Ophthalmology SAQ
By: 430 Ophthalmology team

Ocular pharmacology and toxicology

Done by: Kholoud Al-Amari

❖**Note: please refer to the original lecture given by the doctor**

The pictures were sorted by:
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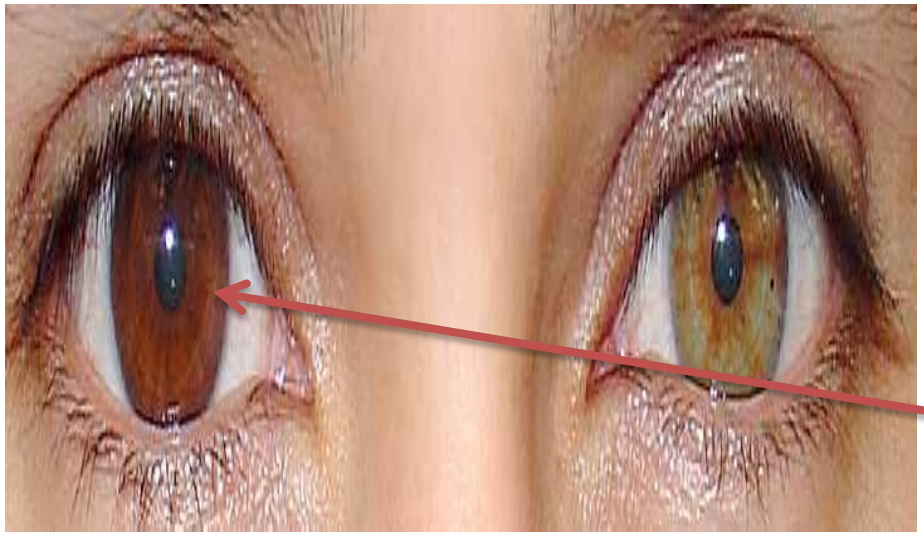
-Ahlam Abdullah Al-Sulaiman
-Lamis Atyah Al-Malki

Heterochromia iridis caused by prostaglandin analogue



- Hx of glaucoma, she is on medication that decrease iris pigmentation

1. Which eye is the abnormal one in the?

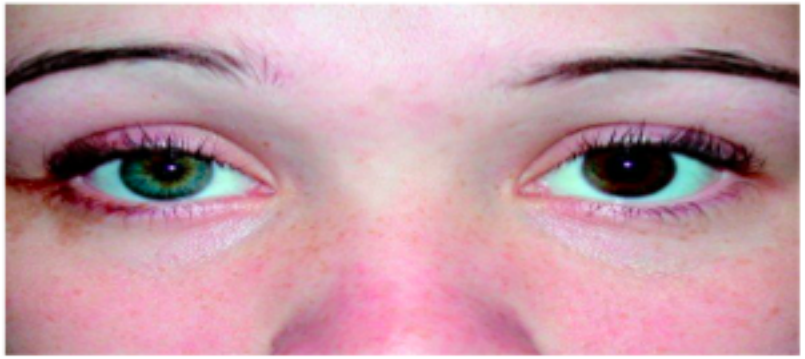
Right eye 1st picture

left eye in the 2nd picture.

2. Medication she used ?

Prostaglandin analogues

- Q: This a picture of a patient who's using eye drops to treat her condition "Glaucoma", what is the Latin name of this side effect?



They didn't mention that its prostaglandin you should know from the side effect + glaucoma therapy,,
Mechanism of action: increase uveoscleral outflow
*Not same pic but similar the effected eye is the left one

A: Heterochromia iridis (change in color of one iris= gets darker)

Q: Name another side effect cause by the same drug?

A:

Longer & darker Lashes
Periorbital Skin Hyperpigmentation
Conjunctival hyperemia

Antimuscarinic = Cholinergic antagonists

Note :They put an atropine eye drops on the table and the name of the drug was written on the back of the pack

➢ **The drug in the picture is ?**

- Muscarinic agonist
- **Muscarinic blocker**
- Nicotinic agonist
- Nicotinic blocker
- Non of the above

Antimuscarinic = Cholinergic antagonists

- E.g. tropicamide, cyclopentolate, homatropine, scopolamine, atropin
- It will cause : **mydriasis (by paralyzing the sphincter muscle) with cycloplegia**
- Uses: fundoscopy, cycloplegic refraction, anterior uveitis .
- Treatment by(DC= discontinue) or use of anti-dose physostigmine
- **Doctor note : Usually anticholinergic drugs are with Red top bottle.**

Antimuscarinic = Cholinergic antagonists

- **Name of the drug is :**
- **Cyclopentolate**

3) This medication used for:

a. Examine the funds

b. Examine the cornea.

c. Examination of posterior chamber.

d. None of the above.

