KGMC PAPER EYE 2023 - SOLVED

Follow the MBBS/BDS Solved Papers & Study Hub channel on WhatsApp: https://whatsapp.com/channel/0029VaxDqJX4IBh5FVddhQ1A

Clinical Pearls for Correct Answers:

1. **Blindness Definition:** "WHO defines blindness as best corrected visual acuity less than 3/60 in the better eye."
2. **MRI Contraindication:** "Never order an MRI when a metallic intraocular foreign body is suspected due to the risk of movement and further injury."
3. **BCC Treatment:** "Excision with frozen section control is the gold standard for treating eyelid basal cell carcinoma."
4. **Pediatric Proptosis:** "In children, rapid-onset unilateral proptosis suggests rhabdomyosarcoma until proven otherwise."
5. **Thyroid Eye Disease Surgery Order:** "In thyroid eye disease, surgical interventions proceed as decompression, then strabismus correction, followed by lid repair."
6. **Hering's Law in Ptosis:** "Hering's law explains the reciprocal eyelid movements in congenital ptosis when one lid is manipulated."
7. **Orbital Floor Imaging:** "Waters view X-ray is best for visualizing orbital floor fractures after blunt trauma."
8. **DCR Osteum Placement:** "During DCR, create the osteum beneath the middle turbinate for optimal lacrimal drainage."
9. **Smoking and Thyroid Eye Disease:** "Smoking exacerbates thyroid eye disease; cessation can improve outcomes."
10. **Entropion Factors:** "Age-related entropion is usually due to lid laxity and muscle override, not posterior lamella shortening."

Question 1

Question: According to the WHO, blindness is defined when the best corrected binocular visual acuity is less than what?

Answer Choices: a) 1/60
b) 6/60
c) 3/60
d) 6/6
e) 2/60

Correct Answer: c) 3/60

Explanation: The WHO defines blindness as a best corrected visual acuity of less than 3/60 in the better eye.

Why Other Options Are Incorrect:

- **a) 1/60:** This indicates profound or near-total blindness.
- **b) 6/60:** Classified as severe visual impairment, not blindness.
- **d) 6/6:** Represents normal visual acuity.
- **e) 2/60:** More severe than the WHO's threshold but not the standard definition.

Clinical Application: Accurate classification aids in public health planning and ensures patients receive appropriate resources and support.

Question 2

Question: A 5-year-old child presents after a road traffic accident with an open globe injury, and there's suspicion of a retained metallic intraocular foreign body. Which diagnostic test is contraindicated?

Answer Choices: a) Indirect ophthalmoscopy
b) Computed tomography (CT) scan
c) Electrophysiology
d) Magnetic resonance imaging (MRI)
e) B-scan (ophthalmic ultrasound)

Correct Answer: d) Magnetic resonance imaging (MRI)

Explanation: MRI is contraindicated because the magnetic field can move metallic foreign bodies, causing further damage.

Why Other Options Are Incorrect:

- **a) Indirect ophthalmoscopy:** Useful for posterior segment examination.
- **b) CT scan:** Effective in detecting metallic objects.
- **c) Electrophysiology:** Assesses retinal function without physical risk.
- **e) B-scan ultrasound:** Safe and helpful when media opacities are present.

Clinical Application: Choose imaging modalities like CT scans or ultrasounds when metallic foreign bodies are suspected.

Question 3

Question: A 75-year-old farmer has a lesion on his lower eyelid medially for a few years with recurrent bleeding. Examination shows rolled margins with surface telangiectasia. Biopsy confirms basal cell carcinoma (BCC). What is the most appropriate treatment?

Answer Choices: a) Cryotherapy to the cancer and margins
b) Local antimetabolite treatment
c) Radiation with 2500 rads to the lesion and margins
d) Excision with frozen section control of the margins
e) Cautery to the margins

Correct Answer: d) Excision with frozen section control of the margins

Explanation: Surgical excision with margin control ensures complete removal and minimizes recurrence.

Why Other Options Are Incorrect:

- **a) Cryotherapy:** Not first-line for eyelid BCC.
- **b) Local antimetabolites:** Less effective for BCC.
- **c) Radiation:** Reserved for inoperable cases.
- **e) Cautery:** Does not guarantee complete removal.

Clinical Application: Early surgical intervention is key to preventing local invasion and preserving eyelid function.

Question 4

Question: A 4-year-old boy presents with a 3-month history of right eye bulging, conjunctival chemosis, and a sluggish pupillary reaction. What is the most likely cause of proptosis?

Answer Choices: a) Cavernous hemangioma
b) Rhabdomyosarcoma
c) Lymphangioma
d) Mucocele
e) Orbital cellulitis

Correct Answer: b) Rhabdomyosarcoma

Explanation: Rhabdomyosarcoma is the most common primary orbital malignancy in children, presenting with rapid unilateral proptosis.

Why Other Options Are Incorrect:

- **a) Cavernous hemangioma:** Common in adults.
- **c) Lymphangioma:** Presents with intermittent proptosis.
- **d) Mucocele:** Associated with sinus issues in older individuals.
- **e) Orbital cellulitis:** Usually presents acutely with pain and systemic symptoms.

Clinical Application: Prompt imaging and biopsy are crucial for early diagnosis and treatment to improve prognosis.

Question 5

Question: In severe thyroid-related ophthalmopathy with proptosis and lid retraction, which is the correct order for staged surgical interventions?

Answer Choices: a) Decompression, strabismus surgery, lid repair
b) Strabismus surgery, decompression, lid repair
c) Lid repair, decompression, strabismus surgery
d) Decompression, lid repair, strabismus surgery
e) Blepharoplasty, decompression, lid repair

Correct Answer: a) Decompression, strabismus surgery, lid repair

Explanation: This order addresses proptosis first, then ocular alignment, followed by cosmetic corrections.

Why Other Options Are Incorrect:

- **b, c, d, e):** Altering the sequence can lead to suboptimal outcomes due to changes in orbital anatomy after each surgery.

Clinical Application: Following the proper surgical sequence ensures both functional and aesthetic restoration.

Question 6

Question: In a child with congenital ptosis, lifting the ptotic eyelid causes the contralateral eyelid to fall. What best explains this phenomenon?

Answer Choices: a) Inhibition of Muller's muscle
b) Relaxation of the frontalis muscle
c) Relaxation of the levator palpebrae superioris
d) Hering's law
e) Relaxation of Muller's muscle

Correct Answer: d) Hering's law

Explanation: Hering's law states that equal innervation is supplied to bilateral synergistic muscles. Lifting one lid reduces the neural drive, causing the opposite lid to droop.

Why Other Options Are Incorrect:

- **a, c, e):** Do not explain the bilateral neural mechanisms involved.
- **b):** Frontalis muscle is not the primary elevator in this context.

Clinical Application: Understanding this helps in planning surgical interventions for ptosis.

Question 7

Question: A 24-year-old woman has enophthalmos and restricted upgaze after blunt trauma to the left orbit. Which plain film X-ray view is most helpful?

Answer Choices: a) Caldwell view
b) Lateral view
c) Waters view
d) Axial view
e) Anteroposterior view

Correct Answer: c) Waters view

Explanation: Waters view provides optimal visualization of the orbital floor, detecting blowout fractures.

