Clinical Features eye compiled from Jatoi book

By Fatima Haider

<table>
<tr><th>Disease</th><th>Description</th></tr>
<tr><td>Chalazion</td><td>-painless nodule
- chronic (slowly growing), firm, rubbery nodule on the eyelid
- heaviness of eyelid
- eversion of eyelid shows that conjunctiva is red or reddish yellow over the nodule
- blurred vision may occur due to astigmatism caused by large chalazion of upper eyelid pressing on cornea</td></tr>
<tr><td>Hordoleum externum (Stye)</td><td>-painful, erythematous, tender pus-filled nodule
- spontaneous perforation and purulent discharge after a few days
- Eyelid margin becomes red and edematous. Pus points towards lid margin with a lash in its center. It suppurates on eyelid margin.</td></tr>
<tr><td>Hordoleum internum</td><td>-painful, red, swollen, tender eyelid
- tenderness in eyelid is more severe than stye bcz the gland is large and embedded in tough tarsal plate
- With pressure on lid, pus can come out of the duct of meibomian gland
- Eversion of eyelid shows that pus appears as a yellow spot shining through the conjunctiva</td></tr>
<tr><td>Blepharitis</td><td>Chronic or recurrent red, swollen eyelids and irregular eyelid margins
Crusty, scaly plaques, and/or oily deposits on the eyelid margin and eyelashes
Crusting usually represents seborrheic disease.
A ringlike collection around the eyelashes (collarette) with ulceration upon removal (ulcerative blepharitis) is typical of staphylococcal disease.
A smooth tubular collection at the base of the eyelash is typical of Demodex.
Eye irritation and visual abnormalities
Pain
Itchiness
Foreign body sensation, watering of the eye
Photophobia, blurred vision</td></tr>
<tr><td>Blepharitis</td><td><table>
<tr><td>Infective/ Ukerative/ Staphylococcal blepharitis</td><td>-chronic irritation, itching, lacrimation, glueing of eyelashes, photophobia
-red, edematous, inflamed eyelid margins
- yellow pus of suppurative lesions dries up and form crusts
- crusts tend to be centered around he bases of lashes. When crusts are removed, they may leave behind a tiny bleeding ulcer
- Involvement of eyelashes more severe as compared to seborrheic type</td></tr>
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<tr><td></td><td>- In severe cases, eyelashes may be matted together by yellow crust</td></tr>
<tr><td>Non infective/ Squamous/ Seborrheic blepharitis</td><td>-deposition of whitish material on lid margins associated with mild discomfort, irritation, occasional watering and history of falling eyelashes
- Eyelid margins have a shiny waxy appearance, with mild to moderate erythema and telengiectasia
-there is a dandruff like desquamation of the epidermis, with gives rise to yellow, greasy fine flakes and scales located anywhere on the lead margins and eyelashes
- the scales are soft and do not leave a small ulcer when remove
- the eye lashes are greasy
- Lid margins become edematous in severe cases</td></tr>
<tr><td>Posterior blepharitis (meibomian gland dysfunction)</td><td>-Burning sensation in eyes due to excessive fatty acid secretion
- white, frothy, foam like secretion on eyelid margin and canthi
- orifices of meibomian gland show pouting, and are capped by small oil globules
- Eversion of eyelid may show the ducts of glands as vertical yellow shining lines through the tarsal conjunctiva
- oily secretion comes out when glands are massaged
- obliteration of the mybomian gland may cause chalazion</td></tr>
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<tr><td>Trichiasis</td><td>-Foreign body sensation, lacrimation and photophobia due to misdirected lashes rubbing the cornea
- conjunctival redness
- corneal epithelial defect
- corneal ulceration and secondary infection may occur</td></tr>
<tr><td>Entropion</td><td>-Lid margin is turned inward and lashes are rubbing the cornea and conjunctiva
Types
1. Senile
2. Cicatricial
3. Spastic
4. Congenital</td></tr>
<tr><td>Ectropion</td><td>The symptoms are due to exposure of the lower bulbar and palpebral conjunctiva, loss of</td></tr>
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	contact of lower punctum with tear film and loss of support to the tear film -epiphora (watery eyes) - Chronic conjunctivitis - Exposure keratitis - Eczema and dermatitis may occur due to prolonged epiphora
Ptosis	
Benign Tumors of eyelid	**Squamous cell papilloma** - sessile or pedunculated protrusions with irregular surface **Basal cell papilloma (Seborrheic keratosis)** - brown to dark protrusions, with a greasy irregular surface **Pyogenic granuloma** - painful, rapidly growing vascuarised profileration of granulomatous tissue **Keratocanthoma** - firm pinkish indurated nodule covered with keratin **Capillary hemangioma** - pinkish red lesion which blanches with pressure and swells on crying **Xanthelasma** - slightly raised, creamy yellowish, plaque like lesions **Neurofibroma** - S shaped ptosis felt as bag of worm
Malignant Tumors of eyelid	**BASAL CELL CARCINOMA** **Nodular -** shiny, firm, pearly indurated nodule with blood vessels on its surface **Nodulo Ulcerative (Rodent ulcer)** - central ulceration, pearly raised rolled edges with fine blood vessels over the lateral margins **Sclerosing (Morpheiform) and infiltrative -** flat indurated plaque due to infiltration occurring laterally beneath the epidermis **SQUAMOUS CELL CARCINOMA** **Bowen's Disease -** roughened, scaly, erythematous hyperkeratotic, sharply demarcated patch or plaque **Nodular Type -** hyperkeratotic nodule (may be confused with keratocanthoma) **Ulcerative form -** ulcer having a red base with sharply defined indurated and everted borders **SEBACEOUS GLAND CARCINOMA** **Nodular -** discrete painless nodule (may be confused with chalazion) **Spreading -** diffuse thickening of eyelid due to infiltration into dermis (may be confused with chronic blepharitis) **MERKEL CELL CARCINOMA** Violaceous, well demarcated defined nodule with intact overlying skin **KAPOSI SARCOMA** Pink, red violet to brown lesion