The effect of this drug will remain for :

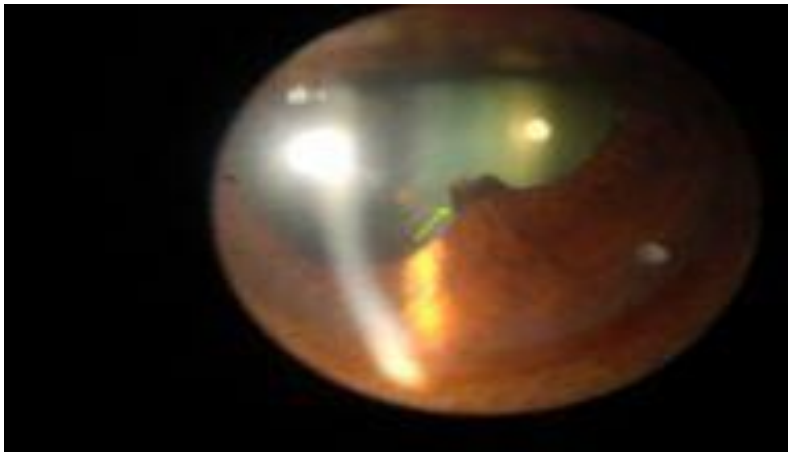
A- 3 to 4 hours

B- 4 to 5 h.

C- 6 to 8 h.

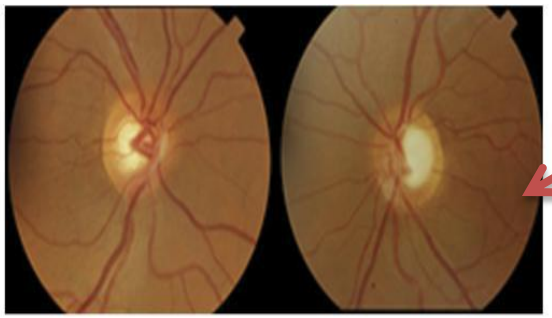
D- 12 to 24 h.

