Diseases of Sclera

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Sclera

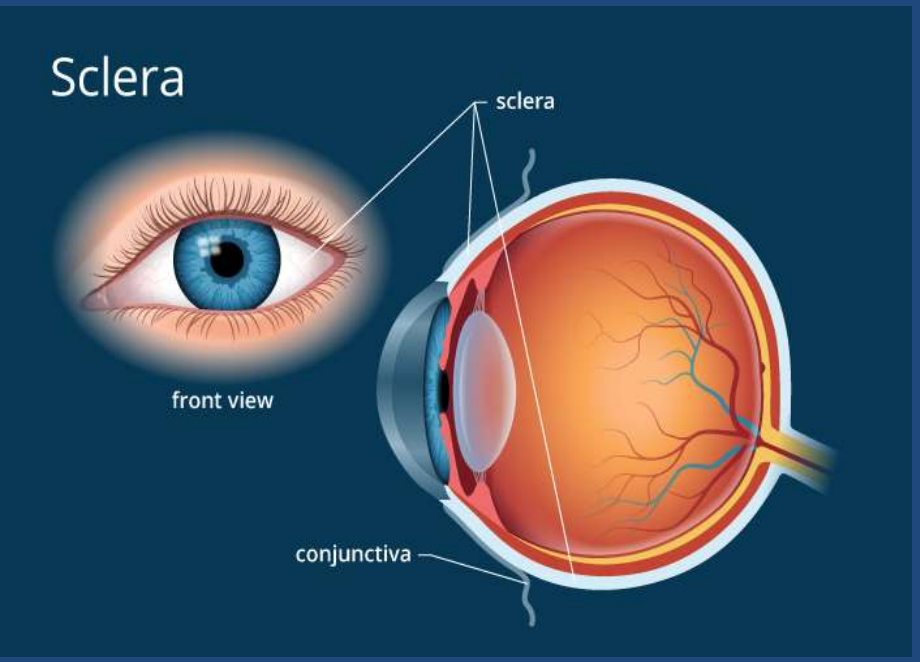
- Tough white opaque outer coat of eye ball.
- Covered by tenon's and anteriorly also by conjunctiva.
- Inner surface in contact with choroid and potential ssuprachoroidal space
- Anteriorly fuse with cornea at limbus
- It is 1 mm thick posteriorly and 0.3mm at muscle insertions.
- Composed of collagen and elastin.

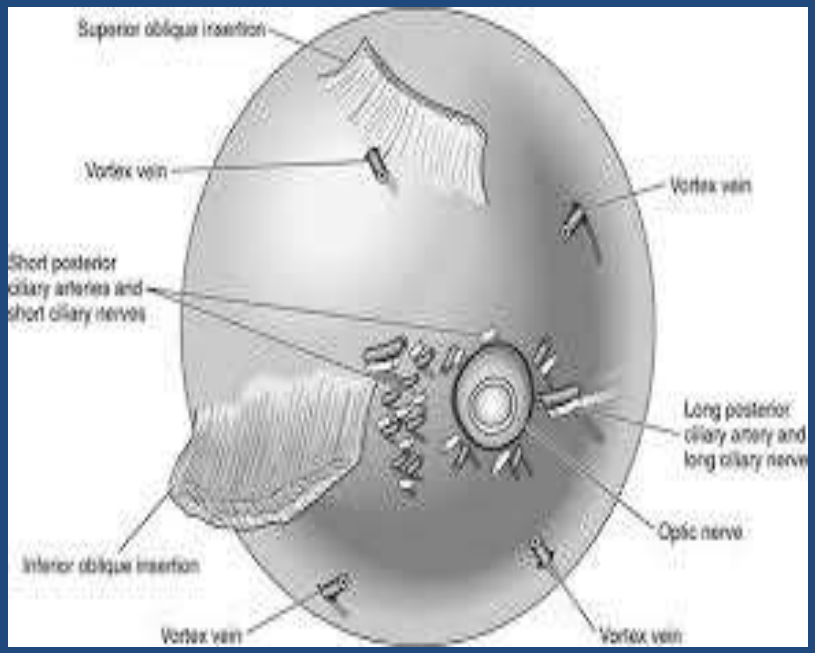
Sclera

- Posterior aperture located around optic nerve and transmit long and short cilliary vs and nv
- Middle aperture four in no and located slight post to equator and transmit vortex veins
- Anterior aperture 3-4 mm behind limbus and pass anterior cilliary vs.