Pigmented Tumors of eyelid	**CONGENITAL MELANOCYTIC NEVUS** Circumscribed, light brown to black patch or plaque with uniform color **ACQUIRED MELANOCYTIC NEVUS** **Junctional Nevus -** appear as uniform brown macule or plaque **Compound Nevus -** raised papular lesion with pigment shade variable from light tan to dark brown relatively uniform **Intradermal Nevus -** papillpmatpus lesion with little or low pigmentation **LENTIGO MALIGNA (Melanoma in situ, Hutchinson freckle, Intraepidermal melanoma)** Initially - flat pigmented macule with well defined margins Malignant transformation - invade dermis and lesion show elevation with irregular margins **MELANOMA** **Superficial Spreading type -** small elevated plaque with irregular margins and variable pigmentation **Nodular type -** blue black nodule with rapid growth ulceration and bleeding
Congenital NLD obstruction	-May be unilateral or bilateral -Watery eyes (it is important to exclude congenital glaucoma with watery eye) -Sticky mucoid and mucopurulent discharge that accumulates on eyelid margin and lashes near the medial canthus -Regurgitation test may be positive
Acquired NLD obstruction	Excessive tearing Mucoid or mucopurulent discharge Recurrent attacks of dacryocystitis Recurrent attacks of conjunctivitis
Acute canaliculitis	-Generally unilateral -Pouting punctum - punctum has classic red, swollen appearance -Canalicular eyelid margin is also erythematous and edematous -Lacrimal sac typically normal -Pressure over canaliculus will express mucopurulent, purulent or concretions from punctum
Acute Dacryocystitis	-Subacute onset of painful redness and swelling at medial canthus associated with epiphora -Swelling at medial canthus, which is reddish and tender on touch -Regurgitation test is difficult to perform bcz of tenderness -Mucopurulent or purulent discharge may be present on side of medial canthus -Abscess formation may occur in untreated cases -Abscess may rupture and pus comes out
Chronic Dacryocystitis	-Constant watering from eye -Swelling in medial canthal area -Regurgitation test may be positive with reflux of watery, mucoid or mucopurulent discharge from the puncti

