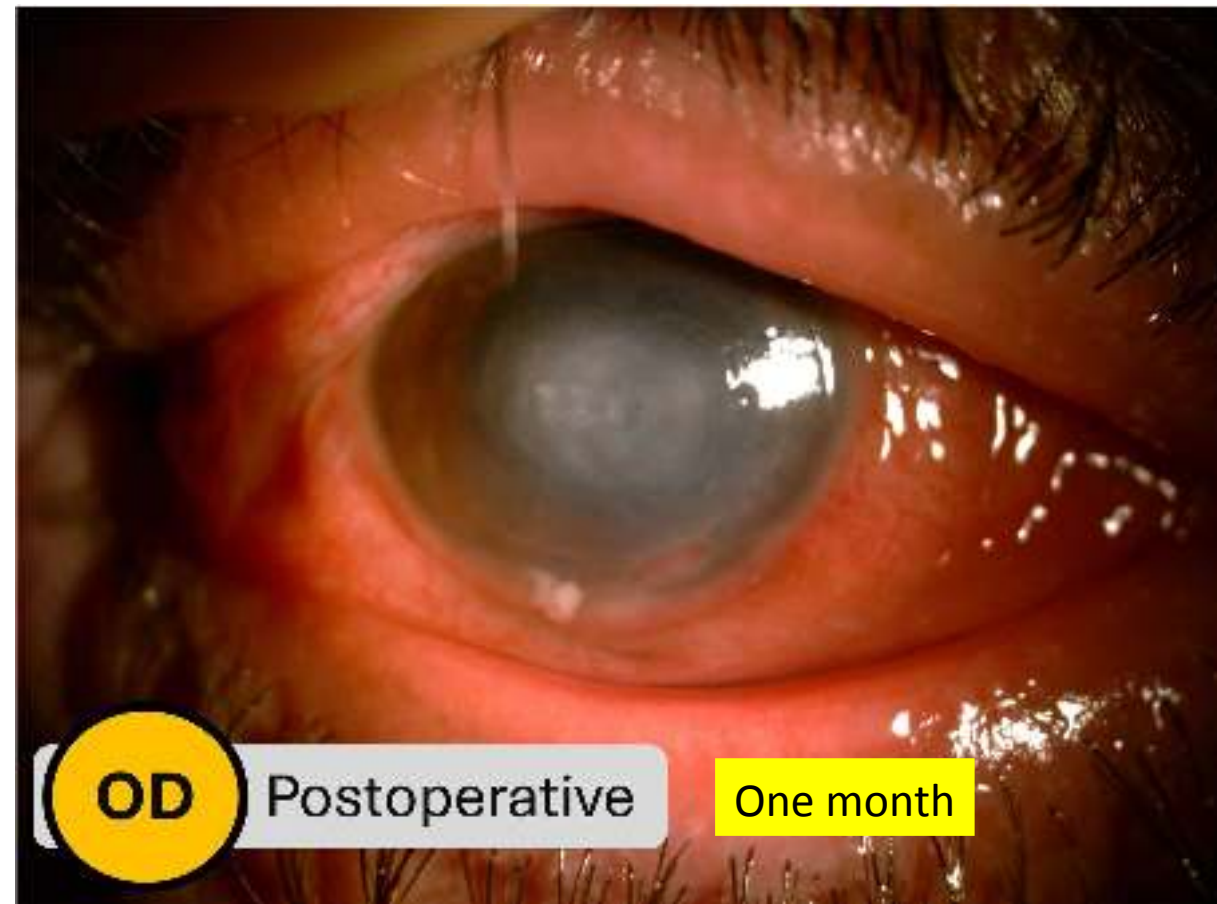


Preoperative





Postoperative OD

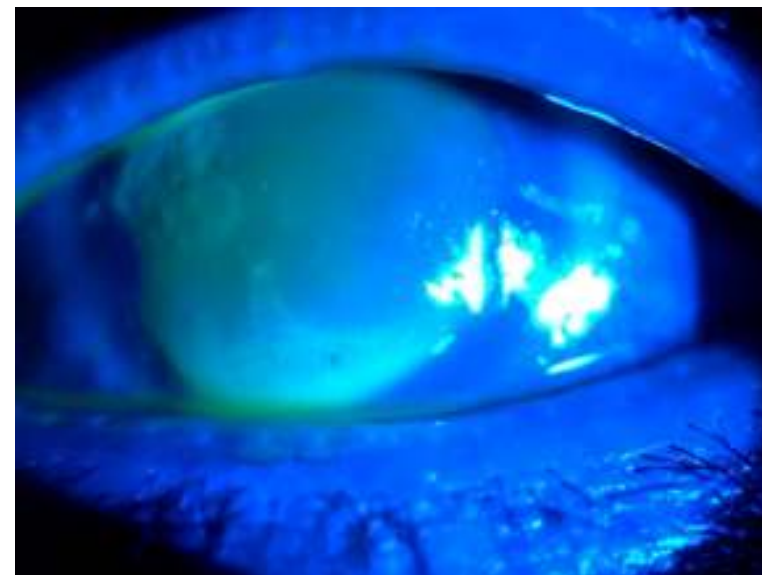


Case 3

- Anisometropia Wearing CL since long time to her left eye
- Chronic irritation from CL in last months
- She didn't change her CL since more than 1 Y
- She used to put topical anesthesia -