Microscopic structure

- Episcleral tissue – thin dense vascularised tissue.
- Sclera proper – avascular with dense bundles of collagens
- Lamina fusca- innermost and blend with suprachoroidal and supracilliary laminae of uveal tract and is pigmented


Sclera
sclera
front view
conjunctiva


Superior oblique insertion
Vortex vein
Vortex vein
Short posterior
ciliary arteries and
short ciliary nerves
Long posterior
ciliary artery and
long ciliary nerve
Optic nerve
Inferior oblique insertion
Vortex vein
Vortex vein

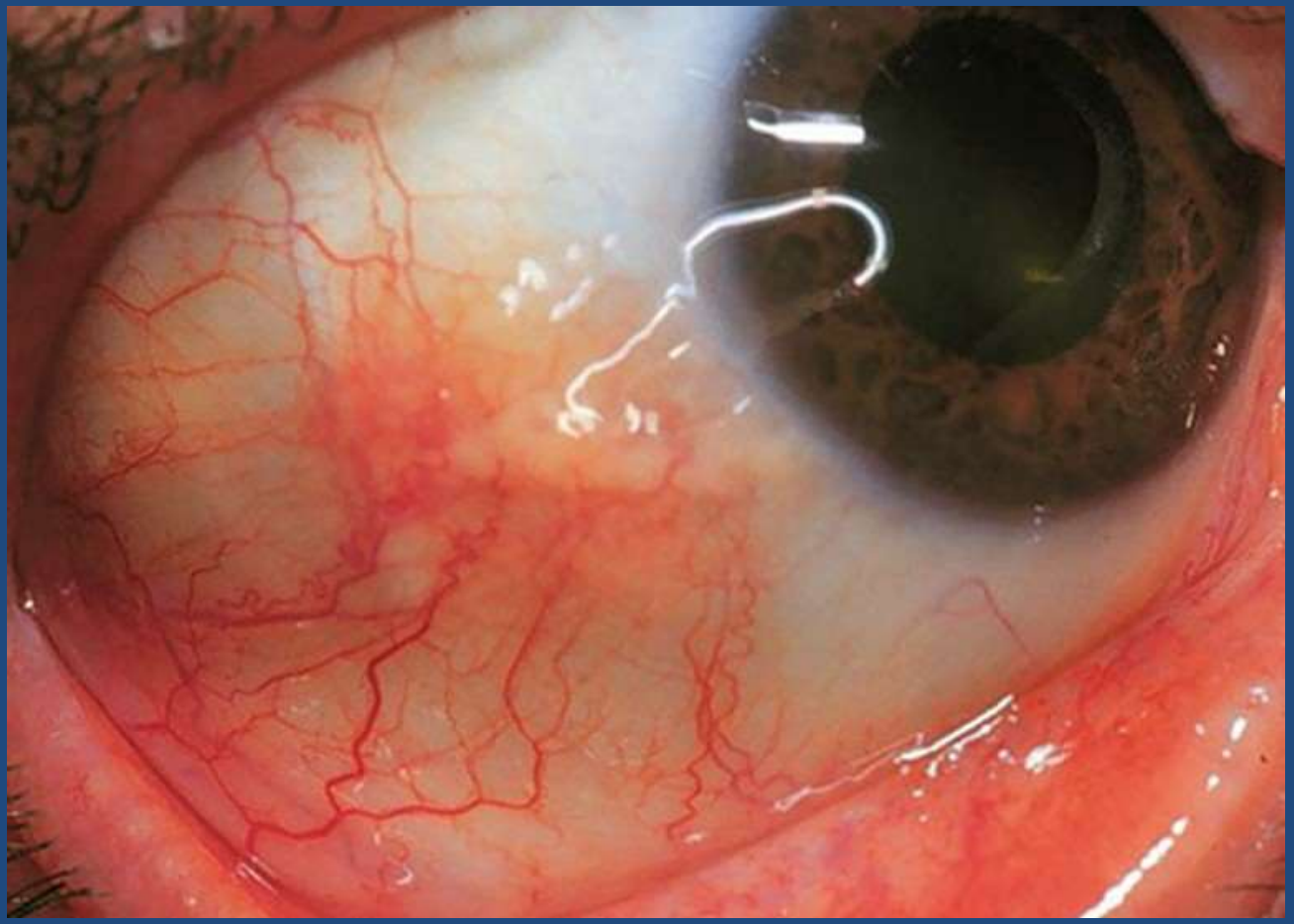
Episcleritis

- Benign recurrent infl of epislera and tenon's.
- Common in young adult, twice in women
- Gout, rosacea and psorisis are assoc
- Hypersenstivity to TB or streptococus antigen

