UVEITIS

UVEA

- highly vascular layer that lines the sclora
- principal function is to provide nutrition to eye

IRIS: metabolism of anterior segment, by diffusion of metabolites through aqueous

CILIARY BODY: secretes aqueous which bathes the avascular structures of the anterior segment

CHOROID: supplies the retina

Vascularization of Uvea: Due to vascularization of uvea, systemic conditions can cause uveitis such as systemic infections, systemic inflammations and systemic vascular diseases

- Uveitis → Inflammation of uvea

Anatomic Classification

1. Anterior → Anterior Chamber
2. Intermediate → Vitreous
3. Posterior → Retina or Choroid
4. Pan uveitis → All

CLINICAL CLASSIFICATION

1. Acute → sudden onset and limited duration
2. Recurrent → Repeated episodes separated by periods of inactivity without treatment ≥ 3 months in duration
3. Chronic → Persistent uveitis with relapse in <3 months after discontinuing treatment

PATHOLOGICAL CLASSFICATION

1. Suppurative / Purulent
2. Non Suppurative
   a. Non Granulomatous
   b. Granulomatous

PURULENT / SUPPURATIVE UVEITIS

- Endophthalmitis or pan ophthalmitis
- Exogenous infection by pyogenic organisms which include
  - Staphylococcus
  - Streptococcus
  - Pseudomonas
  - Pneumococcus
  - Gonococcus

- Endophthalmitis is purulent inflammation of intra ocular fluids (vitreous and aqueous) usually due to infection

- Outpouring of purulent exudate and infiltration by polymorphonuclear cells
  - Thickened uveal tissue
  - Necrosis
  - Pus filled cavities

GRANULOMATOUS UVIETIS

- chronic inflammation
- Response to anything which acts as an instant foreign body
- Inorganic or organic material introduced from outside
- Hemorrhage or necrotic tissue within the eye
- Response to certain specific organisms of non-pyogenic and relatively non virulent character
  - Tuberculosis
  - Leprosy
  - Syphilis
  - Brucellosis
  - Leptospirosis
  - most viral
  - mycotic
  - protozoal
  - helminthic infections
  - Sarcoidosis, sympathetic ophthalmitis and Vogt-Koyanagi-Harada's disease

NON GRANULOMATOUS UVEITIS

- Physical and toxic insult; different hypersensitivity reaction
  - HLA B27 associated
  - Bechet's disease
  - Lens induced glaucoma
  - Ugh syndrome
  - Corneal graft Rejection
  - Juvenile chronic arteritis
  - Fuchs heterochromatic iridocyclitis
  - Glaucomatocyclitic crises
  - Trauma
  - Secondary syphilis

GRANULOMATOUS

- Lymphocytes, plasma cells, with large mononuclear cells which eventually become epitheloid and giant cells and aggregate into nodules
- Iris nodules usually formed near pupillary border (koeppe's and busaccas nodules) → along pupillary border
  → within stroma of iris
- Nodular collection of cells is deposited at the back of cornea in the form of mutton fat keratic precipitates → (due to greasy appearance)
- Aqueous flare is minimum

NON GRANULOMATOUS

- dilatation and increased permeability of vessels
- Breakdown of blood aqueous barrier with an outpouring of fibrinous exudate and infiltration by lymphocytes, plasma cells and large macrophages of the uveal tissue
- more diffuse inflammation
- Aqueous flare

Feature	Granulomatous	Non Granulomatous
Onset	Insidious	Acute
Pain	Minimal	Marked
Photophobia	Slight	Marked
Ciliary Congestion	Minimal	Marked
Keratic precipitates	Mutton fat	Small
Aqueous Flare	Mild	Marked
Iris Nodules	Usually present	Absent
Posterior Synechiae	Thick and broad based	Thin and tenuous
Fundus	Nodular Lesions	Diffuse Involvement