Why Other Options Are Incorrect:

- **a) Caldwell view:** Best for frontal sinus.
- **b, d, e):** Less informative for orbital floor fractures.

Clinical Application: Select appropriate imaging to quickly diagnose and manage orbital injuries.

Question 8

Question: A 40-year-old woman with right eye epiphora and positive regurgitation test has nasolacrimal duct obstruction confirmed on syringing. During DCR surgery, at what level is the osteum created?

Answer Choices: a) Superior turbinate
b) Middle turbinate
c) Inferior turbinate
d) Posterior lacrimal crest
e) Anterior lacrimal crest

Correct Answer: b) Middle turbinate

Explanation: The osteum is created beneath the middle turbinate to facilitate drainage into the middle meatus.

Why Other Options Are Incorrect:

- **a, c):** Incorrect anatomical locations for osteum creation.
- **d, e):** Landmarks but not the drainage point.

Clinical Application: Proper osteum placement is essential for DCR success and symptom relief.

Question 9

Question: In a patient with thyroid eye disease at risk of exposure keratopathy, which factor is most likely to worsen her symptoms?

Answer Choices: a) Alcohol
b) Smoking
c) Aspirin
d) Caffeine
e) Steroid use

Correct Answer: b) Smoking

Explanation: Smoking exacerbates orbital inflammation and is a modifiable risk factor.

Why Other Options Are Incorrect:

- **a, c, d):** Less significant impact on thyroid eye disease.
- **e):** Steroids are used to reduce inflammation.

Clinical Application: Advise patients to cease smoking to improve disease course.

Question 10

Question: A 65-year-old woman has entropion of the right lower eyelid causing corneal irritation. Which factor is least likely to contribute to her entropion?

Answer Choices: a) Preseptal orbicularis override
b) Horizontal lid laxity
c) Posterior lamella foreshortening
d) Capsulopalpebral fascia disinsertion
e) Lateral lid laxity

Correct Answer: c) Posterior lamella foreshortening

Explanation: Posterior lamella shortening is more associated with cicatricial entropion, not involutional entropion seen in elderly.

Why Other Options Are Incorrect:

- **a, b, d, e):** Common factors in age-related entropion.

Clinical Application: Identify contributing factors to choose the appropriate surgical correction.

Question 11

Question: After pars plana vitrectomy with silicone oil tamponade, what is the most common refractive change in a phakic patient?

Answer Choices: a) More hypermetropic
b) More myopic
c) No refractive changes
d) —
e) —

Correct Answer: a) More hypermetropic

Explanation: Silicone oil causes a hyperopic shift due to its lower refractive index compared to the vitreous.

Why Other Options Are Incorrect:

- **b) More myopic:** Incorrect; the shift is toward hyperopia.
- **c) No change:** Refractive changes do occur.

Clinical Application: Inform patients about potential refractive changes postoperatively.

Question 12

Question: A 30-year-old man has decreased vision in his left eye. Fundoscopy shows serous elevation of the retina at the macula. What would OCT likely reveal?

Answer Choices: a) RPE detachment
b) Elevation of the sensory retina
c) Edema in the inner nuclear layer
d) Edema in the outer nuclear layer
e) Posterior vitreous detachment

Correct Answer: b) Elevation of the sensory retina

Explanation: Central serous retinopathy causes detachment of the neurosensory retina due to subretinal fluid.

Why Other Options Are Incorrect:

- **a):** RPE remains attached.
- **c, d):** Edema is not typically in these layers.
- **e):** Unrelated to CSR.

Clinical Application: OCT aids in diagnosis and monitoring of CSR.

Question 13

Question: A 60-year-old diabetic woman develops blurred vision after cataract surgery. FFA shows a flower petal pattern of hyperfluorescence. Which retinal layer is responsible for this macular edema?

Answer Choices: a) Inner plexiform layer
b) Outer nuclear layer
c) Outer plexiform layer (Henle's fiber layer)
d) Retinal pigment epithelium
e) Inner nuclear layer

Correct Answer: c) Outer plexiform layer (Henle's fiber layer)

Explanation: Cystoid spaces form in the outer plexiform layer, causing the characteristic pattern.

Why Other Options Are Incorrect:

- **a, b, e):** Not primary sites of fluid accumulation in CME.
- **d):** RPE is not where cystoid spaces form.

Clinical Application: Recognize CME to initiate appropriate treatments like NSAIDs or steroids.

Question 14

Question: A 34-year-old man with recurrent CSR presents with serous retinal detachment. What is a well-known risk factor for his condition?

Answer Choices: a) H. pylori infection
b) Oral steroids
c) Pregnancy
d) Hypertension
e) Metastasis

Correct Answer: b) Oral steroids

Explanation: Steroids increase choroidal permeability, leading to fluid leakage under the retina.

Why Other Options Are Incorrect:

- **a):** Less established association.
- **c):** Unlikely in males.
- **d):** Not a primary risk factor.
- **e):** Unrelated.

Clinical Application: Review and adjust medications that may contribute to CSR.

Question 15

Question: A patient has sudden painless loss of vision, and the fundus cannot be visualized. Which investigation helps in assessing the retina?

Answer Choices: a) A-scan
b) B-scan
c) Keratometry
d) Indirect ophthalmoscopy
e) Pachymetry

Correct Answer: b) B-scan

Explanation: B-scan ultrasound allows visualization of the posterior segment despite opaque media.

Why Other Options Are Incorrect:

- **a):** Measures axial length.
- **c):** Assesses corneal curvature.
- **d):** Requires clear media.
- **e):** Measures corneal thickness.

Clinical Application: Use B-scan to diagnose conditions like retinal detachment when the fundus is obscured.

Clinical Pearls for Correct Answers:

16. **B-Scan for Opaque Media:** "Use B-scan ultrasonography to evaluate the retina when the fundus cannot be visualized due to media opacities."
17. **Treating Posterior Capsular Opacification:** "YAG laser capsulotomy is the treatment of choice for posterior capsular thickening after cataract surgery."
18. **Visual Field Defects in Glaucoma:** "Homonymous hemianopia is not typically associated with glaucoma; think of neurological causes instead."
19. **Cystoid Macular Edema Site:** "In cystoid macular edema, fluid accumulates in the outer plexiform layer (Henle's layer), creating a 'flower petal' pattern on angiography."
20. **Conjunctivitis Clues:** "Red eye with discharge and mild pain suggests conjunctivitis—think infection or allergy."
21. **Vernal Conjunctivitis Patterns:** "In young boys with seasonal itching and redness that worsen in warm months, consider vernal conjunctivitis."

22. **Bacterial Keratitis Risk:** "Agricultural trauma increases the risk of bacterial keratitis; prompt antibiotic treatment is crucial."
23. **Phthiriasis Palpebrarum Indicators:** "Irritation and mild redness in impoverished patients may indicate lice infestation of the eyelashes."
24. **Herpes Simplex Keratitis Sign:** "Branching epithelial defects on the cornea are characteristic of herpes simplex keratitis."
25. **Vitamin A and Tear Film:** "Vitamin A deficiency affects the mucin layer of the tear film, leading to dry, lusterless conjunctiva."