Clinical feature

- Mild pain, redness watering and photophobia

a) Diffuse- whole eye is involved.
b) Nodular – pink or purple flat nodule 2-3mm from limbus. It firm and tender with surronding congestion. Conj is mobile



Episcleritis

- It lasts 1-3 wks with tendency to reoccur.

Treatment

- Topical corticosteroids
- Cold compresses
- Oral NSAID

Scleritis

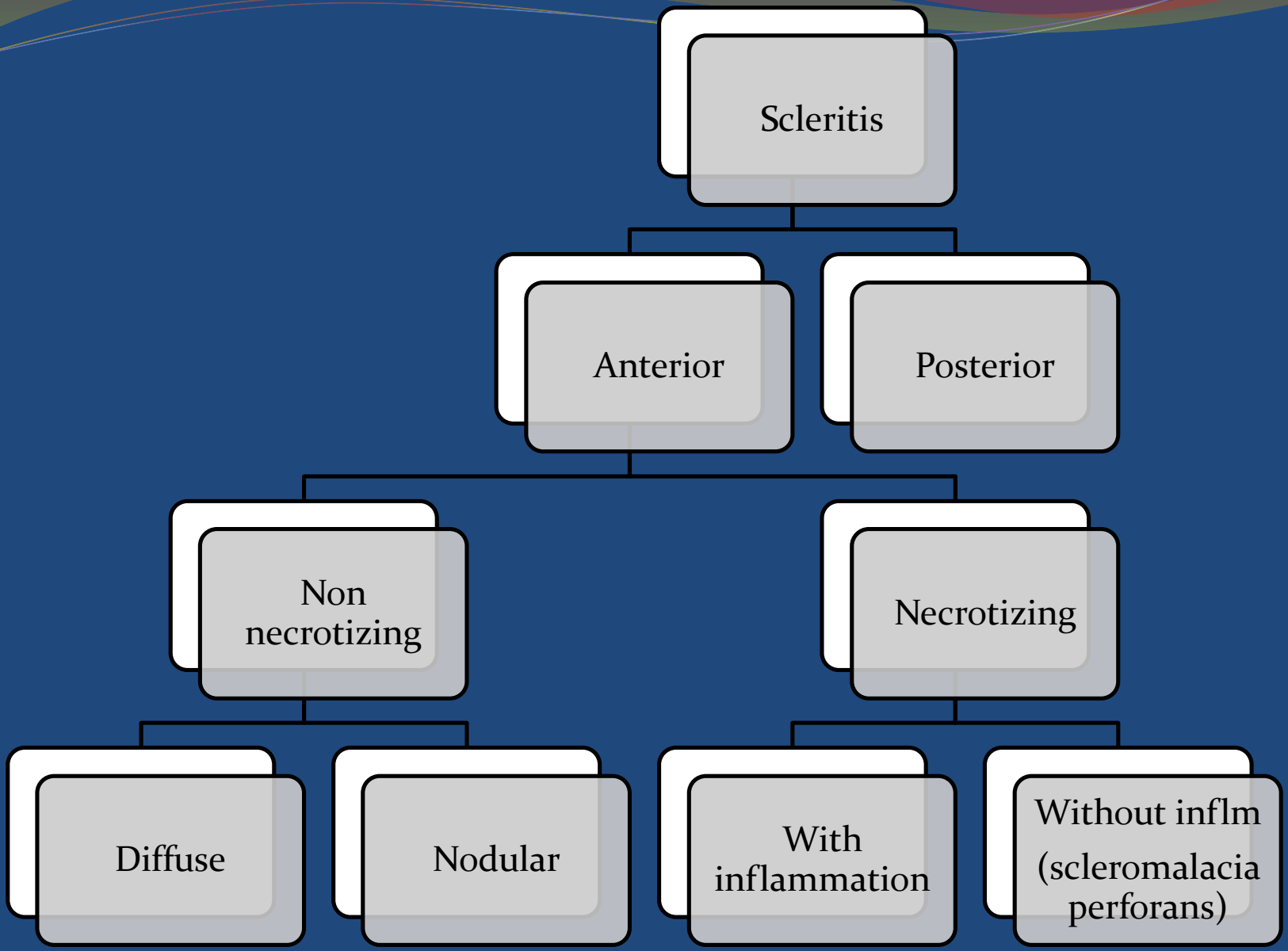
- Chronic infl of sclera proper. It is common in elderly 40-70yrs and in women.