	-Mucocele formation may occur if sac becomes dilated after blockage of common canaliculus -May be associated with chronic unilateral conjunctivitis
Acute Dacryo adenitis	-Rapid onset and progression -Unilateral pain/ discomfort over the Lacrimal gland -Characteristic S shaped ptosis, possibly proptosis -Palpebral conjunctival hyperemia and chemosis; possibly mucopurulent discharge -Limitation of eye movement -Painful proptosis with displacement of eyeball downward and inward -Eversion of lid is painful and shows swollen and reddish glands -Ipsilateral pre auricular lymph node enlargement and fever may be present
Chronic Dacryoadenitis	-Can be unilateral or bilateral -Insidious onset -Painless enlargement of Lacrimal gland -S shaped curve of eyelid margins (S shaped ptosis) -Proptosis rare -Displacement of eyeball downward and inward -Diplopia may occur in up and out gaze -Eversion of lid shows swelling of gland
Keratoconjunctivitis Sicca/Dry eyes	-Burning or itching sensation -Feeling of dryness, irritation, burning and foreign body sensation that becomes worse in sun, wind or hot climate -Photophobia, due to punctate epithelial keratopathy -Stringy mucus discharge -Transient blurring of vision (does not usually lead to vision loss) -Pain worse with blinking due to development of corneal epithelial filaments -Reduced volume of tears in marginal tear strip and thinning of pre corneal tear film -Presence of mucus strands and debris in conjunctiva SLIT LAMP EXAMINATION FINDINGS *Conjunctival injection - usually symmetric and bilateral * Punctate epithelial erosions - superficial punctate keratitis * Filamentary keratitis - epithelial filaments on corneal surface
Bacterial conjunctivitis	
MUCOPURULENT CONJUNCTIVITIS (PINK EYE)	-Acute onset of redness, foreign body sensation burning and discharge -On waking up, the eyelids are frequently glued together and difficult to open due to accumulation of exudates during night -In mild form: redness is maximal in fornix and palpebral parts of conjunctiva -In severe form: whole conjunctiva is hyperemic called pink eye -Discharge is mucopurulent; flakes of mucus may be present in fornix -Eyelid margins may show presence of mucopurulent discharge -Eyelashes may be matted by the discharge

	-Pupillary reaction is mild -Visual acuity is normal
PURULENT CONJUNCTIVITIS (GONOCOCCAL) **Neisseria gonorrhea**	-Hyperacute onset, extremely profuse and thick creamy pus leaking from eye -Discomfort is severe -Pain occurs when there is corneal involvement -Eyelids are edematous and sometimes cause difficulty to examine the conjunctiva -Peri ocular edema and tenderness may be present -Discharge is purulent -Hyperemia of conjunctiva is marked. Conjunctiva appears deep red and velvety in color -Severe chemosis of conjunctiva, with or without membrane formation -Pre auricular lymphadenopathy is prominent cases and in severe cases, there may be suppuration of lymph nodes -Corneal ulceration is common
MEMBRANOUS CONJUNCTIVITIS **Corynebacterium diphtheriae**	-Eyelids show mild to moderate swelling -Discharge is serous -Conjunctiva shows whitish membrane on the palpebral and fornix but not on bulbar conjunctiva -Removal of diphtheria membrane is difficult and causes tearing of epithelium and bleeding hence called true membrane -Preauricular lymph nodes are enlarged
viral conjunctivitis	
ADENOVIRUS CONJUNCTIVITIS	
EPIDEMIC KERATO CONJUNCTIVITIS (EKC)	-Acute onset of watering, redness, discomfort and photophobia -Bilateral in 60% cases -Clear, watery discharge -Eyelids may be edematous -Hyperemia of whole conjunctiva -Increased lacrimation (epiphora) -Follicles develop after few days in tarsal and forniceal conjunctiva -Lymphadenopathy (enlargement of preauricular and submaxillary lymph nodes) *Keratitis - Occurs in 80% of cases - Develops 7-10 days after infection as diffuse epithelial keratitis - May resolve within 2 weeks or may be followed by discrete subepithelial opacities due to immune response to Adenovirus - These subepithelial opacities (corneal infiltrates) may persist for months to years
PICORNAVIRUS CONJUNCTIVITIS	-Bilateral red eyes with watery discharge -Eyelids may be swollen -Watery discharge -Chemosis develop in palpebral part after a few days -Corneal involvement is punctate keratitis
HSV	Eyelids show presence of vesicles