Question 16

Question: A patient presents with sudden painless loss of vision, and the fundus cannot be visualized. Which investigation is most helpful to assess the retina?

Answer Choices: a) A-scan
b) B-scan
c) Keratometry
d) Indirect ophthalmoscopy
e) Pachymetry

Correct Answer:
b) **B-scan**

Explanation: B-scan ultrasonography allows visualization of the posterior segment when the fundus view is obstructed due to media opacities like dense cataract or vitreous hemorrhage.

Why Other Options Are Incorrect:

- **a) A-scan:** Measures axial length, not helpful for retinal visualization.
- **c) Keratometry:** Assesses corneal curvature.
- **d) Indirect ophthalmoscopy:** Requires a clear media for fundus visualization.
- **e) Pachymetry:** Measures corneal thickness.

Clinical Application: Use B-scan to detect retinal detachments, tumors, or vitreous hemorrhages when direct examination isn't possible. It guides management decisions in opaque media conditions.

Question 17

Question: A patient who underwent cataract surgery 6 months ago returns with blurry vision. On examination, there's posterior capsular thickening. Which treatment modality is most useful?

Answer Choices: a) Argon laser
b) YAG laser

c) Excimer laser
d) Krypton laser
e) Diode laser

Correct Answer:
b) **YAG laser**

Explanation: YAG laser capsulotomy creates an opening in the opacified posterior capsule, restoring visual clarity after posterior capsular opacification (PCO).

Why Other Options Are Incorrect:

- **a) Argon laser:** Used for retinal photocoagulation, not effective for PCO.
- **c) Excimer laser:** Used in corneal refractive surgeries.
- **d) Krypton laser:** Also used in retinal treatments.
- **e) Diode laser:** Less commonly used for PCO.

Clinical Application: Recognize PCO as a common post-cataract surgery complication treatable with YAG laser capsulotomy, providing quick restoration of vision.

Question 18

Question: A patient with glaucoma presents with pain and decreased vision. Visual acuity is 6/24 in the right eye and 6/60 in the left eye. Which visual field defect is **not** associated with glaucoma?

Answer Choices: a) Nasal step
b) Paracentral defect
c) Arcuate scotoma
d) Homonymous hemianopia
e) Ring scotoma

Correct Answer:
d) **Homonymous hemianopia**

Explanation: Homonymous hemianopia results from post-chiasmal lesions (e.g., stroke, tumor) affecting the optic tracts or visual pathways, not from glaucoma.

Why Other Options Are Incorrect:

- **a) Nasal step:** Common in early glaucoma.
- **b) Paracentral defect:** Seen in glaucoma.
- **c) Arcuate scotoma:** Characteristic of glaucoma.
- **e) Ring scotoma:** Can occur in advanced glaucoma.

Clinical Application: Differentiate glaucomatous visual field defects from neurological ones to guide appropriate management and referrals.

Question 19

Question: A 60-year-old female presents with blurred vision after uncomplicated cataract surgery. Fundus fluorescein angiography (FFA) shows a flower petal pattern of hyperfluorescence. Which retinal layer accounts for this macular edema?

Answer Choices: a) Inner plexiform layer
b) Outer nuclear layer
c) Outer plexiform layer (Henle's layer)
d) Inner nuclear layer
e) Retinal pigment epithelium

Correct Answer:
c) **Outer plexiform layer (Henle's layer)**

Explanation: Cystoid macular edema (CME) involves fluid accumulation in the outer plexiform layer, leading to the characteristic flower petal appearance on FFA.

Why Other Options Are Incorrect:

- **a, b, d):** Not the primary sites of fluid accumulation in CME.
- **e) Retinal pigment epithelium:** Involved in other pathologies like age-related macular degeneration.

Clinical Application: Identify CME as a cause of postoperative vision loss to initiate treatments like NSAIDs or corticosteroids promptly.

Question 20

Question: A 45-year-old patient presents with redness in the right eye for the last 4-5 days, accompanied by discharge and mild pain. What is the most likely diagnosis?

Answer Choices: a) Blepharitis
b) Conjunctivitis
c) Episcleritis
d) Keratitis
e) Uveitis

Correct Answer:
b) **Conjunctivitis**

Explanation: Conjunctivitis commonly presents with redness, discharge, and mild discomfort, often without significant pain.

Why Other Options Are Incorrect:

- **a) Blepharitis:** Involves eyelid margins with crusting.
- **c) Episcleritis:** Redness without discharge, mild discomfort.
- **d) Keratitis:** More severe pain, photophobia, possible vision loss.
- **e) Uveitis:** Deep eye pain, photophobia, decreased vision.

Clinical Application: Prompt recognition allows for appropriate antimicrobial therapy and reduces transmission if infectious.

Question 21

Question: A 10-year-old boy is brought with recurrent redness, irritation, and photophobia that worsens in summer and improves in winter. His vision is 6/6 in both eyes, and there's watery discharge. What is the most probable cause?

Answer Choices: a) Allergic conjunctivitis
b) Keratitis
c) Vernal conjunctivitis
d) Viral conjunctivitis
e) Scleritis

Correct Answer:
c) **Vernal conjunctivitis**

Explanation: Vernal conjunctivitis is a seasonal allergic condition common in young boys, exacerbated in warm months.

Why Other Options Are Incorrect:

- **a) Allergic conjunctivitis:** Similar but less severe, not necessarily seasonal.
- **b) Keratitis:** Involves corneal inflammation, more pain.
- **d) Viral conjunctivitis:** Often associated with systemic symptoms.
- **e) Scleritis:** Severe pain, redness, not seasonal.

Clinical Application: Manage with antihistamines and mast cell stabilizers; consider corticosteroids for severe cases.

Question 22

Question: A 50-year-old patient presents with redness, irritation, photophobia, and severe pain in the left eye. He has a history of agricultural trauma. Vision is 6/6 in the right eye and hand movements in the left. There is severe redness and a corneal defect. What is the most probable cause?

Answer Choices: a) Conjunctivitis
b) Blepharitis
c) Bacterial keratitis
d) Viral keratitis
e) Subconjunctival hemorrhage

Correct Answer:
c) **Bacterial keratitis**

Explanation: Agricultural trauma introduces bacteria into the cornea, leading to bacterial keratitis characterized by severe pain, redness, and corneal ulceration.

Why Other Options Are Incorrect:

- **a) Conjunctivitis:** Less severe symptoms.
- **b) Blepharitis:** Involves eyelid margins.
- **d) Viral keratitis:** Usually less severe pain, dendritic ulcers.
- **e) Subconjunctival hemorrhage:** Red eye without pain or vision loss.

Clinical Application: Initiate intensive topical antibiotics promptly to prevent corneal perforation and preserve vision.

Question 23

Question: A 50-year-old poor and illiterate patient presents with irritation in both eyes. Examination reveals mild conjunctival redness; vision is 6/6 in both eyes. What is the most probable cause?

Answer Choices: a) Allergic conjunctivitis
b) Anterior blepharitis
c) Phthiriasis palpebrarum
d) Posterior blepharitis
e) Viral keratitis

Correct Answer:
c) **Phthiriasis palpebrarum**

Explanation: Phthiriasis palpebrarum is lice infestation of the eyelashes, common in low socioeconomic conditions, causing irritation and mild redness.