Associations

1. Autoimmune collagen diseases
   - Rheumatoid arthritis – most common asoc 0.5%.
   - Others are Wegner's, PAN, SLE Ank spondy,
2. Metabolic- Gout , Thyrotoxicosis
3. Infections- H Zoster, Staph and Strept infections
4. Granulomatous ds- TB, Sarcoidosis, leprosy and syphilis
5. Surgicaly induced

scleritis

Pathology – Granulomatous fibrinoid necrosis with destruction of collagen with PMN's, lymphocytes, plasma cells and macrophages. Granuloma surrounded by giant cells.


Scleritis
Anterior
Posterior
Non necrotizing
Necrotizing
Diffuse
Nodular
With inflammation
Without inflm (scleromalacia perforans)

Scleritis

Clinical features

- Symptoms- moderate to severe pain with localized or diffuse redness, photophobia and lacrimation and occasionaly dimunition of vision
- Signs-

1. Non necro anterior diffuse- commonest type. Widespread inflammation in aquadrant or more with sclera raised and salmon to purple in colour
2. Non necro anterior nodular- one or two hard purplish elevated scleral nodules near limbus. If arranged in ring then annular scleritis

Scleritis

3. Anterior necro with inflam- Accute severe form. Intense local inflm with infarction due to vasculitis. Thinned, ectatic sclera with shining uvea underneath. Usually assoc with uveitis
4. Anterior necro without inflm- Scleromalacia perforans. Seen in elderly females with Rh arthritis.There is ischemia with yellowish white necritic sclera. It leaves with thinned out sclera with shining uvea beneath. Rarely spontaneous perforation.
5. Posterior scleritis- Inflm behind equator. May present as Exudative RD, macular edema, proptosis and restricted eyeball movement.