CONJUNCTIVITIS	CONJUNCTIVA - Watery discharge - Hyperemia of whole conjunctiva - Chemosis and pseudomembrane may develop esp in small children - Follicles develop after few days in palpebral and forniceal conjunctiva CORNEA - In 2/3rd of cases, punctate epithelial keratitis without the development of corneal opacities - Punctate lesions resolve or develop into superficial stromal opacities or may progress to dendritic figures - Dendrites are always multiple, as compared to single dendrite occuring in recurrent herpetic
MOLLUSCUM CONTAGIOSUM CONJUNCTIVITIS **(Pox virus group)**	-Single or multiple lesions in healthy patients; esp widespread in immunocompromised patients such as AIDS -Nontender, skin colored, pearly, dome shaped papules with central umbilication on lid margin (individual lesions may also be painful or pruritic) -Usually 2-5 mm in diameter (giant lesions >15mm are encountered in immunocompromised patients) -Papules contain a caseous plug -Conjunctiva: shows follicular conjunctivitis with mild mucoid discharge -Punctate epithelial erosions and in rare cases, pannus may occur
COVID 19 CONJUNCTIVITIS	Follicular conjunctivitis Conjunctival hyperemia Foreign body sensation and tearing Mucopurulent discharge Follicular reaction of palpebral conjunctiva Mild eyelid swelling Conjunctival hemorrhage and pseudomembrane may occur
Chlamydial Conjunctivitis	Include 1. Trachoma 2. Adult inclusion conjunctivitis 3. Neonatal conjunctivitis
Trachoma	SUBCLINICAL STAGE - Symptoms are minimal - Low grade conjunctival reaction - Discharge is minimal - Immature follicles present in upper tarsal conjunctiva - Corneal involvement — typically punctate epithelial keratitis in upper part of cornea TYPICAL TRACHOMATOUS STAGE - Active symptomatic stage with watering, photophobia and foreign body sensation

	- Mucopurulent discharge - Follicular hyperplasia - Follicles appear more commonly on tarsal conjunctiva and fornix. They are rare on bulbar conjunctiva but when present, are pathognomonic of trachoma - Corneal pannus is subepithelial corneal vascularization along with lymphoid infiltration. Usually it is limited to upper half but tends to spread towards center and involve the entire cornea - Corneal ulceration may occur in any part of cornea, but is common at advancing edge of pannus STAGE OF SCARRING - Beginning of conjunctival scarring d development of complications - The inflammation subsides with necrosis and scarring of follicles producing linear or stellate scars in conjunctiva - Arlt's line — a linear line of scarring on tarsal conjunctiva ay occur 2 mm from margin of upper eyelid - Herbert's pits — shallow pigmented depression at the limbus caused by necrosis and cicatrization of limbal follicles. They are pathognomonic of trachoma - Regression of corneal pannus — the lymphocytic component regresses in the vascularized cornea STAGE OF SEQUELAE AND COMPLICATION - Inactive end stage - Symptoms are due to complications caused by cicatrization - Cornea is opaque with gross reduction of vision
Adult Inclusion Conjunctivitis	-ocular discomfort, foreign body sensation, discharge -mucopurulent discharge - hyperemia of conjunctiva - follicles present predominantly in lower conjunctiva - superficial epithelial keratitis of upper half of cornea - preauricular lymphadenopathy
Neonatal conjunctivitis	
Allergic Conjunctivitis	
Pterygium	-triangular fibro vascular connective tissue overgrowth from conjunctiva to cornea in interpalpebral region - has a body, head and a cap - Stocker line (linear epithelial iron deposition) may be seen - Deterioration of vision due to astigmatism or mechanical obstruction - Diplopia may occur due to limitations in ocular movements
Pseudo Pterygium	-A fold of bulbar Conjunctiva attached to the cornea - probe can be passed under the neck - Diplopia may occur due to interference in ocular movements

Vit A Deficiency xerophthalmia	-Night blindness - Xerosis (Dryness of conjunctiva, loss of goblet cells, squamous metaplasia, keratinization) - Bitot spots - punctate epithelial erosions - corneal ulceration - keratomalacia - yellow white dots in peripheral fundus of retina
Bacterial keratitis	-pain - corneal stain positive - hazy cornea - ciliary congestion - hypopyon
Fungal keratitis	**FILAMENTOUS KERATITIS** - Feathery edges - Satellite lesions - Hypopyon **CANDIDAL KERATITIS** - KOH stain is diagnostic
Viral keratitis	**HSV** - Dendritic ulcer with club shaped ends - Geographical (amoeboid) ulcer
Acanthamoeba keratitis	-Ring infiltrate (ring abscess) - perineural infiltrates (radial keratoneuritis) and enlargement of corneal nerves - pathognomonic - contact lens wearer
keratoconus	-cone like protrusion of cornea - progressive myopia and astigmatism - photophobia - monocular diplopia - acute hydrops (collection of water in corneal stroma due to breaks in descemet membrane) - oil droplet reflex on distant direct ophthalmoscopy - Munson’s sign is the bulging of lower eyelid when patient looks down - scissors reflex on retinoscopy - Fleischer's ring is deposition of iron in the epithelium, around the base of cone
Episcleritis	-irritation - lesions appears bright red or salmon pink color - straight inflamed vessels radiate posteriorly from limbus - blanch on phenylephrine - lesion moves with cotton tipped applicator over the deeper tissue
Scleritis	-immune mediated vasculitis that inflames and destroys the sclera - intense pain