Cholinergic antagonists effect

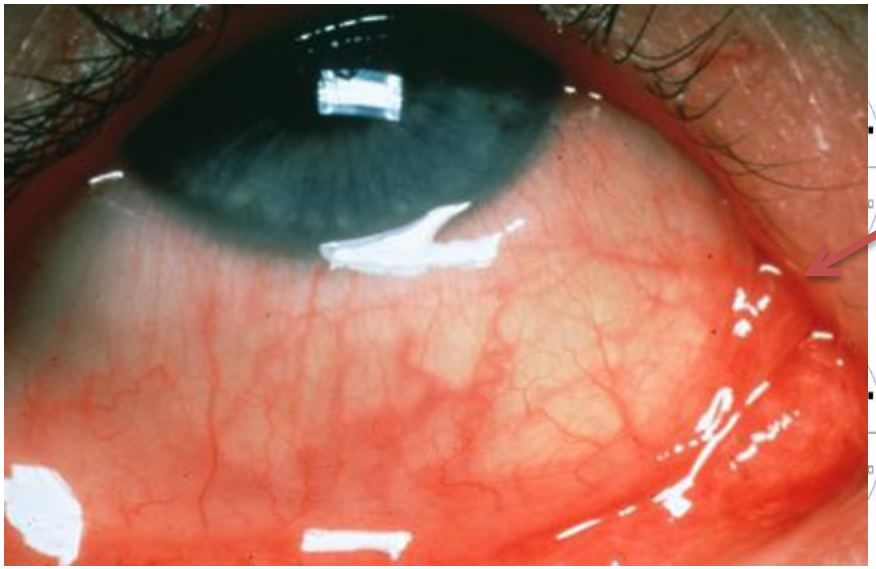


- **posterior synechiae**

a

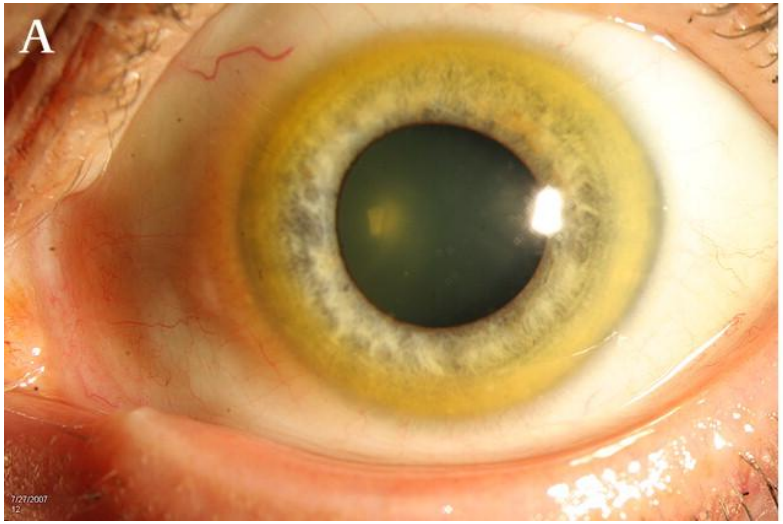


- Cupping field defect

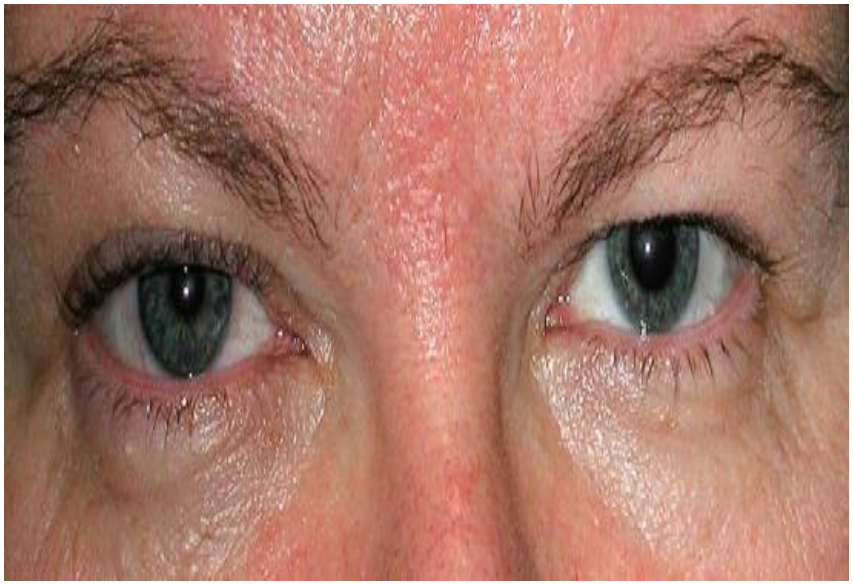


- Chemosis

I don’t know ? Maybe cataract

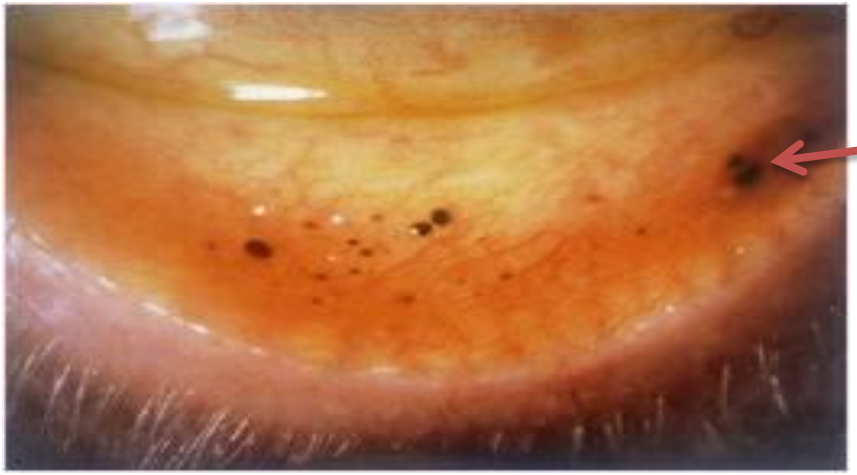


Miosis in the left eye



- **Hx of using Cholinergic agonists**
- E.g. pilocarpine, acetylcholine (miochol), carbachol (miostat)