Why Other Options Are Incorrect:

- **a, b, d):** Blepharitis involves eyelid margin inflammation but not necessarily linked to hygiene.
- **e) Viral keratitis:** Involves corneal inflammation.

Clinical Application: Treatment involves mechanical removal of lice and application of ophthalmic-grade petrolatum ointment.

Question 24

Question: A 50-year-old patient presents with irritation and pain in the right eye for 10-15 days. Examination shows mild conjunctival redness and branching epithelial corneal defect. How will you treat this patient?

Answer Choices: a) Observation
b) Oral analgesic
c) Topical antibiotic
d) Topical antifungal
e) Topical antiviral

Correct Answer:
e) **Topical antiviral**

Explanation: Branching epithelial defects are characteristic of herpes simplex keratitis, which requires antiviral therapy.

Why Other Options Are Incorrect:

- **a) Observation:** Delays treatment, risking worsening.
- **b) Oral analgesic:** Symptomatic relief only.
- **c) Topical antibiotic:** Ineffective against viruses.
- **d) Topical antifungal:** Not indicated.

Clinical Application: Start topical antivirals like acyclovir promptly to limit corneal damage and prevent complications.

Question 25

Question: A 50-year-old female with a history of anorexia nervosa is brought in for ocular problems. Vision is 6/6 in both eyes. There are conjunctival dryness and lusterless spots indicative of vitamin A deficiency. Which layer of the tear film is affected by this condition?

Answer Choices: a) Aqueous layer
b) Lipid layer
c) Lactoferrin
d) Mixed layer
e) Mucin layer

Correct Answer:
e) **Mucin layer**

Explanation: Vitamin A deficiency leads to goblet cell dysfunction, reducing mucin production, affecting the mucin layer.

Why Other Options Are Incorrect:

- **a) Aqueous layer:** Produced by lacrimal glands.
- **b) Lipid layer:** Produced by meibomian glands.
- **c) Lactoferrin:** A component of the aqueous layer.
- **d) Mixed layer:** Not a defined tear film layer.

Clinical Application: Address underlying vitamin A deficiency and provide lubricating eye drops containing mucinomimetics.

Clinical Pearls for Correct Answers:

26. **Congenital Nasolacrimal Duct Obstruction Treatment:** "First-line treatment for congenital nasolacrimal duct obstruction is lacrimal sac massage combined with topical antibiotics."
27. **Posterior Blepharitis and Tear Film:** "Posterior blepharitis affects the lipid layer of the tear film due to meibomian gland dysfunction."
28. **Trachoma Indicators:** "Follicles on the upper tarsal conjunctiva in a patient with chronic conjunctivitis suggest trachoma."
29. **Staphylococcus in Blepharitis:** "Staphylococcus aureus is the most common organism causing anterior blepharitis."
30. **Ocular Hypertension:** "Elevated intraocular pressure with normal optic disc and visual fields indicates ocular hypertension."

Question 26

Question: A 4-month-old baby is brought by the mother complaining of watering since birth. You diagnose the baby with congenital nasolacrimal duct obstruction. What is the first line of treatment?

Answer Choices: a) Dacryocystorhinostomy (DCR)
b) DCR with intubation
c) Intubation without DCR
d) Lacrimal massage with antibiotics
e) Probing

Correct Answer:
d) **Lacrimal massage with antibiotics**

Explanation: The initial management of congenital nasolacrimal duct obstruction involves lacrimal sac (Crigler) massage to help open the obstructed duct, combined with topical antibiotics if there's associated infection.

Why Other Options Are Incorrect:

- **a) DCR:** Surgical intervention is not first-line in infants.
- **b) DCR with intubation:** More invasive, reserved for refractory cases.
- **c) Intubation without DCR:** Usually considered after probing fails.
- **e) Probing:** Typically performed if symptoms persist beyond 6-12 months.

Clinical Application: Educate parents on proper massage technique. If obstruction persists beyond 6-12 months, consider probing under anesthesia.

Question 27

Question: A 25-year-old female complains of irritation, redness, and foreign body sensation. Vision is 6/6 in both eyes; posterior blepharitis is noted. Which layer of the tear film is mostly affected in this condition?

Answer Choices: a) Lipid layer
b) Mucin layer
c) Middle layer
d) All layers
e) No layer is affected

Correct Answer:
a) **Lipid layer**

Explanation: Posterior blepharitis involves dysfunction of the meibomian glands, which produce the lipid layer of the tear film, leading to tear film instability and evaporation.

Why Other Options Are Incorrect:

- **b) Mucin layer:** Affected in conditions affecting goblet cells.
- **c) Middle layer:** Refers to the aqueous layer; primarily produced by lacrimal glands.
- **d) All layers:** Not all layers are affected in posterior blepharitis.
- **e) No layer is affected:** Incorrect, the lipid layer is compromised.

Clinical Application: Treatment includes warm compresses, eyelid hygiene, and possibly medications to improve meibomian gland function.

Question 28

Question: A 25-year-old female has irritation, redness, and mucopurulent discharge for 2-3 months. She has been treated elsewhere without relief. Vision is 6/6 in both eyes. On upper lid eversion, many follicles are seen on the conjunctiva. What is the most probable diagnosis?

Answer Choices: a) Allergic conjunctivitis
b) Anterior blepharitis
c) Trachoma
d) Vernal catarrh
e) Viral keratitis

Correct Answer:
c) **Trachoma**

Explanation: Chronic conjunctivitis with follicles on the upper tarsal conjunctiva suggests trachoma, caused by Chlamydia trachomatis.

Why Other Options Are Incorrect:

- **a) Allergic conjunctivitis:** Usually presents with itching and papillae.
- **b) Anterior blepharitis:** Involves eyelid margins.
- **d) Vernal catarrh:** Affects children and young adults, often with papillae.
- **e) Viral keratitis:** Involves corneal lesions.

Clinical Application: Initiate antibiotic therapy with azithromycin and implement community hygiene measures to prevent spread.

Question 29

Question: A 25-year-old male complains of irritation, redness, and foreign body sensation. Vision is 6/6 in both eyes; anterior blepharitis is noted. What is the common organism for this problem?

Answer Choices: a) Aspergillus
b) Gonococcus
c) Haemophilus
d) Staphylococcus
e) Streptococcus

Correct Answer:
d) **Staphylococcus**

Explanation: Staphylococcus aureus is the most common causative agent of anterior blepharitis, leading to inflammation of the eyelid margins.

Why Other Options Are Incorrect:

- **a) Aspergillus:** A fungus, less common in blepharitis.
- **b) Gonococcus:** Causes hyperacute conjunctivitis.
- **c) Haemophilus:** Less common in blepharitis.
- **e) Streptococcus:** Less commonly implicated.

Clinical Application: Manage with eyelid hygiene, warm compresses, and possibly topical antibiotics targeting Staphylococcus.

Question 30

Question: Amjad, a 60-year-old man, visits an eye clinic for a routine checkup. He has no significant medical history. His intraocular pressure (IOP) is found to be 28 mm Hg in both eyes with open angles on gonioscopy. The rest of the eye exam and investigations are normal. What is the most likely diagnosis?