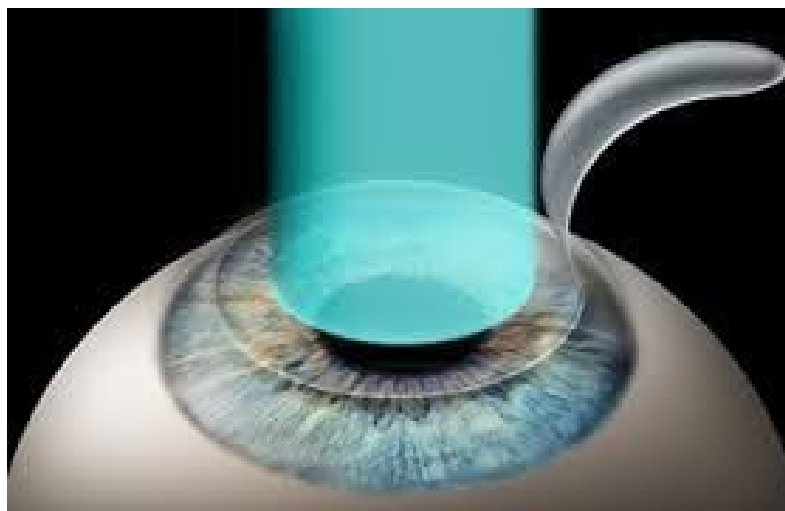


Presented with complete stromal ring and PED



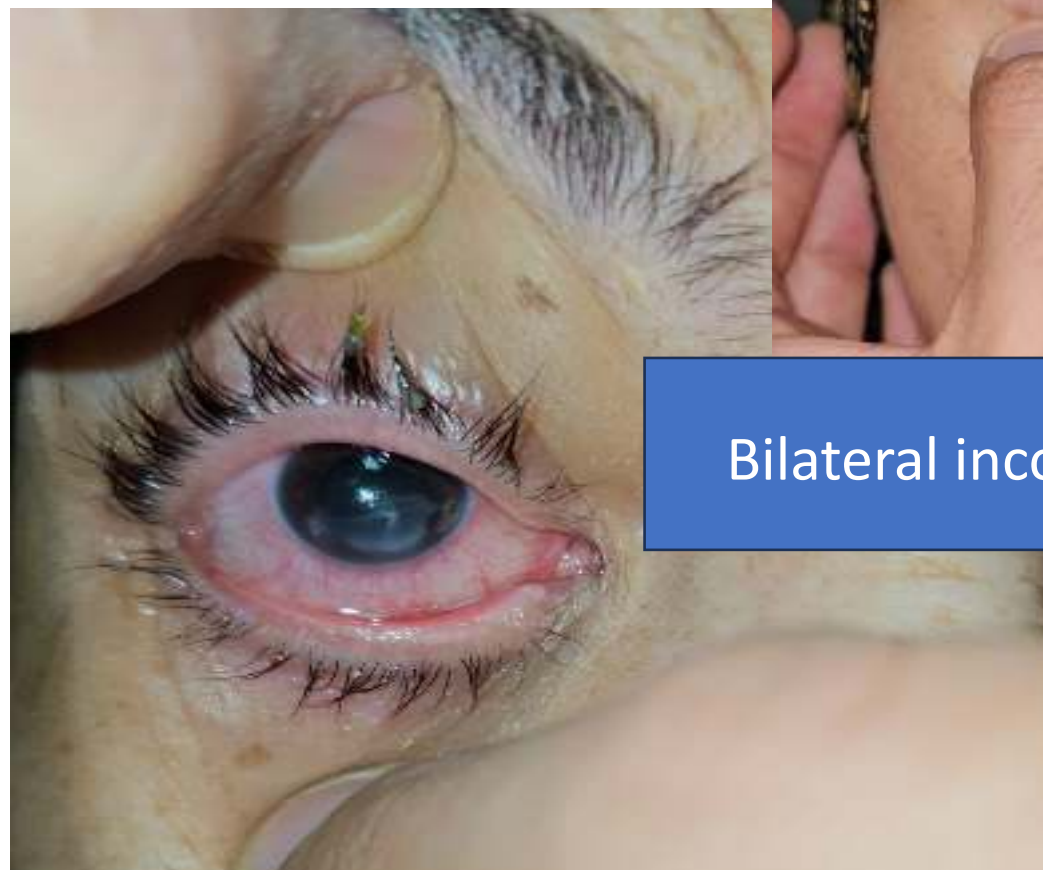
Immediate AMT

Case 4



Female 55 years ???

- History of Refractive surgery since 25 days
- Ordered from her doctor to use topical anesthesia when feeling pain
- Last week she used it frequently
- Sever redness and pain in both eyes