ANTERIOR UVIETIS

Anterior uvietis is inflammation involving the anterior uveal tract - the iris and the anterior part (pars plicata) of the ciliary body

Classification

1. Iritis → involves iris only
2. Cyclitic → involves ciliary body (particularly pars plicata)
3. Iridocyclitis → involves both iris and ciliary body

Common Symptoms of Anterior uvietis

- Photophobia
- Blurred vision
- Pain
- Redness of eye
- watery discharge

Pain

- Eye is richly supplied with sensory nerves from the ophthalmic division of the trigeminal nerve
- Pain, typically worse at night, is a prominent symptom of acute iritis
- Severe neuralgic pain is felt here, but is also referred to other Branches of nerve
- Forehead and scalp, to the cheeks, and sometimes to nose and teeth

Congestion/ Ciliary Flush / Circum corneal Congestion

- Active hyperemia of anterior ciliary vessels due to effect of toxins, histamine and histamine-like substances and axon reflex

  Circum corneal → bcz congestion present around the cornea

Changes In Cornea

1. Keratic Precipitates (KPs)

- The nutrition of corneal endothelium becomes affected so that the cells become sticky and desquamate in places
- The exudates tend to stick there, forming keratic precipitates
- Over a triangular area in the lower part of cornea (arlt triangle), due to convection currents in the aqueous and gravitation of particles towards the bottom of anterior chamber

(a) Mutton Fat Keratic Precipitates

- These typically occurs in granulomatous iridocyclitis and are composed of epithelioid cells and macrophages.
- They are large, thick, fluffy, lardaceous keratic precipitates, having a greasy or waxy appearance
- 10-15 in number

(b) Small and Medium Keratic Precipitates (Granular KPs)

- These are pathognomonic of non-granulomatous uveitis and are composed of lymphocytes
- These small, discrete, dirty white KPs are arranged irregularly at the back of cornea
- Small KPs may be hundreds in number and form the so called endothelial dusting

(c) Old Keratic Precipitates

- shrink, fade, become pigmented and irregular in shape (crenated margins)
- Old mutton fat KPs usually have a ground glass appearance due to hyalinization

CHANGES IN ANTERIOR CHAMBER

1. Flares and Cells
   - Albuminous exudates (Normally aqueous humor is clear)
   - Aqueous becomes plasmoid containing leucocyter and minute flakes of coagulated protein, or even fibrinous networks in severe cases
   - Hazy, forming a milky 'flare' in the beam of the slit-lamp

2. Hypopyon / Hyphema
   - Polymorphonuclear leucocytes are poured out and sink to the bottom of the anterior chamber to form a hypopyon
   - Hyphema, or blood in the anterior chamber is rare
     ↳ may be associated with previous surgeries and in such cases it is called UGH syndrome (Uvietis, Glaucoma, Hyphema Syndrome)

3. Other Anterior Chamber Signs
   - Change in Depth :- Synechiae formation
   - Change in Angle of Anterior Chamber → observed with gonioscopic examination. In active stage, cellular deposits and in chronic stage peripheral anterior synechiae (PAS) may be seen

     Synechiae → Apposition of iris and lens or cornea
     Anterior synechia → Attachment of iris to cornea
     Posterior synechiae → Attachment of iris to lens

IRIS SIGNS

- Loss of pattern
- Change in color
- Iris Nodules
- Posterior Synechiae
- Neovascularization

IRITIS

- inflammation of iris
- Dilatation of blood vessels
- Exudation of protein-rich fluid
- Pupil contraction (mechanically) → due to swollen iris
- waterlogged iris, sluggish pupillary reaction

Color Change in Uvietis

- Color undergoes considerable change
- Blue Iris → Bluish or yellowish green
- Brown Iris → show less difference; greyish or yellowish brown

PLASTIC IRITIS

- Exudatec poured out by iris and ciliary body also cover the surface of iris as a thin film and spreads into, and sometimes completely over, the pupillary area

IRIS NODULES

(a) Koeppe's Nodules : are situated at the pupillary border and may initiate posterior synechiae