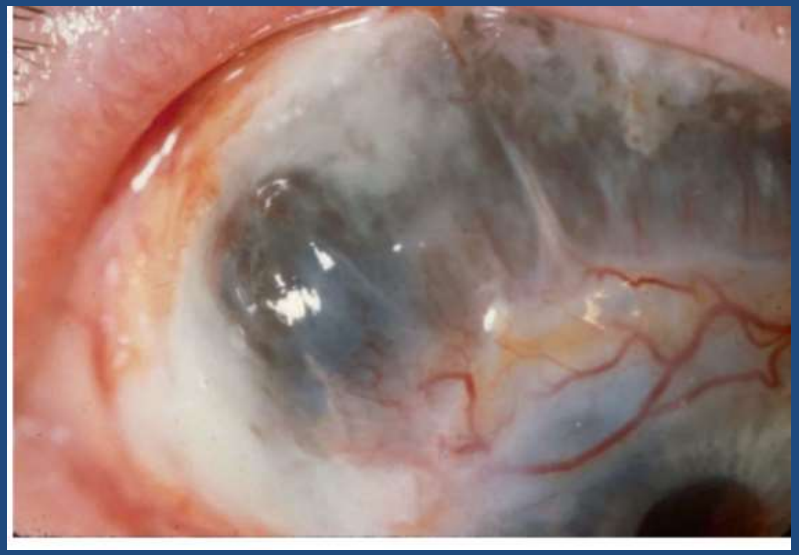
Scleritis

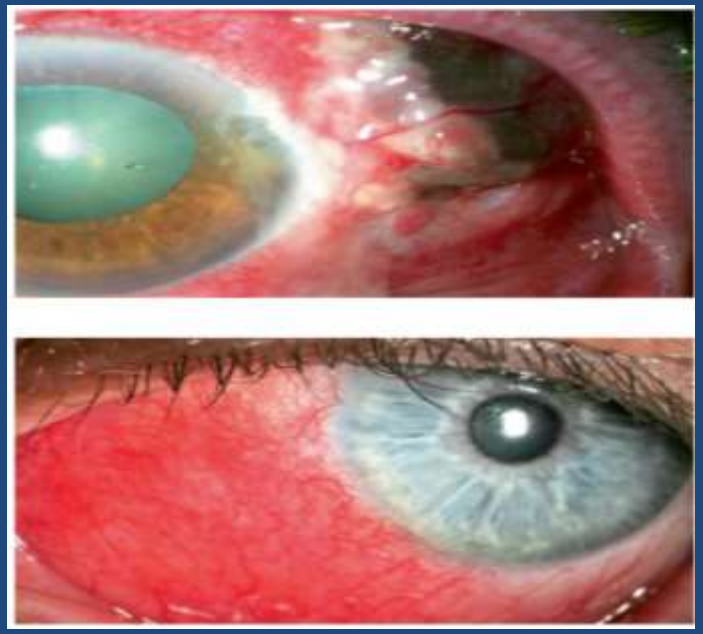
Complications

- Sclerosing keratitis
- Keratolysis
- Complicated cataract
- Secondary Glaucoma

Investigations

- TLC, DLC, ESR
- Serum C3 compliment RA factor, ANab, LE cells for Rh arthritis and SLE
- FTA-ABS, VDRL for syphilis





Scleritis

- Serum uric acid, Urine R/E and Mantoux test
- X-Ray chest and PNS
- X-RAY orbit to r/o FB in nodular scleritis.

Treatment

A. Non necrotizing scleritis- Topical steroids and systemic indomethacin 100mg OD then 75mg until it resolves
B. Necrotizing scleritis- Topical steroid and high dose oral steroids. In non responsive cases methotrexate or cyclophosphate may be required.

Staphyloma

Staphylomas- Ectatic cicatrix involving outer coat of eyeball with incarceration of uveal tissue.

Types

1. Anterior Staphyloma
2. Intercalary-In limbal area and lined by root of iris. Usualy seen following healing of perforating injury or marginal ulcer. Assoc with sec glaucoma.
3. Ciliary staphyloma- Bilged sclera lined by ciliary body. 2-3mm from limbus and cause is thinned sclera following injury, scleritis, and absolute glaucoma.

Staphyloma

4. Equatorial Staphyloma- Bulged sclera lined by choroid near equator. Scleritis and degenerations due to pathological myopia.
5. Posterior staphyloma- Bulge behind equator with choroid. Pathological myopia, posterior scleritis, perforating injuries are causes. Ophthalmologicaly seen as excavation with dipping vessels.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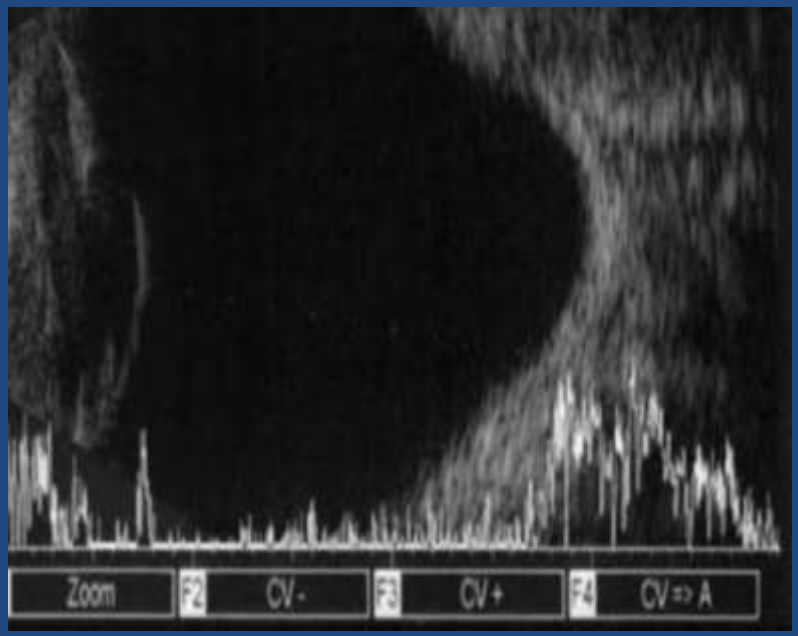
Zoom
F2 CV -
F3 CV +
F4 CV ⇨ A

FOR CLARIFACATIONS CONTACT DR. SANJAY KAI ON TUESDAY 24 NOV. IN SEMINAR ROOM OF EYE DEPTT BETWEEN 1 TO 2 PM