Bilateral incomplete stromal rings

After 1 week of treatment

Much improvement



Only Autologous serum and Lubricant

Before



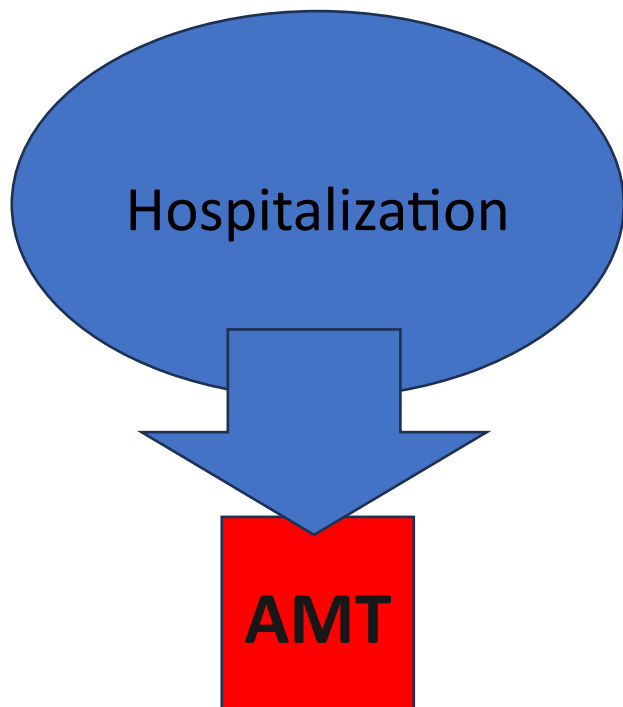
1 week



Case 5

Just since few days
8 bottles of topical anesthesia
Per
One day





Last case

A misleading case

Case presentation

- Female
- 23 years
- Rented a colored CL from hair dresser
- Manifestations :

Pain ++++

Photophobia OD

Lacrimation

Appear after 2 days of CL wear

- **History** of chronic abuse
of **topical anesthesia** since long time



First presentation



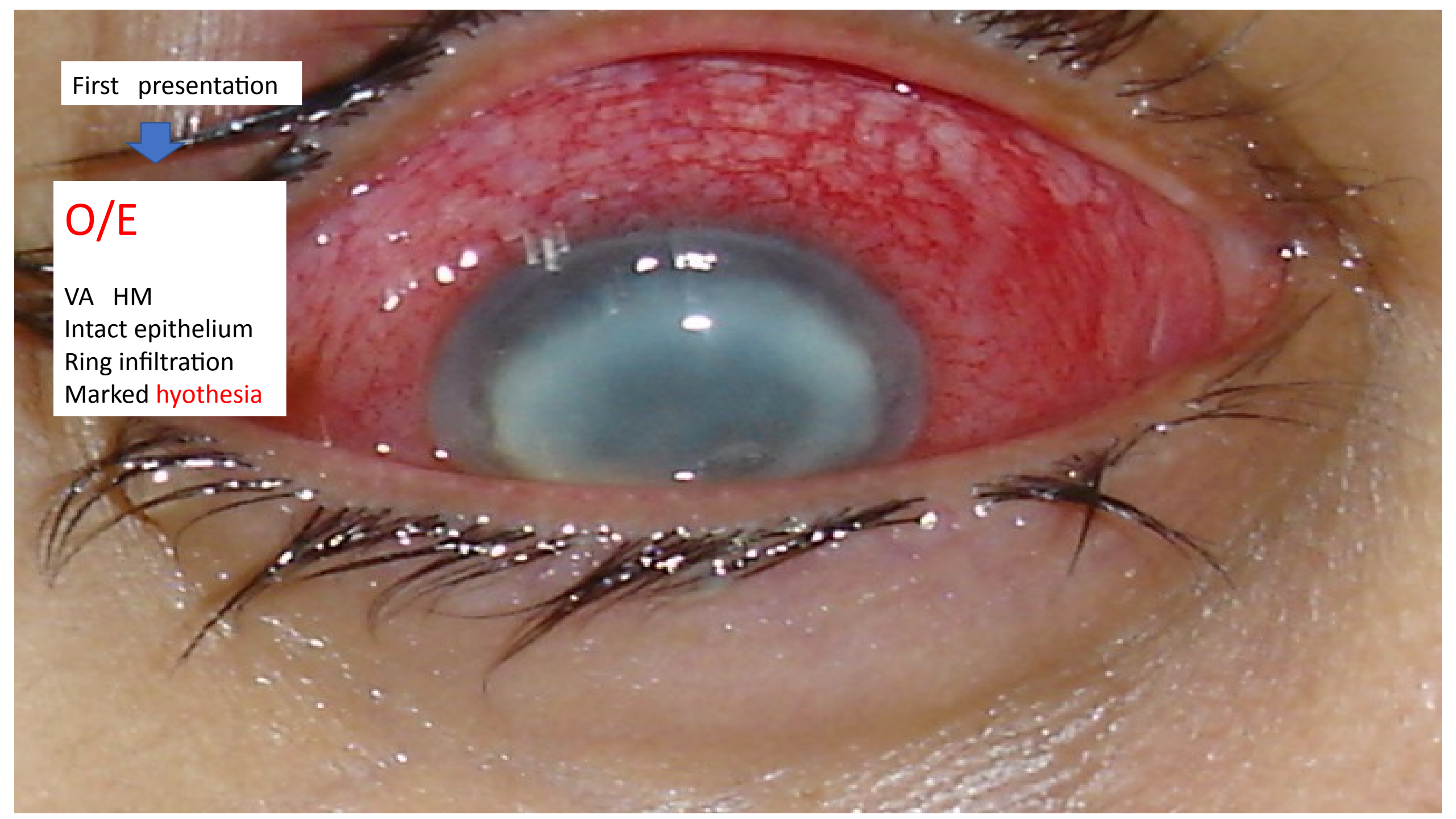
O/E

VA HM

Intact epithelium

Ring infiltration

Marked **hyothesis**



History

Initial Drug used

Moxifloxacin eye drops

Cycloplegics

Lubricants

For 1 week



No improvement

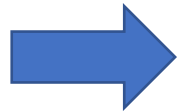
History

Patient was examined by other colleague who add

Brolene eye drops was prescribed for 10 days
without improvement

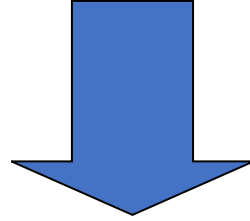
Diagnosed and treated as **Acanthameobic** keratitis