(b) Busacca's Nodules: Situated near the collarette are large but less common than the Koeppels nodules

POSTERIOR SYNECHIAE

- Sign of present or past iritis
- iris sticks to lens capsule bcz of exudates and become fixed
- Adhesions are converted into fibrous bands which ~~are~~ the atropine is unable to rupture
- Such firm adhesions of pupillary margin to the lens capsule are called posterior synechiae
- can be
  - Segmental posterior synechia → only one location
  - Annular posterior Synechiae → entire pupillary area may get involved
  - Total Posterior Synechiae → entire iris get stuck to lens

ANNULAR SYNECHIAE / RING SYNECHIAE / SECLUSION PUPILLAE

- leads to secondary angle closure glaucoma
- The aqueous, unable to pass forwards into the anterior chamber, collects behind the iris, which becomes bowed forwards like a sail - a condition which is called peripheral anterior synechiae ↓ Iris bombe formation
- Raised IOP

TOTAL POSTERIOR SYNECHIAE

- In cyclitis, sometimes the posterior chamber also fills with exudates which may organize, tying down the iris to the lens capsule
- This causes retraction of peripheral part of iris, so that the anterior chamber becomes abnormally deep at the periphery, sometimes deeper than in the centre

CHANGES IN PUPIL

- Narrow Pupil : It occurs in acute attack of iridocyclitis due to irritation of sphincter pupillae by toxins
- Irregular Pupil Shape → Festooned pupil : It results from segmental posterior synechiae
- Ectropion Pupillae → evertion of pupillary margin
- Pupillary Reaction → becomes sluggish due to edema and hyperemia of iris which hampers its movements
- Occlusio pupillae → organisation of exudates across entire pupillary area

ECTROPION OF UVEAL PIGMENT → posterior pigment of the iris comes anteriorly due to contraction of exudates

Due to contraction of organizing exudates upon the iris, the pigment epithelium on its posterior surface may be pulled around the pupillary margin so that patches of pigment may be seen on the anterior surface of iris

OCCLUSIO PUPILLAE :

When the exudates are extensive, it may organize across the entire pupillary area, which ultimately becomes filled by a film of opaque fibrous tissue - this condition is called a blocked pupil, or occlusio pupillae

CHANGES IN LENS

- Pigment Dispersal on lens → Pigment coming from iris
- Exudates on lens
- Complicated Cataract (Posterior Subcapsular Cataract) → bread crumb appearance, Polychromatic lustre
- Cyclitic membrane → exudate forming on posterior part of lens, specifically seen in cyclitis

CHRONIC COMPLICATIONS / SEQUELAE OF UVIETIS

- Uvietis glaucoma
- Complicated cataract (polychromatic lustré)
- Cyclitic membrane
- Ciliary body shock → ↓ IOP
- Band shaped keratopathy → Due to chronic inflammation, there will be deposition of calcium in eye, esp if it comes on cornea, it can form band shaped keratopathy
- Pthisis bulbi →
  ↳ shrunken, non functional eye
- Retinal Complications
  - Cystoid macular edema
  - Exudative Retinal detachment

INTERMEDIATE UVIETIS

- Chronic, insidious onset of inflammation of intermediate part of urea. And it is relapsing in time
- Idiopathic, inflammatory syndrome, mainly involving the anterior vitreous, peripheral retina, and ciliary body, with minimal or no anterior segment or chorioretinal inflammatory signs
- Vitreous is the major site of inflammation

Intermediate Uvietis vs Pars Planitis

- Intermediate uvietis may be idiopathic (→ pars planitis) or associated with a systemic (↙ intermediate uvietis) disease
- Pars planitis → Inflammation is idiopathic with snow banking or snowball formation
- If idiopathic → pars planitis
- If particular cause present e.g presence of infection or presence of some systemic disorders → intermediate uvietis