Answer Choices: a) Open-angle glaucoma
b) Normal-tension glaucoma
c) Angle-closure glaucoma
d) Ocular hypertension
e) Lens-induced glaucoma

Correct Answer:
d) **Ocular hypertension**

Explanation: Elevated IOP without optic nerve damage or visual field loss is termed ocular hypertension.

Why Other Options Are Incorrect:

- **a) Open-angle glaucoma:** Requires optic nerve damage or visual field defects.
- **b) Normal-tension glaucoma:** Normal IOP with optic nerve damage.
- **c) Angle-closure glaucoma:** Presents with closed angles on gonioscopy.
- **e) Lens-induced glaucoma:** Associated with lens pathology causing IOP rise.

Clinical Application: Monitor closely for glaucoma development; consider initiating treatment if risk factors are present.

Question 31

Question: Sara, a 45-year-old woman, comes to the emergency room complaining of severe eye pain, headache, and blurred vision in her right eye. Her right eye appears red, the cornea is hazy, and the pupil is dilated. What type of glaucoma might she be experiencing?

Answer Choices: a) Open-angle glaucoma
b) Normal-tension glaucoma
c) Angle-closure glaucoma
d) Secondary glaucoma
e) Ocular hypertension

Correct Answer:
c) **Angle-closure glaucoma**

Explanation: Acute angle-closure glaucoma presents with sudden onset of severe eye pain, redness, blurred vision, hazy cornea, and mid-dilated pupil.

Why Other Options Are Incorrect:

- **a) Open-angle glaucoma:** Typically painless and asymptomatic initially.
- **b) Normal-tension glaucoma:** Normal IOP with optic nerve damage.
- **d) Secondary glaucoma:** Due to other ocular conditions; symptoms vary.
- **e) Ocular hypertension:** Elevated IOP without symptoms.

Clinical Application: Requires immediate IOP-lowering measures and possible laser iridotomy to prevent optic nerve damage.

Clinical Pearl for Question 31: "Acute angle-closure glaucoma is an ophthalmic emergency characterized by sudden eye pain, redness, blurred vision, and a mid-dilated pupil; prompt treatment is essential to prevent vision loss."

Question 32

Question: A 55-year-old man with a family history of glaucoma regularly visits his eye doctor. During his last visit, increased cupping of the optic disc and visual field defects were noted, even though his IOP has consistently been within the normal range. What type of glaucoma should be considered?

Answer Choices: a) Open-angle glaucoma
b) Normal-tension glaucoma
c) Angle-closure glaucoma
d) Secondary glaucoma
e) Pseudoexfoliation glaucoma

Correct Answer:
b) **Normal-tension glaucoma**

Explanation: Normal-tension glaucoma occurs despite normal IOP readings, showing optic nerve damage and visual field loss.

Why Other Options Are Incorrect:

- **a) Open-angle glaucoma:** Typically associated with elevated IOP.
- **c) Angle-closure glaucoma:** Presents acutely with symptoms.
- **d) Secondary glaucoma:** Due to identifiable causes affecting IOP.
- **e) Pseudoexfoliation glaucoma:** Involves deposition of material, usually with elevated IOP.

Clinical Application: Treatment aims to lower IOP further and monitor for progression; assess for systemic vascular factors.

Question 33

Question: A 70-year-old woman with open-angle glaucoma has been prescribed topical latanoprost to lower her IOP. Despite regular use, her IOP remains high. What might be the next step in her treatment?

Answer Choices: a) Increase the dosage of her current medication
b) Add a different class of glaucoma medication
c) Schedule her for immediate surgery
d) Discontinue glaucoma medications and monitor closely
e) Continue the same medications

Correct Answer:
b) **Add a different class of glaucoma medication**

Explanation: If monotherapy is insufficient, adding a medication from a different class can enhance IOP reduction through a different mechanism.

Why Other Options Are Incorrect:

- **a) Increasing dosage:** Often not possible or effective with topical meds.
- **c) Surgery is considered after maximal medical therapy fails.
- **d) Discontinuing medication is inappropriate.
- **e) Continuing ineffective therapy won't improve IOP control.

Clinical Application: Consider adding a beta-blocker, alpha agonist, or carbonic anhydrase inhibitor to the regimen.

Question 34

Question: A 50-year-old man has been experiencing gradual peripheral vision loss in both eyes. His IOP is elevated, and the ophthalmologist observes characteristic changes in his optic nerve head. There is no other ocular or systemic disease. Which type of glaucoma is most likely affecting him?

Answer Choices: a) Open-angle glaucoma
b) Normal-tension glaucoma
c) Angle-closure glaucoma
d) Secondary glaucoma
e) Ocular hypertension

Correct Answer:
a) **Open-angle glaucoma**

Explanation: Primary open-angle glaucoma is characterized by elevated IOP, optic disc changes, and visual field loss without other ocular pathology.

Why Other Options Are Incorrect:

- **b) Normal-tension glaucoma:** Normal IOP levels.
- **c) Angle-closure glaucoma:** Presents acutely.
- **d) Secondary glaucoma:** Due to other ocular/systemic conditions.
- **e) Ocular hypertension:** Elevated IOP without optic nerve damage.

Clinical Application: Initiate IOP-lowering therapy and monitor for disease progression.

Question 35

Question: A 55-year-old male with diabetes for 12 years presents with decreased vision in both eyes for the last 2 years. On fundus examination, he is labeled as having proliferative diabetic retinopathy. What characterizes proliferative diabetic retinopathy?

Answer Choices: a) Microaneurysms and hard exudates
b) Hard and soft exudates
c) Neovascularization of disc and elsewhere
d) Microaneurysms, hard exudates, and soft exudates
e) Cotton wool spots

Correct Answer:
c) **Neovascularization of disc and elsewhere**

Explanation: Proliferative diabetic retinopathy is marked by neovascularization due to retinal ischemia, leading to new vessel growth on the disc and elsewhere.

Why Other Options Are Incorrect:

- **a, b, d, e):** These are features of non-proliferative diabetic retinopathy.

Clinical Application: Urgent pan-retinal photocoagulation (laser therapy) is needed to regress neovascularization and prevent complications like vitreous hemorrhage.

Clinical Pearl for Question 35: "In proliferative diabetic retinopathy, look for neovascularization on the optic disc or retina, indicating severe ischemia requiring prompt laser treatment."

Question 36

Question: A 5-year-old girl complains of eye strain and inward deviation of her eyes when reading books. She is diagnosed with accommodative esotropia. What is the initial treatment option?

Answer Choices: a) Surgery
b) Refractive correction with glasses
c) Patching
d) Observation
e) No treatment needed

Correct Answer:
b) **Refractive correction with glasses**

Explanation: Accommodative esotropia is often due to uncorrected hyperopia; prescribing appropriate glasses can correct the alignment by reducing accommodative effort.

Why Other Options Are Incorrect:

- **a) Surgery:** Considered if glasses are ineffective.
- **c) Patching:** Used for amblyopia, not initial esotropia management.
- **d) Observation:** Delays treatment, risking amblyopia.
- **e) No treatment:** Inappropriate.