Depending



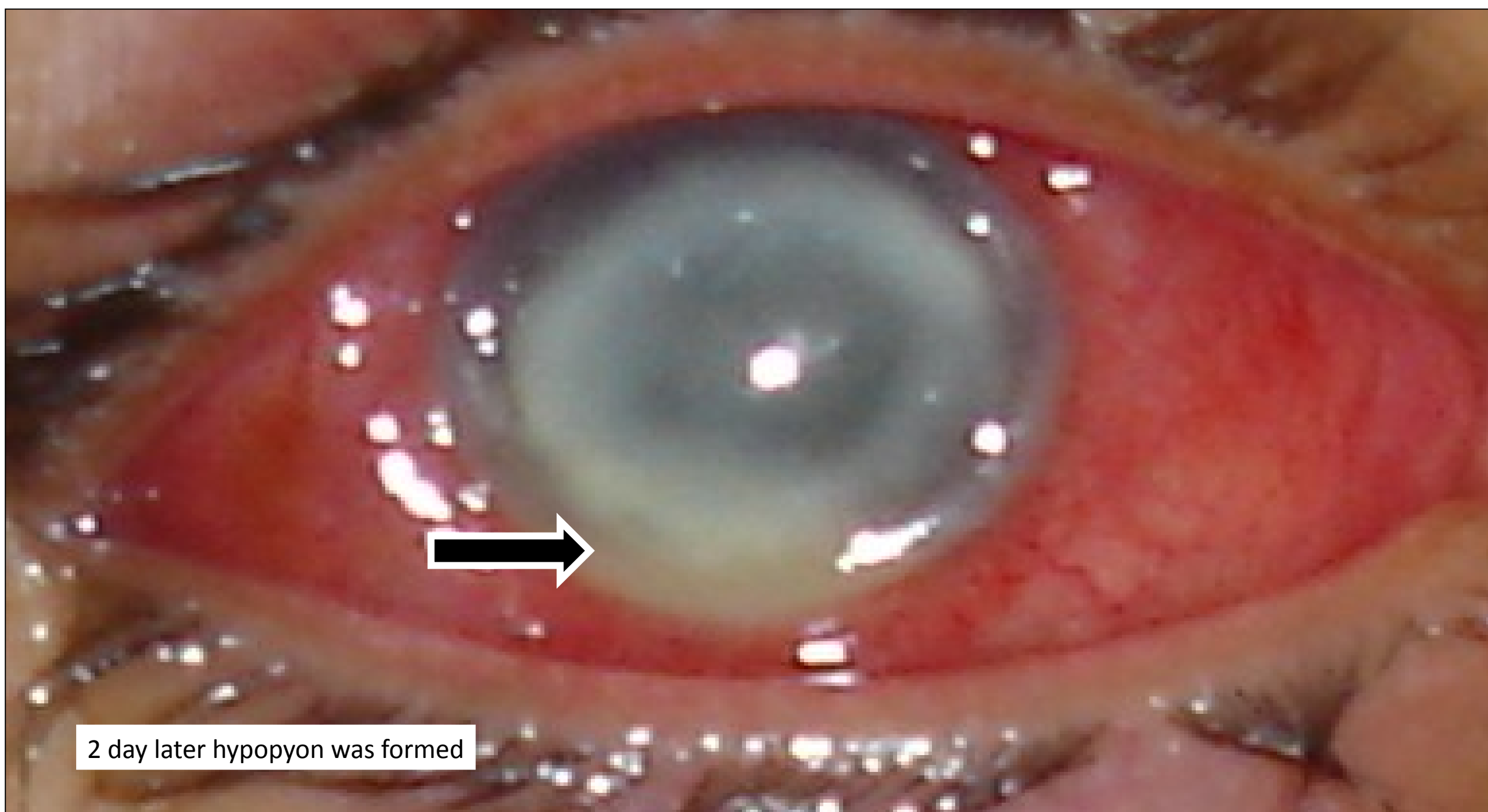
- CL of unknown source
- Sever intolerable pain ++++
- The peripheral ring infiltration