What Cause Intermediate Uvietis

- Intermediate Uvietis
  - Lens Induce
  - JRA
  - FHI
  - Sarcoidosis
  - Infectious
    - Toxoplasmosis
    - Toxocariasis
    - Lyme Disease
    - Tuberculosis
    - Cat Scratch Disease
    - Immune Recovery vitritis
  - Multiple Sclerosis
  - Pars Planitis
  - Masquerades
    - Intraocular foreign body
    - Ophthalmia nodosa
    - Amyloid
    - Lymphoma
    - Endophthalmitis
      - candida
      - P.acnes
      - Staphylococcal epidermidis
    - Retinitis pigmentosa

Infective Causes

- Tuberculosis
- Syphilis
- Lyme Disease
- Cat Scratch Fever
- Toxocariasis
- HTLV-1 infection (Human T cell Lymphoma Virus Type-1)

Non Infective Causes

- Sarcoidosis
- Multiple sclerosis
- Inflammatory bowel disease
- Whipple's disease

Symptoms of Intermediate Uveitis

- Insidious onset of blurred vision
- Accompanied by vitreous floaters
- There is usually mild to no pain and photobia
- Mild redness

An insidious onset of blurred vision accompanied by vitreous floaters without pain or redness suggests a possible diagnosis of intermediate uveitis.

Visual Acuity

- Depends on extent of inflammation and complications, like Cystoid macular edema
- may last as long as 15 yrs and preservation of vision will depend largely on control of macular disease

Unilateral or Bilateral?

- Bilateral involvement is seen in 70-80% of patients at the time of presentation
- Bilateral involvement will occur in approx. one-third of patients who initially have unilateral disease experience

Important Signs In Intermediate Uveitis

1. Vitreous Cells → inflammatory cells
   - Vitreous cells with anterior predominance are universal
   - Vitreous condensation and haze is found in severe case
     ↳ In severe cases, vitreous cells start to condense and lead to membrane formation which leads to severe vitreous haze

2. Snowballs : white focal collections of inflammatory cells and exudate, usually most numerous in the anterior vitreous

Active vs. Inactive Snowballs

ACTIVE	INACTIVE
· Fluffy, fuzzy margins	· well defined
· Larger in size	· smaller in size
· Surrounded by vitreous cells	· contracted

Do not decide treatment based on snowballs. They take a long time to go away.
Use other tests to monitor inflammation and response to treatment

3. Snowbanking

· Grey-white fibrovascular and/or exudative plaque that may occur in any or all quadrants, but is most frequently found inferiorly
· Snowbanking indicate severe inflammation and treatment should also be aggressive

Histology of Snowbanking

· Histologic examination of this snowbank reveals collapsed vitreous; blood vessels; fibroglial cells, including fibrous astrocytes; and scattered inflammatory cells, predominantly lymphocytes
· Peripheral veins show lymphocytic cuffing and infiltration
· The vascular component of snowbank is continuous with retina in some cases
· Only mild inflammation is noted in the choroid and the ciliary body, suggesting that the inflammatory process in intermediate uveitis primarily involves the vitreous base and the peripheral retina, and not the uvea

Importance of Scleral Depression

· Snowbanking and snowballs are usually best seen with scleral depression
· A high, dense snowbank on the pars plana can often be better seen with the indirect ophthalmoscope without using 20-diopter lens while the patient looks down

· When a snowbank is observed, the area should be carefully examined for the presence of neovascularization bcz these areas are a source of potential vitreous hemorrhage

4. Peripheral Vasculitis (inflammation of vessels) / Periphlebitis → peripheral part of retina affected
- common, particularly in multiple sclerosis → superior Quadrant
- Perivascular cuffing, occlusive vasculitis and sheathing
  - phlebitis → refers to veins
  - Periphlebitic → bcz veins are affected more than arteries
  - Veins develop perivascular cuffing
  - Inflammation can compress the veins and cause occlusion
  - Chronic cases → whitening of vessel walls called → Vascular Sheathing
- In most cases, vasculitis is present in inferior Quadrant.
- In multiple Sclerosis → seen in Superior Quadrant