	- purple-ish hue - DO NOT blanch on phenylephrine - Inflammatory necrotizing - most severe - Diffuse non necrotizing - most common - Surgically induced necrotizing scleritis (SINS) - Trabeculectomy and pterygium can cause SINS due to use of Mitomycin C - Red nodule in nodular scleritis is visible that cannot be moved over underlying tissue - Scleromalacia perforans - Anterior necrotizing scleritis without inflammation - Ultrasonography of posterior scleritis shows characteristic T sign due to thickening of posterior sclera and fluid in Tenon's space - Infectious scleritis is the only indication where scleral biopsy may be required
Cataract	
Aphakia	
Glaucoma	CONGENITAL GLAUCOMA - Lacrimation, photophobia, blepharospasm - Corneal haze due to corneal edema - Buphthalmos (enlarged eyeball like an ox eye) - Enlargement of corneal diameter - Breaks in Descemet's membrane - Haab striae - healed breaks in Descmet's membrane - Deep anterior chamber - Axial myopia due to enlargement of eye - Glaucomatous cupping - Reduced visual acuity - Corneal edema ACUTE PRIMARY ANGLE CLOSURE GLAUCOMA - Pain - Perception of halos around eyes - Decreased visual acuity - Raise IOP - may be as high as 70 mmHg - Conjunctiva is red and congested - Limbus show marked ciliary congestion - Cornea is cloudy - Aqueous flare - Pupils are mid dilated and fixed - Iris show white atrophic patches - Lens - Glaukomflecken (anterior subcapsular lens opacities) - Optic disc swelling - Gonioscopy show narrow angle
Anterior Uveitis	-Keratic precipitates (Mutton fat KPs) - Iris nodules (Koeppe's , Busacca's) - Painful
Intermediate Uvietis (Pars Planitis)	-Vitreous cells (inflammatory cells) - Snowballs

	- Snowbanking - Peripheral vasculitis/ periphlebitis with venous sheathing - painless
Posterior Uveitis	-reduced vision - floaters (black spots moving in front of eye) - metamorphopsia - photopsia - positive scotoma - headlight in fog sign - toxoplasmosis - pizza pie appearance - CMV - cotton ball colonies - candida
Toxoplasmosis	-Necrotic granulomatous -headlight in fog appearance
TB	-Chronic granulomatous ANTERIOR UVIETIS Mutton fat KPs Broad based posterior synechiae Iris nodules INTERMEDIATE UVIETIS Inferior snowball opacities Vitritis Snowbanking Peripheral vascular sheathing POSTERIOR UVEITIS Choroidal tubercle (nodule) Disseminated choroiditis Serpiginous like choroiditis Retinal vasculitis (periphlebitis) Sub retinal abscess
Sarcoidosis	Non caseating granulomatous
Behcet's disease	-Non granulomatous - Transient mobile hypopyon in a relatively white eye
Diabetic Retinopathy	-Formation of micro aneurysms due to loss of pericytes - cotton wool spots - IRMA (Intra Retinal Microvascular Abnormalities) - Neovasularization BACKGROUND DIABETIC RETINOPATHY Microaneurysms - earliest detectable lesions Retinal edema Retinal hemorrhages