Clinical Application: Early optical correction can prevent amblyopia and restore binocular vision.

Question 37

Question: A 55-year-old male diabetic patient presents with decreased vision in both eyes for 2 years. Fundus examination shows signs of proliferative diabetic retinopathy. What characterizes this condition?

Answer Choices: a) Microaneurysms and hard exudates
b) Hard and soft exudates
c) Neovascularization at disc and elsewhere
d) Microaneurysms, hard exudates, and soft exudates
e) Cotton wool spots

Correct Answer:
c) **Neovascularization at disc and elsewhere**

Explanation: Repetition of question 35; the key feature is neovascularization indicating proliferative disease.

Clinical Application: Same as previous—urgent laser therapy is required.

Question 38

Question: An 8-year-old girl complains of eye strain and inward deviation of her eyes on reading books. She is diagnosed with accommodative esotropia. What is the initial treatment option?

Answer Choices: a) Surgery
b) Refractive correction with glasses
c) Patching
d) Observation
e) No treatment needed

Correct Answer:
b) **Refractive correction with glasses**

Explanation: Again, accommodative esotropia is initially managed with appropriate refractive correction.

Clinical Application: Correcting hyperopia reduces accommodative effort, improving ocular alignment.

Note: Questions 36 and 38 are essentially the same, emphasizing the importance of refractive correction in accommodative esotropia.

Clinical Pearl for Accommodative Esotropia: "In children with inward eye deviation when focusing on near objects, prescribe hyperopic glasses to reduce accommodative convergence."

Question 39

Question: A 32-year-old patient complains of sudden decreased vision in the left eye since one day. On examination, his vision is 6/6 in the right eye and 6/60 in the left eye with a relative afferent pupillary defect (RAPD). Fundoscopy shows normal fundus in the right eye and optic disc swelling in the left eye. What is the most probable diagnosis?

Answer Choices: a) Glaucomatous optic neuropathy
b) Optic atrophy
c) Optic neuritis
d) Papilledema
e) Anterior ischemic optic neuropathy

Correct Answer:
c) **Optic neuritis**

Explanation: Sudden vision loss with optic disc swelling and RAPD in a young adult suggests optic neuritis.

Why Other Options Are Incorrect:

- **a) Glaucoma:** Usually bilateral and chronic.
- **b) Optic atrophy:** Presents with pale disc, not swelling.
- **d) Papilledema:** Bilateral disc swelling without significant vision loss initially.

- **e) Anterior ischemic optic neuropathy:** Occurs in older patients.

Clinical Application: Consider demyelinating diseases like multiple sclerosis; initiate appropriate therapy and neurological evaluation.

Question 40

Question: A 55-year-old woman with hypertension and diabetes presents with sudden decreased vision in her right eye for 2 days. Vision is counting fingers close to the eye with RAPD in the right eye and 6/6 in the left eye. Fundoscopy reveals hemorrhages in all four quadrants with disc swelling in the right eye. Left fundus is normal. What is your diagnosis?

Answer Choices: a) Diabetic retinopathy
b) Central retinal artery occlusion
c) Central retinal vein occlusion
d) Branch retinal artery occlusion
e) Hypertensive retinopathy

Correct Answer:
c) **Central retinal vein occlusion**

Explanation: CRVO presents with sudden painless vision loss, extensive retinal hemorrhages in all quadrants (blood and thunder appearance), and disc swelling.

Why Other Options Are Incorrect:

- **a) Diabetic retinopathy:** Changes are usually bilateral and chronic.
- **b) Central retinal artery occlusion:** Presents with pale retina and cherry red spot.
- **d) Branch occlusion:** Involves only a sector.
- **e) Hypertensive retinopathy:** Changes are less acute.

Clinical Application: Manage underlying systemic conditions; refer for retinal specialist evaluation and possible intravitreal therapies.

Clinical Pearl for CRVO: "Sudden vision loss with widespread retinal hemorrhages and optic disc swelling suggests central retinal vein occlusion—think 'blood and thunder' fundus."

Clinical Pearls for Correct Answers:

41. **Steroids in Corneal Ulcers:** "Topical steroids are contraindicated in corneal ulcers as they can worsen infections and delay healing."
42. **Thyroid Function Tests:** "In bilateral exophthalmos with signs of hyperthyroidism, always order thyroid function tests to confirm the diagnosis."

43. **Orbital Cellulitis Signs:** "Painful proptosis with fever, eyelid swelling, and painful eye movements in a child suggests orbital cellulitis—a medical emergency."
44. **Cataract Indicators:** "Gradual painless vision loss with hazy fundus view and improvement with pinhole suggests cataract."
45. **Correcting Myopic Astigmatism:** "Myopic astigmatism is corrected using cylindrical concave lenses to neutralize the uneven curvature."
46. **Endophthalmitis Treatment:** "Prompt intravitreal antibiotics are essential in postoperative endophthalmitis to preserve vision."
47. **Diagnosing Macular Edema:** "Optical Coherence Tomography (OCT) is the gold standard for detecting and monitoring diabetic macular edema."
48. **FFA in Retinal Vein Occlusion:** "Fundus fluorescein angiography distinguishes between ischemic and non-ischemic retinal vein occlusions."
49. **B-Scan Utility:** "Use B-scan ultrasonography to assess the posterior segment when the fundus view is obscured."
50. **Third Nerve Palsy Presentation:** "A third nerve palsy presents with ptosis, 'down and out' eye, and impaired eye movements except for abduction."

Question 41

Question: A 32-year-old patient presents with decreased vision in the right eye associated with foreign body sensation and watering. Upon examination, you find a corneal ulcer. Which of the following drugs are contraindicated in a patient with a corneal ulcer?

Answer Choices: a) Antibiotics
b) Cycloplegics
c) Steroids
d) Analgesics
e) Antifungals

Correct Answer: c) **Steroids**

Explanation: Topical steroids are contraindicated in corneal ulcers because they can suppress immune responses, worsen infections, and delay epithelial healing, potentially leading to corneal perforation.

Why Other Options Are Incorrect:

- **a) Antibiotics:** Essential to treat bacterial infections causing the ulcer.
- **b) Cycloplegics:** Provide pain relief by paralyzing the ciliary muscle and reducing inflammation.
- **d) Analgesics:** Help alleviate pain and improve patient comfort.
- **e) Antifungals:** Necessary if a fungal infection is suspected.

Clinical Application: In patients with corneal ulcers, avoid prescribing steroids. Instead, initiate appropriate antimicrobial therapy based on the suspected organism and consider cycloplegics for pain management.

Question 42

Question: A 40-year-old patient presents with exophthalmos in both eyes associated with decreased vision (6/12 in both eyes). On examination, there is scleral show with restriction of extraocular movements and hand tremors. The patient is not on any medications. What single advice would you give to this patient?

Answer Choices: a) CT orbit
b) Full blood count
c) MRI orbit
d) Peripheral smear
e) Thyroid function tests

Correct Answer: e) **Thyroid function tests**

Explanation: The patient exhibits signs of thyroid eye disease (Graves' ophthalmopathy), including bilateral exophthalmos, restricted eye movements, and systemic signs like tremors. Ordering thyroid function tests will help confirm hyperthyroidism.