5. Neovascularization
- particularly in retinal periphery (often associated with snowbanks) and on the optic nerve head
- The latter usually resolves when activity is controlled
- This can sometimes lead to vitreous hemorrhage, retinal detachment and cyclitic membrane formation
- Vitreous hemorrhage is more common in children

7. Optic Disc Edema
- Optic Disc swelling is common, esp in younger patients
- Disc edema is seen in 50% of patients with intermediate uvietis
- Neovascularization of disc is associated with severe retinal ischemia but responds to panretinal laser photocoagulation

COMPLICATIONS OF INTERMEDIATE UVIETIS

1. Cystoid Macular Edema
- CME occurs in up to half of patients and is major cause of impaired visual acuity
- The amount of CME doesnot correlate with the amount of inflammation or vitritis

2. Cataract
   - Cataract can be caused by steroid treatment or by the inflammation itself
   - Posterior subcapsular cataract is most common lenticular opacity.

3. Hypotony → ↓IOP
   - Ciliary body process atrophy → reduce aqueous production
   - Cyclitic membrane → membrane can grow over ciliary body
   - Ciliary shutdown

4. Glaucoma → ↑ IOP due to blocked trabecular meshwork
   - prolonged inflammation
   - steroid therapy
   - Incidence is 7.6%

5. Optic Neuritis
   - suspect multiple sclerosis

6. Peripheral Vasculitis / Periphlebitis

7. Neovascularization

8. Retinoschisis
   - split within layers of retine
   - uncontrolled intermediate uvietis
   - persistent cappillary leakage
   - subclinical peripheral ischemia and constant low grade vitreous inflammation
   - vitreous shrinkage and traction
   - peripheral retinoschisis

9. Retinal Detachment
   - Exudative RD: secondary to inflammation in intermediate uvietis
   - Tractional Retinal Detachment
   - Rhegmatogenous Retinal Detachment

10. Vasoproliferative Tumors (fibrous)
- mix of vascular and glial proliferation
- Inflammatory insult
- Breakdown of blood retinal barrier
- Uncontrolled release of cytokines and angiogenesis occurs
- Uncontrolled proliferation of fibrous tissue and angiogenesis in periphery, leading to development of vasoproliferative tumors

Anterior Segment Inflammation with Intermediate Uvietis

Some patients develop a granulomatous anterior uvietis with formation of mutton-fat keratic precipitates.

Seen in:
- multiple sclerosis
- Pediatric Intermediate uvietis
- Lyme's disease
- Sarcoidosis
- Tuberculosis

DIAGNOSIS OF INTERMEDIATE UVIETIS

* Multiple Sclerosis

* History
  - Loss of sensitivity or paresthesia of hands, arms, or leg
  - women
  - Age 20-25
  - Granulomatous Anterior uvietis
  - history of optic neuritis in past
* Neurological examination / Neuro imaging for demyelination
* Intermediate uvietis with superior vasculitis is a clinical predictor of multiple sclerosis

2. SARCOIDOSIS

- Fever, fatigue or night sweats → Sarcoidosis and Tuberculosis
- Systemic examination
- Schirmers Test → (A predominant history of dryness of eye is present as Sarcoid affects lacrimal gland usually)
- CT chest and Mantoux test
  - → bilateral hilar lymphadenopathy
  - └ (-)
- Serum ACE
- Erythema nodosum (sometimes present) → painful on palpation

Other Signs

- Granulomatous mutton fat keratitic precipitates
- Iris nodules
- Nodules in trabecular meshwork
- Snowballs
- Tent like peripheral anterior synechiae
- multiple inferior hypopigmented lesions

3. TUBERCULOSIS

Clinical Features

- Fever
- Fatigue
- Night sweats
- Chronic cough
- Endemic area
- History of contact
- Weight loss