Patient was admitted



Culture

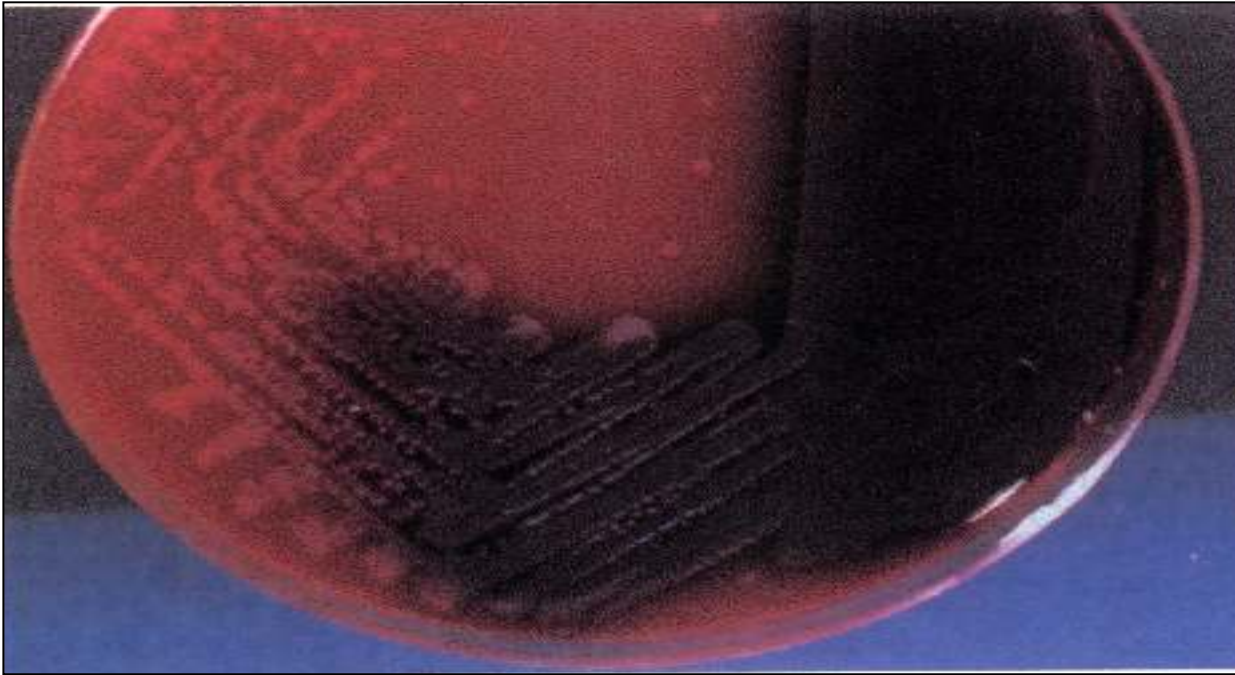
A culture was done from both cornea , contact lenses and solution after cessation of all anti-infective for 1 day