conjunctival adrenochrome



- **Hx of using : (non selective adrenergic agonist)**
- e.g. Epinephrine

bull's eye maculopathy

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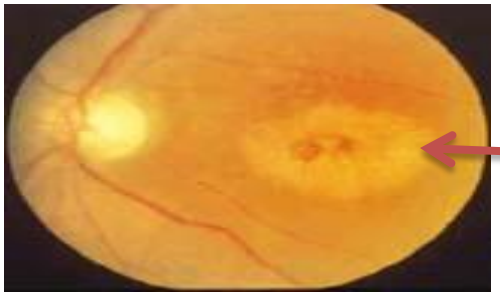
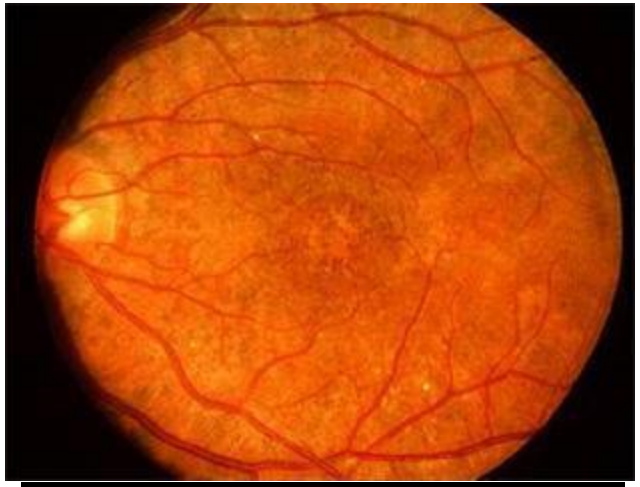
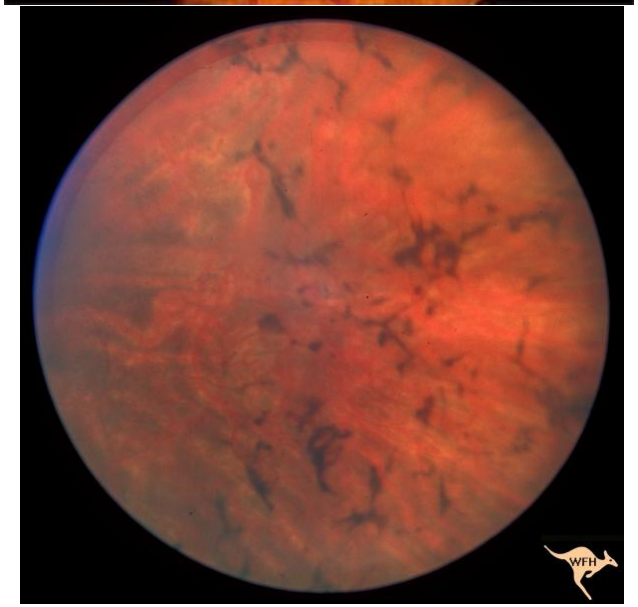


- **Hx of using chloroquine, hydroxychloroquine ,**
- Discrption : The macula shows an area of hyperpigmentation in the fovea which is surrounded by a zone of depigmentation. The depigmented zone is in turn surrounded by an annulus of hyperpigmentation.

Pigmintary retinopathy





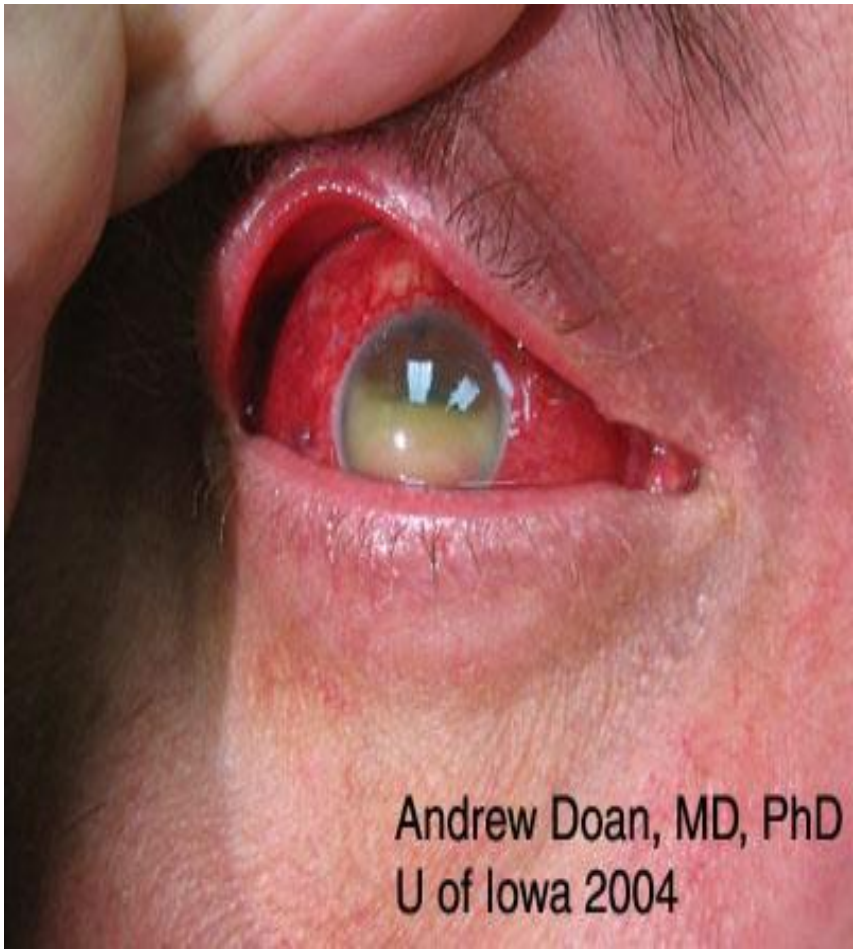
- **Hx of using high doses of thioridazine.**