Investigations

- Chest X Ray
- Mantoux test
- HRCT → High Resolution Computed Tomograph
- Quantiferon Gold
- Immunoglobulin gamma release assay

] most specific and sensitive tests

Ophthalmic Signs

- Occlusive vasculitis
- Subvascular scars
- Tortousity of vessels

4. LYME DISEASE

Clinical Features
- History of tick bite and arthritis of knee
- severe erythema chronicum migrans → expanding red rash
- Lymes arthritis

Investigation
- Lymes serology

Ophthalmic Signs
- Associated anterior uvietis
- Nodular episcleritis
- Tick attached to eyelash

5. SYPHILIS

- Signs of Dermatitis → Lymes disease, TB, Syphilis

Tests for Syphilis
- TPHA : Treponema pallidum hemagluttination assay
- FTA-ABS : Fluorescent treponemal antibody-absorption

} more sensitive and used for screening

- VDRL : Venereal disease research laboratory
  - → more specific
  - → not used for screening
  - → used for guiding treatment response

6. CAT SCRATCH DISEASE

- History of cat scratch
- Pre auricular lymphadenopathy
- Conjunctival granuloma
- Bartonella henselae organism

Investigations
- measurement of visual acuity and slit lamp biomicroscopy
- measurement of intraocular pressure
- Fundus examination with scleral depression is mandatory in patients with uvietis
- The Amsler grid has been shown to mirror the presence of macular edema quite well, and we always suggest the grid to patients for self monitoring

Role of Fluorescein Angiography and OCT

- To assess the presence and extent of cystoid macular edema
- To examine retinal vasculature for signs of perivasculitis
- To disclose areas of retinal non perfusion and neovascularization
- shows disc hyper fluorescence → signs of activity

Ultrasonography

- UBM → Cyclitic membrane
- Extent of vitreous debris when the view of the posterior pole is obscured by cataract
- Vitreoretinal adhesions that are not observed clinically
- Toxocara granuloma

POSTERIOR UVEITIS

↳ Retina/choroid

RETINITS

- inflammation of retina

Retinitis → inflammation of retina
Choroiditis → inflammation of choroid
Vasculitis → inflammation of vessels
Neuroretinitis → inflammation of disc and retina
Retino-choroiditis → (e.g Toxoplasma) inflammation starts in retina and later involve choroid
Chorio-retinitis → inflammation starts in choroid and later involve retina
(e.g TB)

How Do Retinitis Lesion Look Like

Full Thickness or Inner Retinal Involvement

- Bright yellow fluffy lesions with indistinct borders
- Retinal vasculature passing through these lesions appear obscured
- At times, mimic cotton-wool spots and may produce moderate to severe vitritis

Outer Retinal Inflammatory Lesions appear

- dull orange or yellow with indistinct borders
- vasculature may remain clear over the lesions
- vitritis could be mild-moderate

Retinitis Lesions may be

- Focal (solitary lesions)
- Multifocal
- Geographic or diffuse

Posterior Uveitis with Retinitis

- Focal Retinitis
  - Toxoplasmosis → headlight in fog sign
  - Toxocara
  - cysticercosis
  - Onchocerceriasis
  - Masquerade Syndrome
- Multifocal Retinitis
  - Syphilis
  - HSV, VZV → Acute Retinal Necrosis
  - CMV → pizza pie appearance
  - DUSN → Diffuse Unilateral Subacute Neuroretinitis → occurs bcz of parasites
  - Candida → cotton ball colonies
  - Sarcoid
  - Masquerade Syndrome

~~Recap~~

* Acute Retinal Necrosis
  - Vitreous inflammation
  - Retinal vascular arteriolitis
  - Peripheral Retinitis
* Progressive outer Retinal Necrosis
  - cracked mud pot appearance
  - perivascular clearing / sparing
* Post Fever Retinitis
  - Typhoid
  - Rickettsia
  - Chikungunya
  - Dengue
  - West Nile virus
  - Zika virus