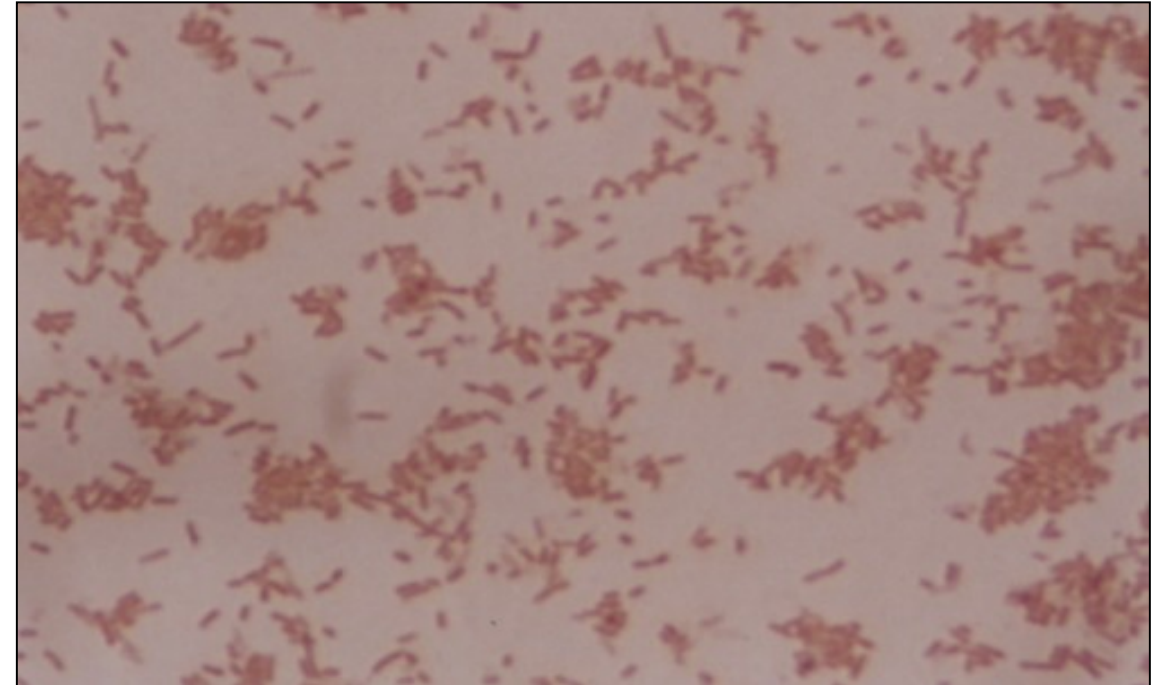
2 day later hypopyon was formed

Culture results after 2 days

*Pseudomonas with
Negative fungal growth*



Culture on blood agar



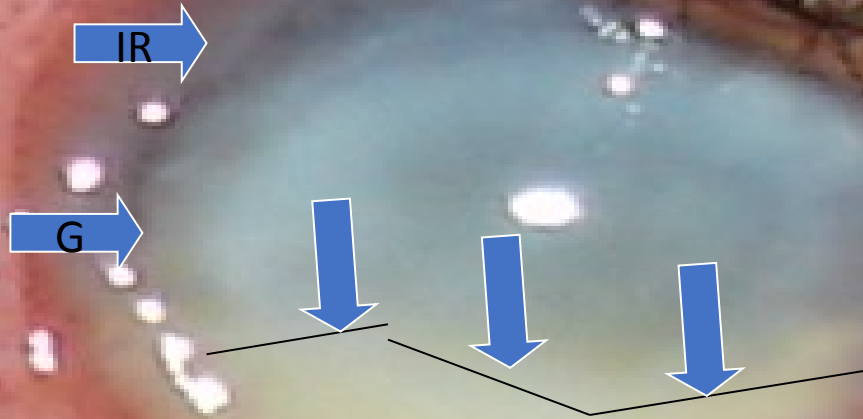
Microscopic Picture

We add

Tobramycin and Gatifloxacin
according to culture results

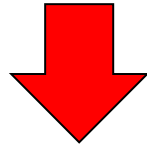
After one week

- Appearance of gutter & Immune ring
- Hypopyon without level {coagulum}



With these new signs

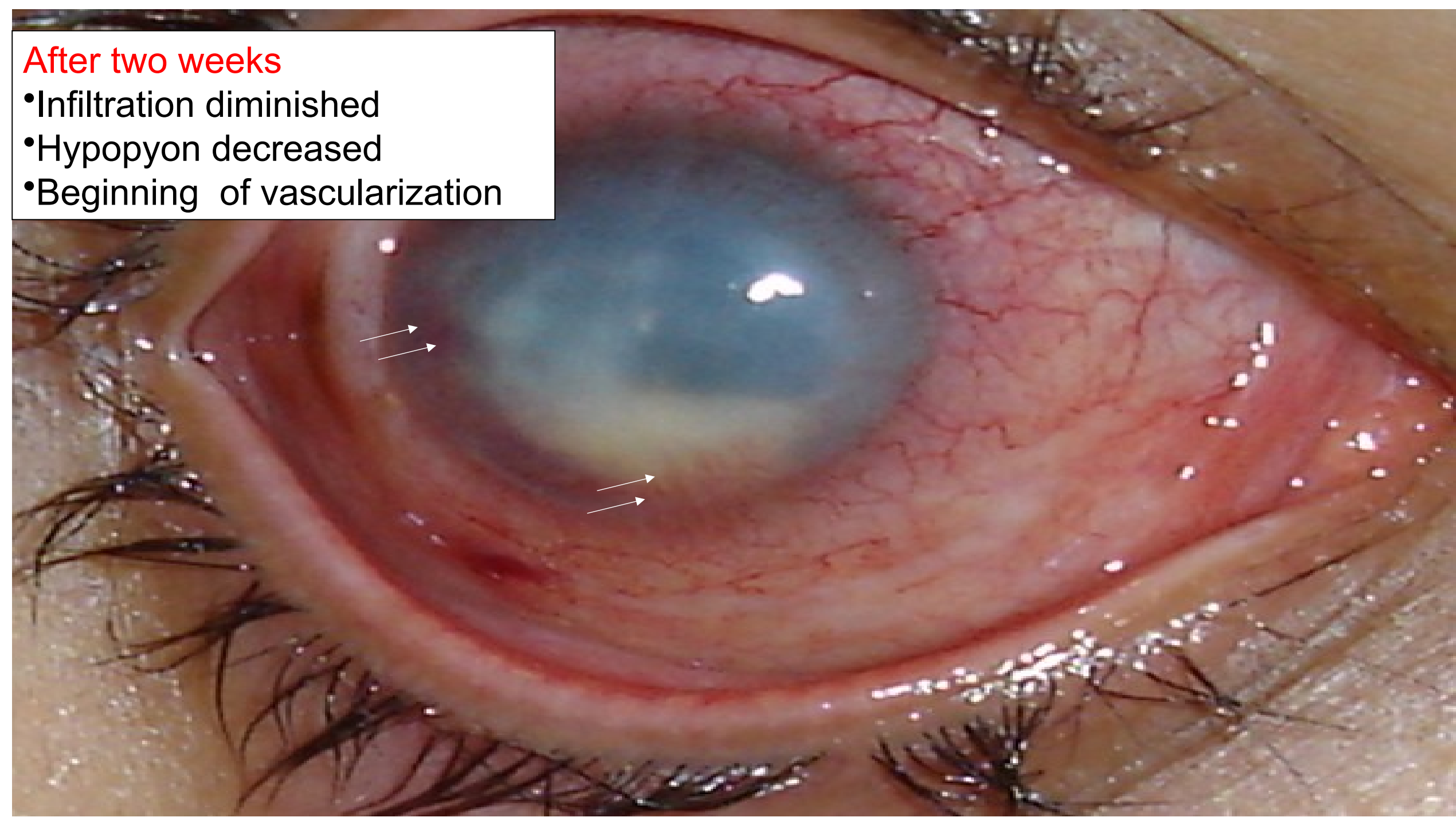
We add antifungal therapy:

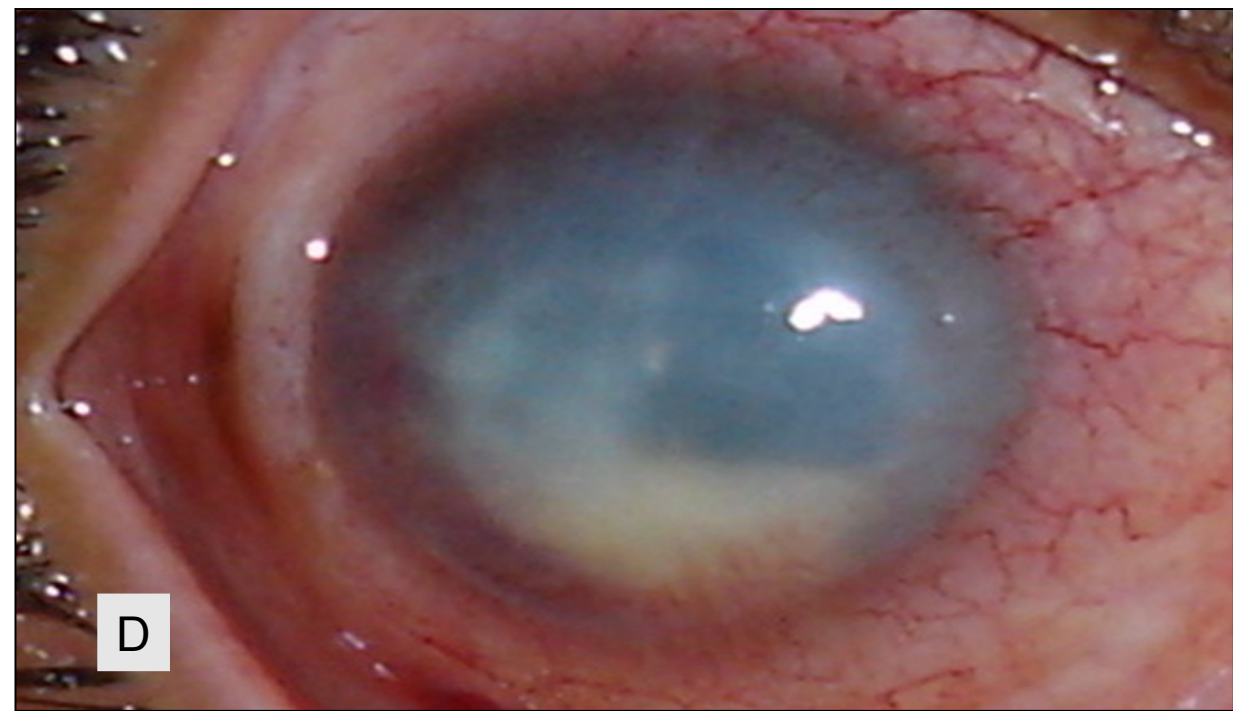
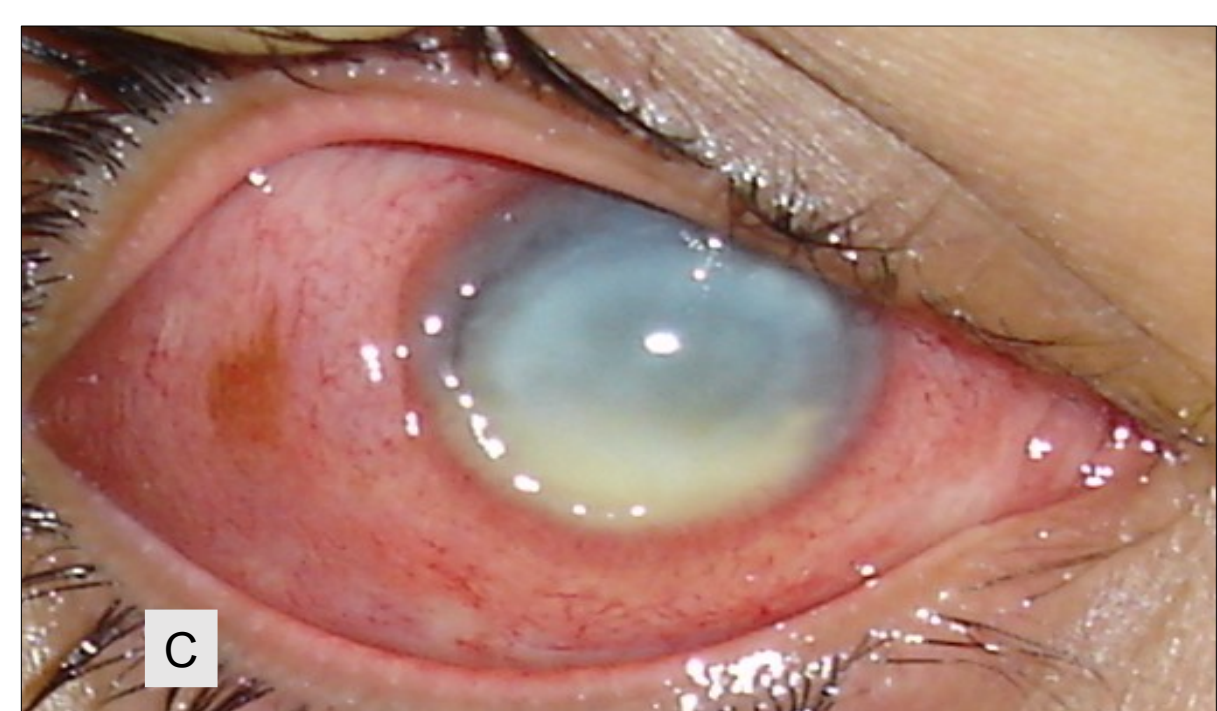


- Local Fluconazole 2% (Diflucan)
- Natamycin eye drops

After two weeks

- Infiltration diminished
- Hypopyon decreased
- Beginning of vascularization





Why misleading ???