	- Flame shaped superficial hemorrhages - Intra retinal hemorrhages (dot blot and dark blot) Hard exudates PRE PROLIFERATIVE DIABETIC RETINOPATHY Cotton wool spots (soft exudates) Generalized dilatation and tortuosity of veins IRMA PROLIFERATIVE DIABETIC RETINOPATHY Retinal Neovasularization (NVD, NVE) Neovasularization of iris Pre retinal hemorrhage Vitreous hemorrhage Tractional retinal detachment
Hypertensive Retinopathy	Broadening of arteriolar light reflex Arteriovenous crossing changes - Salus sign - Gunn sign - Bonnet's sign Retinal edema Hard exudates Cotton wool spots Copper wire and silver wire color of arterioles Optic disc edema Dot blot and flame hemorrhages
Malignant Hypertension	Bilateral disc edema (papilledema) Fibrinoid necrosis of choroidal arterioles Elschnig's spots Siegrit's streaks Exudative retinal detachment
Toxemia of pregnancy	Blurred vision Severe arteriolar spasm - retinal vessels look like corkscrew Narrowing of nasal arterioles Cotton wool spots Superficial retinal hemorrhages Retinal edema Hard exudates Optic disc swelling Exudative retinal detachment (rare)
NON ISCHEMIC CRVO	FUNDUS CHANGES -Spontaneous venous pulsation is absent - retinal veins are dilated, engorged and tortuous - Dot/ blot and flame shaped hemorrhages are present in all 4 quadrants and most numerous in periphery - cotton wool spots

	- optic disc and macular edema (mild) FFA Capillary perfusion OCT -Cystoid macular edema leading to visual loss
ISCHEMIC CRVO	FUNDUS -Retinal veins very tortuous and engorged - Deep blot and flame shaped retinal hemorrhages (tomato splashed appearance) - macular area full of hemorrhages, severely edematous - disc edema and hyperemia is severe - cotton wool spots - break through vitreous hemorrhage OCT -Macular edema - epi retinal membrane and retinal atrophy - enlarged FAZ ERG -Reduced amplitude of b wave OTHERS -Rubeosis iridis
CRAO	Amaurosis fugax - painless temporary loss of vision in one or both eyes FUNDUS EXAMINATION -Opacification of retina (pale whitish appearance - resolves in 4 - 6 weeks - cherry red spot in center of macular - marked narrowing of retinal arteries - mild narrowing of retinal veins - cattle tracking OCT -Embolic plaque at optic nerve head FFA -Delay in arterial filling - Masking of choroidal fluorescence due to retinal edema ERG -Diminished b wave
Rhematogenous Retinal Detachment	-Flashing light (photopsia) - Floaters (dark spots) - sudden painless loss of vision - field defects perceived as dark curtain

	SIGNS *Confrontation test - detect visual field defects * Relative afferent pupillary defect (Marcus Gunn pupil) - when there is total detachment * Decreased IOP * Mild anterior uvietis * Saffer's sign - pigment in anterior vitreous * Direct ophthalmoscopy - altered red reflex
Retinitis pigmentosa	SYMPTOMS *Night blindness * Visual field constriction - results in a small tunnel vision * Defective vision during daytime with progression of disease * blindness - advanced stage - Involvement of macula SIGNS *Visual acuity - normal in early stage; decrease gradually in late stage * Contrast sensitivity is affected * Color vision - normal in early stage FUNDUS EXAMINATION *Retinal blood vessels — thread like due to hyalinization of vessel wall *Pigmentary bone corpuscles or bone spicules * Optic disc has pale waxy appearance * Maculopathy - Atrophic patch - Cellophane maculopathy (pre macular membrane formation) - Cystoid macular edema OCULAR ASSOCIATIONS -Posterior subcapsular cataract - Open angle glaucoma - keratoconus - high myopia - posterior vitreous detachment
Retinoblastoma	-congenital malignant tumor arising from retinoblasts of sensory retina - presents within 3 years of life - Gene - chromosome 13q14 - Heritable retinoblastoma - RB gene mutation in all cells of body - No Heritable - RB gene mutation only in eye cells - Exophytic growth - grows towards subretinal space and detach retina. It gives appearance of exudative retinal detachment with subretinal, multilobulated white mass - Endophytic growth - tumor protrudes from retina into vitreous cavity, retina is not detached. Pale pink or white mass with newly formed blood vessels on its surface - spread through optic nerve - Most common metastasis - bones STAGES OF RETINOBLASTOMA ● Quiescent stage