CHOROIDITIS

How Does Choroidal Inflammation Look Like

- Dull yellowish orange-colored, deeply situated lesions with indistinct borders
- Sometimes with elevated appearance
- Retinal vessels will appear clear, passing over the lesion in contrast to retinitis where the vessels passing through the lesions are obscured
- Vitritis in choroiditis is relatively less pronounced

Based on Vessels

- Retinitis → lesions look whitish or yellowish in color and vessels are obscured by lesion
- Choroiditis → Lesion is slightly well defined and slightly deeper. It is orangish or dull yellow in color and vessels run on top of lesion with clarity

Types of Choroiditis

- Focal
- Multifocal
- Diffuse / Geographic
- with vitreous cells (vitritis)
- without vitreous cells

WHITE DOT SYNDROMES

- White Dot Syndromes are idiopathic inflammatory multifocal disorders principally involving the posterior segment
- involves outer retine, retinal pigment epithelium and choroid
- uncommon
- usually transient and donot cause a long term handicap

White Dot Syndromes

1. Multiple evanescent white dot syndrome (MEWDS)
2. Acute posterior multifocal placoid pigment epitheliopathy (APMPPE)
3. Birdshot chorioretinopathy
4. Punctate Inner Choroidopathy (PIC)
5. Serpiginour choroidopathy
6. Multifocal choroiditis and pan uveitis
7. Subretinal fibrosis and uveitis

Multiple Evanescent White Dot Syndrome (MEWDS)

Evanescent bc2 lesions and macular granularity will fade with time, but suble RPE alterations can be noted

- multiple small, discrete white lesions are noted deep in the retina or at the level of retinal pigment epithelium
- Appear in the posterior pole and extend to mid periphery
- concentrated in the perifoveal region, but seem usually to spare the fovea itself
- There is often a granular appearance to macula
- The granularity → appearance of tiny white or orange specks, which do not approach the size of deeper circular lesions