- Culture positive for pseudomonas
- Feature of Acanthamoeba with CL
- Appearance of fungal features
- Improvement with antifungal therapy

In our case the possible diagnosis

Is

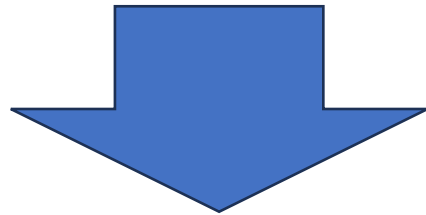
Toxic Anesthetic Keratitis

With

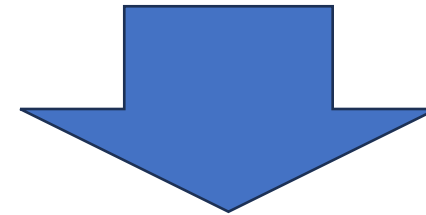
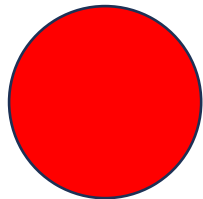
Secondary Bacterial and Fungal keratitis

**What We Can
Do ???**

How to deal with this Problem



Prevention



Treatment

1

MOH

Lack of Occupational
health supervision

Welding
metals



Instruction

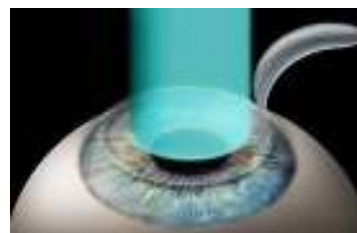
2

Pharmacists

3



Refractive
Surgery



Contact
lenses



Management

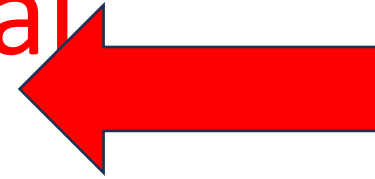
Hospitalization is essential specially in bilateral cases

• Medical

- Preservative free Lubricants
- Dexapanthanol eye drops
- Non steroidal anti inflam eye drops
- Vit .C in large doses
- Cycloplegic eye drops
- Autologous serum eye drops
- Insulin eye drops
- Amniotic membrane extracts drops
- Systemic Tetracycline

• Surgical

- AMT
- Patch graft
- PKP
- Sub tenon lidocaine injection in sever pain
- Corneal neurotization



Our experience

AMT

Hospitalization

Contact lenses

Systemic pain killer

Non steroidal eye d

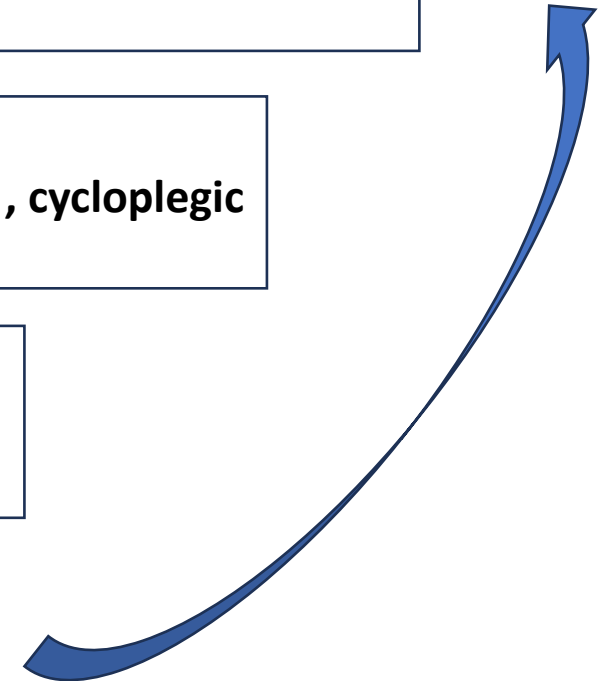
Lubricants SDU

Mydriatic , cycloplegic

Autologous serum

Dexapanthanol

Insulin eye drops



No role
of
Corticosteroids in treatment



Melting

No role
of
Antibiotics except in PED



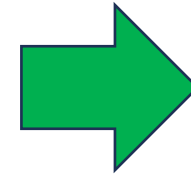
Toxicity

Autologous Serum

- Enhance re-epithelization of the PED

- Regeneration of the neurotrophs and decrease corneal scarring

Insulin eye drops



PED

1 IU/ml

0,1 ml of 100 IU fast acting Insulin to 10 ml lubricant

Improve wound healing
by
regulating oxidative and inflammatory responses

Cyclosporine 0.05%

with or without Autologous serum

Can help corneal nerves regeneration and its
Immunosuppressive effect can prevent immune
Ring formation

AM

Eye drops

Preparation

- 1- Wash with saline
contains 5% penicillin and streptomycin
- 2- slicing the AM into small pieces
- 3- submerging in liquid nitrogen
- 4- this mixture is
 - Homogenized
 - Centrifuged
 - Sterilized



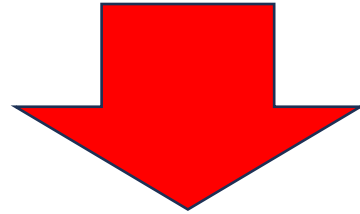


Nerve Growth Factor Eye drops

OXERVATE eye drops

Not available in Egypt

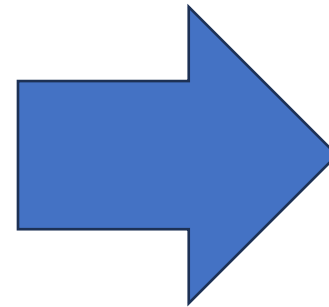
Again



Our Message

**Never to Prescribe Topical
Anesthesia**

**Once used
Always
used**



Addiction

Thanks

شكرا