Preseptal cellulites

Rx: using orally treatment of

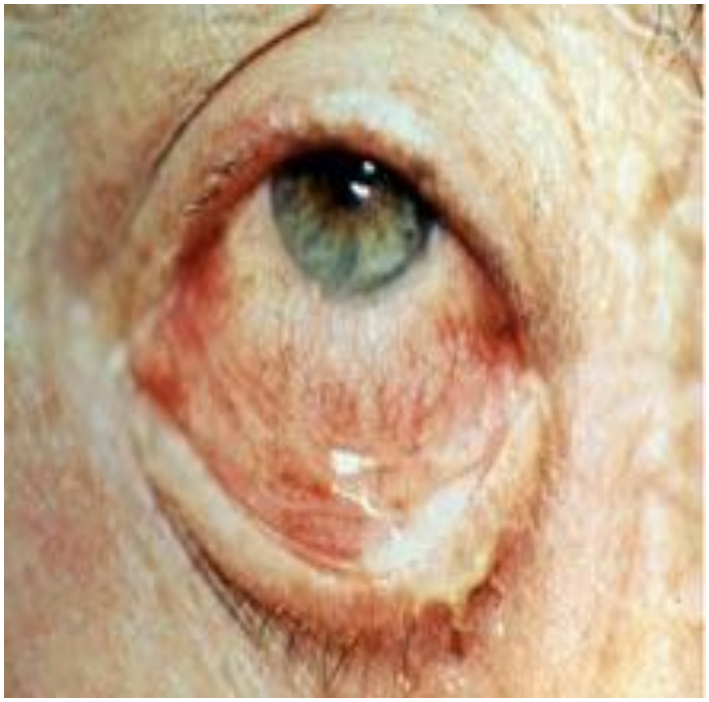
- e.g. amoxycillin with clavulonate, cefaclor

Endophthalmitis



- This patient presented with red painful eye post cataract surgery, there is pus in the ant.champer(hypopyon).
- It's Endophthalmitis → ER case
- Treated by : intravitreally antibiotic that will cover gram(-/+)+ intravitreal sample for culture