Why Other Options Are Incorrect:

- **a) CT orbit:** Useful but not the first step; diagnosis is clinical and biochemical.
- **b) Full blood count:** Nonspecific; won't aid in immediate diagnosis.
- **c) MRI orbit:** Detailed imaging but not necessary initially.
- **d) Peripheral smear:** Not relevant in this context.

Clinical Application: Advise the patient to get thyroid function tests to confirm hyperthyroidism and refer to an endocrinologist. Early management can prevent progression of ophthalmic symptoms.

Question 43

Question: A 14-year-old boy presents with swollen eyelids of the left eye for the last 5 days. On examination, there is left eye proptosis with conjunctival congestion, the area is hot on palpation, the boy is febrile, and there is pain on extraocular movements. What is your diagnosis?

Answer Choices: a) Idiopathic orbital inflammatory disease
b) Optic nerve glioma
c) Orbital cellulitis
d) Preseptal cellulitis
e) Thyroid eye disease

Correct Answer: c) **Orbital cellulitis**

Explanation: Orbital cellulitis is characterized by painful proptosis, eyelid swelling, conjunctival congestion, fever, and pain with eye movements. It often follows sinus infections in children.

Why Other Options Are Incorrect:

- **a) Idiopathic orbital inflammation:** Lacks fever; less common in children.
- **b) Optic nerve glioma:** Presents with painless proptosis and vision loss.
- **d) Preseptal cellulitis:** Involves eyelid swelling without proptosis or pain on eye movement.
- **e) Thyroid eye disease:** Uncommon in children; usually bilateral and painless.

Clinical Application: Orbital cellulitis is a medical emergency requiring hospitalization, intravenous antibiotics, and possibly surgical drainage to prevent vision loss and intracranial complications.

Question 44

Question: A 56-year-old man presents with gradually progressive decrease in vision in the right eye over the last 3 months. The vision in the right eye is 6/60, improving to 6/18 with pinhole, and 6/6 in the left eye. Fundus examination is hazy but seems normal. What is the most probable diagnosis?

Answer Choices: a) Age-related macular degeneration
b) Corneal opacity
c) Cataract
d) Diabetic retinopathy
e) Glaucoma

Correct Answer: c) **Cataract**

Explanation: Improvement of vision with pinhole suggests a refractive error or media opacity. A hazy fundus view indicates lens opacity obstructing the view, consistent with cataract.

Why Other Options Are Incorrect:

- **a) Age-related macular degeneration:** Typically affects central vision; fundus view would be clear.
- **b) Corneal opacity:** Would not show hazy fundus; corneal findings would be evident.
- **d) Diabetic retinopathy:** Fundus changes would be present; no mention of diabetes.
- **e) Glaucoma:** Early glaucoma does not affect visual acuity significantly; fundus view is clear.

Clinical Application: Schedule the patient for cataract extraction to restore vision. Preoperative evaluation is necessary to rule out other ocular pathologies.

Question 45

Question: A 23-year-old female complains of decreased vision in both eyes. On examination, she is found to have myopic astigmatism. Which of the following lenses are used for correction of her myopic astigmatism?

Answer Choices: a) Spherical convex lenses
b) Cylindrical convex lenses
c) Spherical concave lenses
d) Cylindrical concave lenses
e) Plano prisms

Correct Answer: d) **Cylindrical concave lenses**

Explanation: Myopic astigmatism is corrected with concave (minus) cylindrical lenses, which neutralize the excess curvature in the meridian with increased power.

Why Other Options Are Incorrect:

- **a) Spherical convex lenses:** Used for hyperopia.
- **b) Cylindrical convex lenses:** Correct hyperopic astigmatism.
- **c) Spherical concave lenses:** Correct simple myopia, not astigmatism.
- **e) Plano prisms:** Used for binocular vision disorders, not refractive errors.

Clinical Application: Prescribe appropriate cylindrical concave lenses after precise refraction to correct her vision and improve visual comfort.

Question 46

Question: A 66-year-old patient underwent phacoemulsification for cataract extraction 3 days ago and now presents with severe pain, redness, and decreased vision in the operated eye. There is hypopyon in the anterior chamber and no view of the fundus. How will you treat this patient?

Answer Choices: a) Observation
b) Topical antibiotics
c) Intravitreal antibiotics
d) Systemic antibiotics
e) Enucleation

Correct Answer: c) **Intravitreal antibiotics**

Explanation: The patient likely has acute postoperative endophthalmitis, which requires prompt intravitreal antibiotic injections to eliminate intraocular infection.

Why Other Options Are Incorrect:

- **a) Observation:** Delays critical treatment.
- **b) Topical antibiotics:** Insufficient for intraocular infection.

- **d) Systemic antibiotics:** Poor intraocular penetration; adjunctive at best.
- **e) Enucleation:** Last resort when the eye is unsalvageable.

Clinical Application: Immediate intravitreal antibiotics are essential. Vitrectomy may be considered depending on severity. Early intervention can save the eye and vision.

Question 47

Question: A 45-year-old patient with a 10-year history of diabetes presents with decreased vision in both eyes. You suspect diabetic macular edema. Which investigation modality can better diagnose the macular edema?

Answer Choices: a) B-scan ultrasonography
b) Fundus autofluorescence
c) Fundus fluorescein angiography
d) Optical coherence tomography (OCT)
e) Visual fields

Correct Answer: d) **Optical coherence tomography (OCT)**

Explanation: OCT provides high-resolution cross-sectional images of the retina, allowing for detailed assessment of macular edema's presence and extent.

Why Other Options Are Incorrect:

- **a) B-scan:** Useful for posterior segment evaluation when media is opaque.
- **b) Fundus autofluorescence:** Assesses RPE health, not edema.
- **c) Fundus fluorescein angiography:** Shows leakage but less precise for edema thickness.
- **e) Visual fields:** Assess functional vision, not structural changes.

Clinical Application: Use OCT to confirm diabetic macular edema and monitor response to treatments like anti-VEGF injections or laser therapy.

Question 48

Question: A 52-year-old man presents with decreased vision in his left eye over the last 4 months. He is hypertensive. On examination, you diagnose central retinal vein occlusion (CRVO) but are unsure if it's ischemic or non-ischemic. Which investigation will you advise to determine the type of CRVO?

Answer Choices: a) B-scan ultrasonography
b) Fundus autofluorescence
c) Fundus fluorescein angiography (FFA)
d) Optical coherence tomography (OCT)
e) Optical coherence tomography angiography

Correct Answer: c) **Fundus fluorescein angiography (FFA)**

Explanation: FFA allows visualization of retinal circulation, capillary non-perfusion areas, and extent of ischemia, helping differentiate between ischemic and non-ischemic CRVO.

Why Other Options Are Incorrect:

- **a) B-scan:** Not helpful for vascular assessment.
- **b) Fundus autofluorescence:** Does not assess blood flow.
- **d) OCT:** Shows structural changes but not perfusion.
- **e) OCT angiography:** Emerging tool but not as comprehensive as FFA in this context.

Clinical Application: Perform FFA to guide management, as ischemic CRVO has a worse prognosis and may require more aggressive treatment.