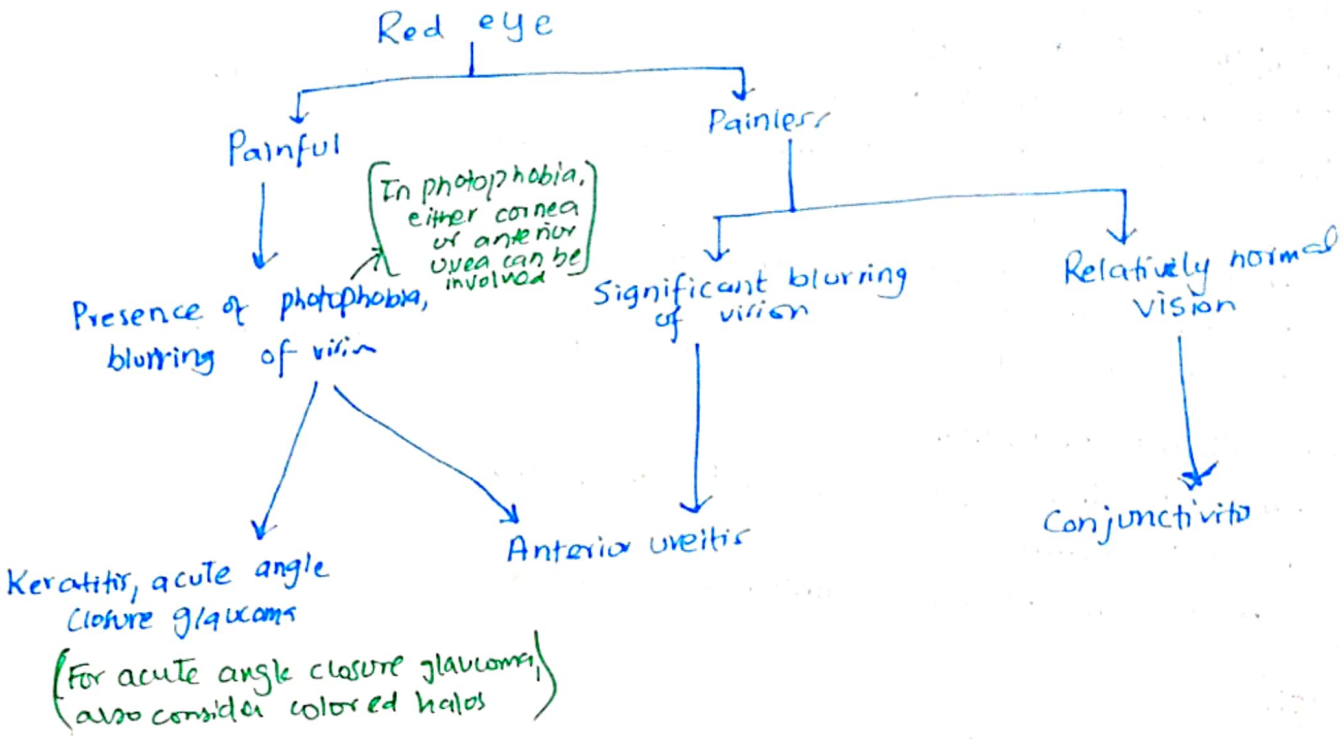
Who is Affected

- young female (10-47 yr)
- myopic females
- commonly presents as painless monocular blurring (6/9 - 6/60) and photopsia
- less commonly as floaters and scotomata

OCT → may show inner-segment / outer-segment junction disruption

RED EYE

The final common response to any anterior segment disease is redness of eye.
It can be due to disease of conjunctiva, cornea or anterior uvea



Vision

Conjunctivitis → Good
Acute Anterior uveitis → Fair
Acute Angle Closure Glaucoma → poor

Pain

- Conjunctivitis → mild discomfort
- Acute Anterior uveitis → Moderate (Along 1st division of trigeminal nerve)
- Acute Angle closure glaucoma → Severe (Along entire trigeminal nerve area)

Secretions

- Conjunctivitis → Mucopurulent / watery
- Acute Anterior uveitis → watery
- Acute Angle Closure Glaucoma → watery

Photophobia

- Conjunctivitis → Absent
- Acute Anterior uveitis → present
- Acute Angle closure glaucoma → present

Colored Halos around Light

- Conjunctivitis → Absent
- Acute Anterior uveitis → Absent
- Acute Angle Closure Glaucoma → Present

Type of Congestion

- Conjunctivitis → Superficial
- Acute Anterior uveitis → Deep ciliary (CCC – Circum ciliary congestion)
- Acute Angle Closure Glaucoma → Deep ciliary (CCC)

Superficial Congestion

- max at fornix, fade towards limbus
- Color : Bright Red
- Vessels involved : Superficial vessels (Anterior and posterior)

Deep Ciliary Congestion

- max at limbus, fades towards the fornix
- Color : pinkish hue
- vessels involved : Deep Anterior Ciliary vessels

Pupil

- Conjunctivitis → normal
- Acute Anterior uveitis → small and irregular (festooned)
- Acute Angle Closure Glaucoma → Large / mid dilated, vertically oval

Depth of Anterior Chamber

- Conjunctivitis → Normal
- Acute Anterior Uveitis → Normal
- Acute Angle Closure Glaucoma → Shallow

Tenderness

- Conjunctivitis → Absent
- Acute Anterior uveitis → Present
- Acute Angle closure Glaucoma → Present

Intraocular pressure

- Conjunctivitis → Normal
- Acute Anterior uveitis → Normal / Raised / Low {Raised due to trabeculitis, Reduced due to ciliary body damage}
- Acute Angle closure Glaucoma → Raised

Systemic Associations

- Conjunctivitis → Absent
- Acute Anterior uveitis → Referred pain
- Acute Angle Closure Glaucoma → prostration and vomiting