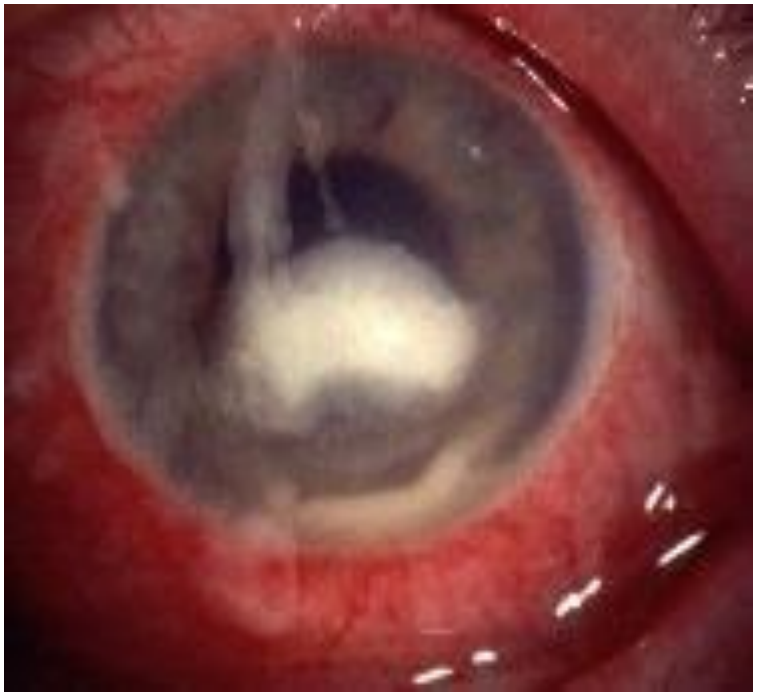
Bacterial conjunctivitis



- **This picture show Muco-purulent discharge with redness in the conjunctivae**

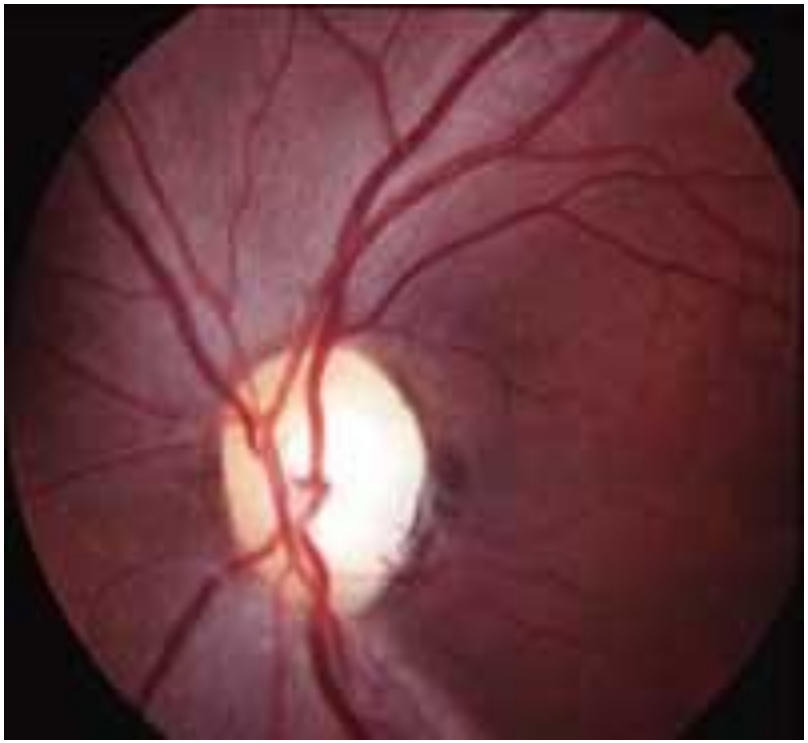
(bacterial conjunctivitis)

Corneal ulcer



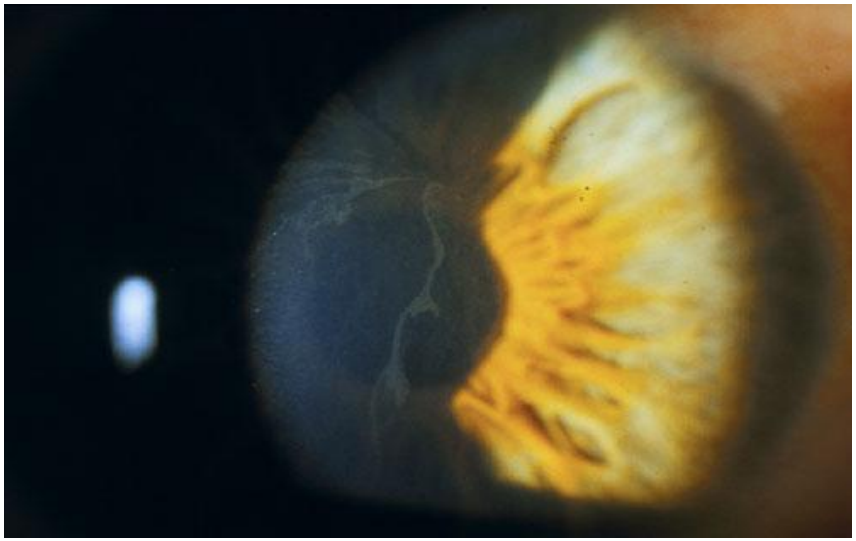
- **This picture show hypopyon (corneal ulcer)**

