

Infective corneal lesions	Viral keratitis		Bacterial keratitis	Acanthamoeba keratitis	Fungal keratitis	Interstitial keratitis
	Herpes simplex keratitis	Herpes zoster ophthalmi				
<b>Definition and notes</b>	Reactivation of type 1 HSV from the trigeminal ganglion	Reactivation of varicella zoster in ophthalmic division of trigeminal nerve + ocular problems if nasociliary branch is involved	Staph epidermis Staph aureus Strep pneumoniae Coliform Pseudomonas Haemophilus factors preventing infection of cornea and conjunctiva: blinking, flow of tears, the corneal epithelium , mucus trapping foreign body predisposing	Freshwater amoeba - painful infective keratitis , often with contact lenses - Infiltrated corneal nerves , may spread to sclera ,	<ul style="list-style-type: none"> <li>➤ Not responding to antibacterial therapy in corneal ulceration</li> <li>➤ Trauma</li> <li>➤ Prolonged use of steroids</li> </ul>	Any vascular keratitis that effects the corneal stroma without the epithelium <ul style="list-style-type: none"> <li>• Caused by congenital syphilis</li> </ul>
<b>Symptoms and diagnosis</b>	Asymptomatic , fever, follicular conjunctivitis, vesicular lid lesions periauricular lymphadenopathy	Lid swelling, keratitis, iritis, secondary glaucoma	Pain, purulent discharge, ciliary injection, visual loss, hypopyon, white corneal opacity	Diagnosis: in vivo confocal microscopy or corneal scrapes - Culture ( E.coli lawn) to identify		
<b>Characteristic features</b>	Dendritic ulcer which is linear, branching epithelial cells			Corneal Ring infiltrates	Whitish inflammatory infiltrate with satellite lesions is	A scar is formed with empty "ghost " blood vessel(late ( neovascularization ) .

<b>complications</b>	Corneal ulcers which disrupt both epithelial and stromal layers of cornea may not have					
<b>tx</b>	Acyclovir, ganciclovir, vidarabine, trifluorothymidine	Oral antivirals Antibacterials for secondary infection	Gram staining and culture + topical antibiotics Dual therapy to cover most bacteria (cefuroxime + gentamicin) Monotherapy (ciprofloxacin) Tissue adhesives and corneal graft	topical chlorohexidine, polyhexamethylene	topical antifungal drop pimaricin (natamycin)	

### CORNEAL DYSTROPHIES

histology of cornea anteriorly to posteriorly: epithelium, bowmans membrane, stroma, descments membrane, endothelium

	<b>Anterior dystrophies</b>	<b>Stromal dystrophies</b>	<b>Posterior dystrophies</b>
<b>layer</b>	Epithelium and bowman's membrane	stroma	endothelium
<b>examples</b>	Meesmann: autosomal dominant & asymptomatic	Granular corneal dystrophy (dominant) Macular corneal dystrophy (Recessive)	Fuchs dystrophy can be sporadic, dominant, x-linked

	<b>Keratoconus</b>	<b>Corneal degeneration</b>	<b>Band shaped keratopathy</b>	<b>Lipid arcus</b>
<b>Layer involved and pathology</b>	Stromal; failure of cohesion between collagen fibrils and lamellae resulting in central corneal thinning	Endothelial failure There will be loss of endothelial cells causing decreased density resulting in increased space which causes edema in the stroma and bullous keratopathy  In advanced stages it can also spread to epithelium as well causing epithelial bullae which may rupture and	Subepithelial deposition of calcium phosphate in exposed part cornea which causes CO2 loss and elevated pH	Peripheral white ring lipid deposits
<b>Presentation and diagnosis</b>	Myopia, vision loss, irregular astigmatism, ectatic conical cornea Distorted red reflex during ophthalmoscopy		Visual loss and discomfort due to epithelial erosions	Asymptomatic often in elderly people but if found in young it favors hyperproteinemia
<b>causes</b>		Uveitis Cataract surgery Corneal graft failure	Associated with chronic uveitis Glaucoma Systemic hypercalcemia (hyperparathyroidism/ renal failure)	
<b>Tx</b>	<ul style="list-style-type: none"> <li>- Rigid contact lenses</li> <li>- Replacement of stroma</li> <li>- Cross linking of anterior stromal collagen</li> </ul>	Corneal graft	Symptomatic -> scraping off surgery using chelating agents like sodium edetate Excimer laser	No treatment required

## SCLERA

Main anatomy points

Sclera is 3 layers: 1- episclera ( thin, dense vascularized la, dense vascularized layer of connective tissue)

2- sclera proper: avascular structure

3- lamina fusca innermost

	<b>episcleritis</b>	<b>Scleritis</b>
	Inflammation at the surface of the sclera usually in young	Inflammation of sclera usually anteriorly usually in elderly
<b>Association with systemic disease</b>	Not associated with systemic disease	Associated with 50% of collagen vascular diseases like rheumatoid arthritis
<b>Signs and symptoms</b>	Patches of redness and mild or no discomfort	Characteristically: swollen sclera  Deep ocular pain and both inflammatory and ischemic areas may occur in the sclera
<b>tx</b>	Self limiting If symptoms are tiresome -> topical anti inflammatory treatment Severe symptoms -> NSAIDS	Anti inflammatory tx Immunosuppressants Steroids Cytotoxic therapy Sclera grafting to prevent perforation of the globe