	● Inflammatory/ glaucomatous stage ● Extraocular extension stage ● Metastasis stage
Optic Neuritis	-inflammation of optic nerve - acute or subacute mono ocular visual loss - Discomfort or pain in or around eye - phosphenes - sensation of tiny white or colored flashes or sparkles produced by pressure on eyeball - reduced visual acuity - impaired color vision - RAPD - central or centrocecal scotoma
Papilledema	FULLY DEVELOPED PAPILLEDEMA - Normal visual acuity - Normal pupil reactions - Disc is hyperemic and elevated with blurred margins - Venous pulsation is absent when IOP > 20 - 25 mmHg - Splinter and flame shaped hemorrhages - Cotton wool spots and exudates - Incomplete macular star - Paton's lines - Earliest sign is loss of spontaneous venous pulsation blurring nasal disc margin - Most common visual field defect is enlargement of blindspot CHRONIC PAPILLEDEMA - Visual acuity reduced - Hemorrhage, exhudates, edema resolves - Disc has champagne cork appearance - Blind spot enlarge - Visual field constrict ATROPHIC PAPILLEDEMA - Visual acuity is severely impaired - Disc is greyish white with blur margins
Optic Neuropathy	GLAUCOMATOUS OPTIC NEUROPATHY - Deep and wide cupping of optic disc - Thinning of neuroretinal rim - Pale color of disc - Nasal shifting of blood vessels - Laminar dot sign present in disc - Peripapillary atrophy may be present ARTERITIC ANTERIOS ISCHEMIC OPTIC NEUROPATHY - Sudden onset of mono ocular visual loss - RAPD is present - Swollen disc, typically pale in appearance

	- Visual fields show altitudinal defects - Increased ESR, CRP - CBC – Leukocytosis, increased platelets NON ARTERITIC AION - Sudden onset of mono ocular vision loss - RAPD is present - Optic disc swollen, typically pale - Visual fields show altitudinal defects COMPRESSIVE OPTIC NEUROPATHY - Painless and gradual visual loss - Optic disc edematous and pale INFILTRATIVE OPTIC NEUROPATHY - Painless and gradual visual loss - Optic disc edematous and pale TRAUMATIC OPTIC NEUROPATHY - Sudden visual loss LEBERS HEREDITARY OPTIC NEUROPATHY (LHON) - Acute unilateral, painless visual loss - Pupil reactions normal - Fundoscopy — disc swelling, thickening (swelling) of peripapillary retinal nerve fiber layer, peripapillary telengiectasia - Visual field — dense centrocecal scotoma NUTRITIONAL OPTIC NEUROPATHY - Subacute painless bilateral visual loss - Optic disc swollen and pale - Visual fields show central/ centrocecal scotoma TOXIC OPTIC NEUROPATHY *METHANOL - Bilateral blindness *ETHAMBUTAL - Bilateral painless gradual loss of vision - Optic disc normal or swollen and pale - Perimetry shows central or peripheral visual field defects
Lesions of Visual pathway	
3rd nerve palsy	-eye is out and down - ptosis - diplopia - pupil is dilated and show poor response to light Diabetes and HTN cause pupil sparing 3rd nerve palsy

4th nerve palsy	-diplopia in down gaze (at near distance or reading) - head tilt - hypertropia
6th nerve palsy	-diplopia - esotropia in primary gaze
Myasthenia Gravis	
Migraine	
Pupillary light Reflex	
Swinging flashlight test	
RAPD / Marcus Gunn pupil	
TAPD/Amaurotic pupil	
Argyl Robertson pupil	
Adie's Tonic pupil	
Horner's Syndrome	
Anisocoria	
proptosis	
Preseptal Cellulitis	
Orbital Cellulitis	
Endophthalmitis	-inflammation of intraocular structures of eye -may be due to endogenous or exogenous infection Exogenous source of infection - Trauma - Perforating corneal ulcer - Intra ocular surgery e.g. cataract, glaucoma - After intravitreal injection Signs - Swollen eyelids - Conjunctiva show congestion and chemosis - Cornea is hazy - Anterior chamber - fibrinous exudate, hypopyon

	- Loss of red reflex - Vitreous exudation - Increase IOP in early stages - Decrease IOP later due to ciliary process destruction
Thyroid eye disease/Grave's Ophthalmopathy	-enlargement of extra ocular muscles (4-8 times) - inferior and medial rectus most commonly affected - proptosis (exophthalmos) - papilledema - restrictive myopathy - diplopia - optic neuropathy - retrobulbar discomfort - peri orbital swelling - conjunctiva - hyperemia and chemosis - cornea - epithelial erosion, superior limbic keratoconjunctivitis - keratoconjunctivitis sicca - Dalrymple's sign (characterstic finding) - retraction of upper eyelids - Kocher sign - staring and frightened appearance of eyes - Von Graefe sign - lid lag - Stellwag's sign - infrequent blinking - Mobius sign - weakness of convergence