Optic neuropathy



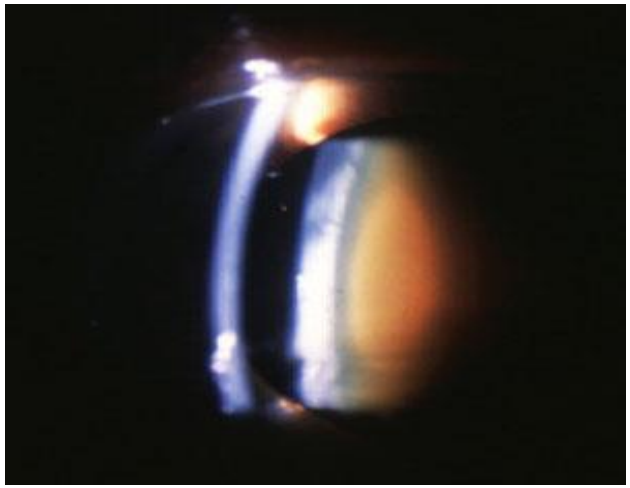
- **Hx of using Amiodarone**

corneal vortex keratopathy (corneal verticillata)



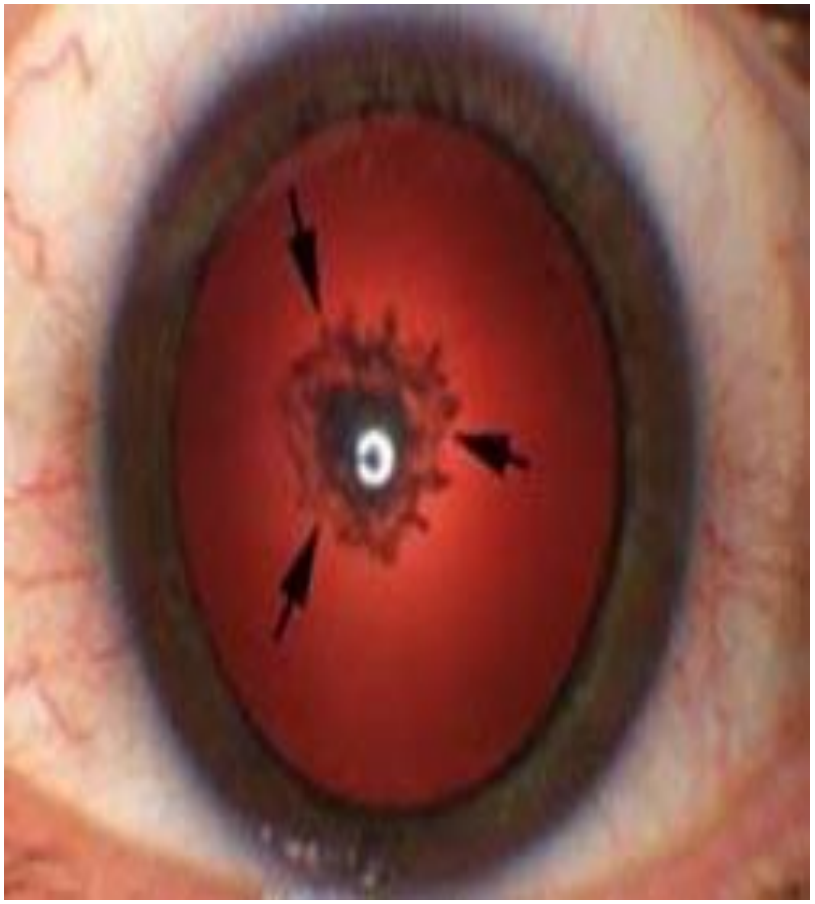
- Hx of using **Amiodarone** or using **Chloroquines**
- (e.g. chloroquine, hydroxychloroquine) .

Cataract



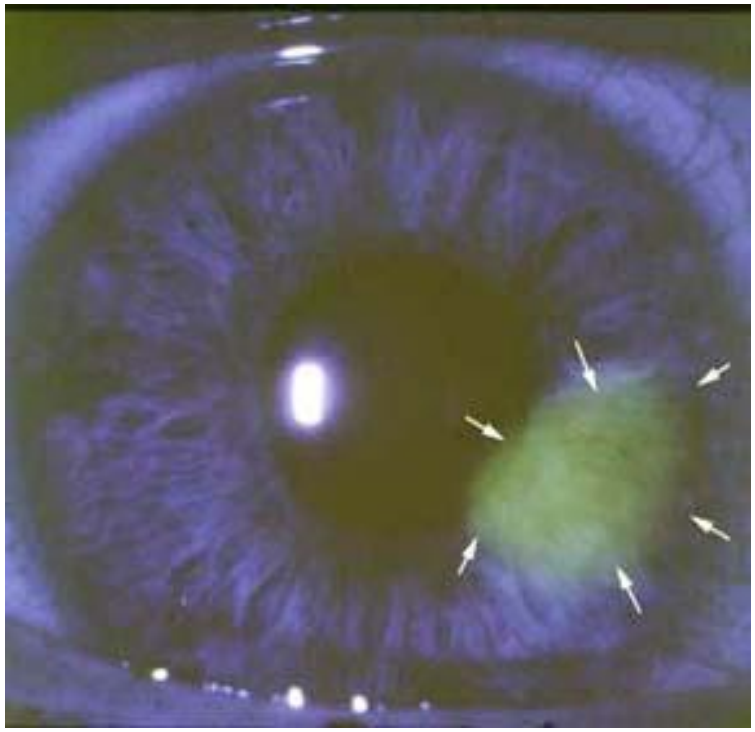
- **Hx of using HMG-CoA reductase inhibitors (statins)**

Posterior Subcapsular Cataract



- Hx of using **Corticosteroids**

Fluorescein dye



- Available as drops or strips
- Uses:

✓ stain corneal abrasions,

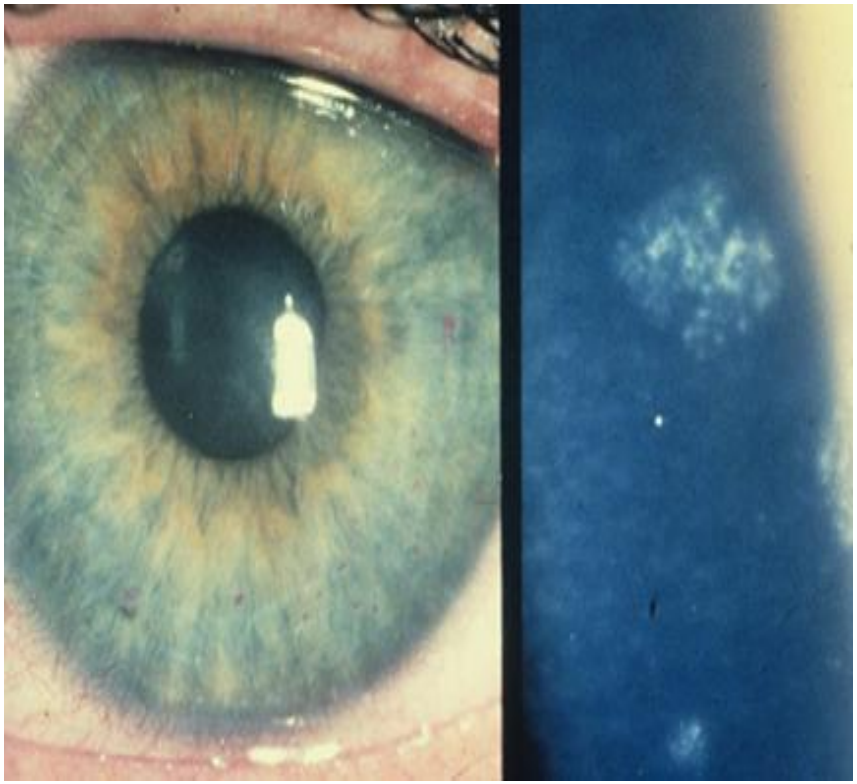
✓ applanation tonometry,

✓ detecting wound leak

✓ Nasolacrimal duct obstruction

✓ fluorescein angiography

Rose bengal stain



- **Stains devitalized epithelium**
- **Uses: severe dry eye, herpetic Keratitis in early stage.**

Note :

- **pigmentation(conjunctival adrenochrome) caused by Epinephrine**
- **optic neuropathy caused by amidarone**
- **corneal vortex keratopathy caused by chloroquine + amidarone**
- **chromatopsia caused by digitalis**
- **bull's eye caused by chloroquine**
- **pigmintary retinopathy caused by thioridazine**
- **cataract caused be statin**
- **psuedotumor cerebri caused by contraceptive pills**
- **optic atrophy caused by methanol**
- **yellow skin + yellow conjictiva caused by hyper Vit.A**
- **heterochrome iridis caused by prostaglandin analogu**