Question 49

Question: A 45-year-old woman presents with decreased vision in her left eye after ocular trauma. Examination reveals a mature cataract with no fundus view. How will you check the status of the retina?

Answer Choices: a) B-scan ultrasonography
b) Fundus autofluorescence
c) Fundus fluorescein angiography
d) Optical coherence tomography
e) Visual fields

Correct Answer: a) **B-scan ultrasonography**

Explanation: B-scan ultrasonography can visualize the posterior segment despite opaque media like a mature cataract, allowing assessment of the retina for detachments or intraocular foreign bodies.

Why Other Options Are Incorrect:

- **b) Fundus autofluorescence:** Requires clear media.
- **c) Fundus fluorescein angiography:** Cannot be performed without fundus view.
- **d) OCT:** Limited penetration; cannot image through dense cataract.
- **e) Visual fields:** Not possible if vision is severely reduced.

Clinical Application: Order a B-scan to rule out retinal detachment or vitreous hemorrhage before planning cataract surgery.

Question 50

Question: A 55-year-old hypertensive patient presents with diplopia. On examination, the patient has right ptosis with deficient adduction, elevation, and depression of the right eye. What is your diagnosis?

Answer Choices: a) 2nd nerve palsy
b) 3rd nerve palsy
c) 4th nerve palsy
d) 6th nerve palsy
e) 7th nerve palsy

Correct Answer: b) **3rd nerve palsy**

Explanation: Third cranial nerve (oculomotor nerve) palsy results in ptosis due to levator palpebrae superioris paralysis and ophthalmoplegia affecting all eye movements except abduction (lateral rectus) and intorsion (superior oblique).

Why Other Options Are Incorrect:

- **a) 2nd nerve (optic nerve):** Affects vision, not eye movement.
- **c) 4th nerve palsy:** Affects superior oblique muscle; vertical diplopia.
- **d) 6th nerve palsy:** Affects lateral rectus muscle; impaired abduction.
- **e) 7th nerve palsy:** Facial nerve; affects facial muscles, not eye movement.

Clinical Application: Investigate for possible microvascular ischemia due to hypertension and diabetes. Neuroimaging may be necessary to rule out compressive lesions.

Clinical Pearls for Correct Answers:

51. **Scleritis Identification:** "In scleritis, deep scleral vessels do not blanch with phenylephrine, and it often presents with severe pain associated with systemic diseases like rheumatoid arthritis."
52. **Bitemporal Hemianopia Localization:** "Bitemporal hemianopia indicates a lesion at the optic chiasm, commonly due to pituitary tumors."
53. **Basal Cell Carcinoma Features:** "A shiny, firm, pearly nodule with surface telangiectasia on the eyelid suggests basal cell carcinoma."
54. **Chalazion Characteristics:** "A painless, firm nodule on the eyelid away from the margin is typically a chalazion, resulting from meibomian gland blockage."
55. **Astigmatism Correction:** "Astigmatism is corrected using cylindrical lenses to compensate for the uneven curvature of the cornea."
56. **Vernal Keratoconjunctivitis Clues:** "Cobblestone papillae on the palpebral conjunctiva in children with seasonal itching point to vernal keratoconjunctivitis."
57. **Retinoblastoma Signs:** "Leukocoria (white pupillary reflex) in a child is a red flag for retinoblastoma."

58. **Simple Congenital Ptosis Indicators:** "Drooping of one eyelid since birth with absent lid crease suggests simple congenital ptosis."
59. **Retinitis Pigmentosa Features:** "Night blindness with peripheral visual field loss, bone spicule pigmentation, and waxy pallor of the optic disc indicate retinitis pigmentosa."
60. **Retinal Detachment Risk in Myopia:** "High myopia with lattice degeneration predisposes to retinal detachment, a serious complication."

Question 51

Question: A 45-year-old female patient with rheumatoid arthritis presents with right ocular pain for the last 5 days, referred to the temporal region. On examination, there is localized swelling in the temporal interpalpebral region with vascular congestion. On instillation of phenylephrine drops, the vascular congestion does not blanch. What is your diagnosis?

Answer Choices: a) Conjunctivitis
b) Episcleritis
c) Keratitis
d) Scleritis
e) Uveitis

Correct Answer:
d) **Scleritis**

Explanation: Scleritis is inflammation of the scleral layer of the eye, often associated with severe pain and systemic diseases like rheumatoid arthritis. The deep scleral vessels do not blanch with phenylephrine drops because they are not responsive to vasoconstrictors.

Why Other Options Are Incorrect:

- **a) Conjunctivitis:** Inflammation of the conjunctiva; vessels blanch with phenylephrine.
- **b) Episcleritis:** A milder inflammation where vessels typically blanch with phenylephrine.
- **c) Keratitis:** Inflammation of the cornea; does not present with external vascular congestion.
- **e) Uveitis:** Inflammation of the uveal tract; presents with photophobia and intraocular pain.

Clinical Application: Recognizing scleritis is crucial due to its association with systemic autoimmune conditions. Prompt referral for systemic evaluation and initiation of systemic steroids or immunosuppressants may be necessary to prevent complications like scleral thinning or perforation.

Question 52

Question: A 40-year-old female presents with a history of headache and visual field defects. On examination, bitemporal hemianopia is noted, which is a characteristic field defect of which lesion site?

Answer Choices: a) Optic nerve
b) Optic chiasm
c) Optic tract
d) Optic radiation
e) Occipital cortex

Correct Answer:
b) **Optic chiasm**

Explanation: Bitemporal hemianopia results from a lesion at the optic chiasm where the nasal retinal fibers (which receive temporal visual fields) cross. Common causes include pituitary adenomas compressing the chiasm.

Why Other Options Are Incorrect:

- **a) Optic nerve:** Lesions cause monocular vision loss.
- **c) Optic tract:** Causes contralateral homonymous hemianopia.
- **d) Optic radiation:** Lesions lead to quadrantanopias or homonymous hemianopia.
- **e) Occipital cortex:** Lesions result in homonymous hemianopia with macular sparing.

Clinical Application: Identify bitemporal hemianopia as a sign of chiasmal compression, often requiring neuroimaging to detect pituitary tumors or other sellar masses. Early diagnosis can lead to surgical intervention, preserving vision and addressing endocrine issues.

Question 53

Question: A 60-year-old male presents with a lesion on the right lower eyelid for the last 2 years. On examination, the lesion is a shiny, firm, pearly nodule with small overlying dilated blood vessels. What is the most probable diagnosis?

Answer Choices: a) Basal cell carcinoma
b) Squamous cell carcinoma
c) Keratoacanthoma
d) Sebaceous gland carcinoma
e) Melanoma

Correct Answer:
a) **Basal cell carcinoma**

Explanation: Basal cell carcinoma (BCC) often presents as a pearly nodule with telangiectasia (dilated blood vessels). It is the most common eyelid malignancy, especially in sun-exposed areas.

Why Other Options Are Incorrect:

- **b) Squamous cell carcinoma:** More likely ulcerated, crusted lesion.
- **c) Keratoacanthoma:** Rapid growth and central keratin-filled crater.

- **d) Sebaceous gland carcinoma:** Often on upper eyelid; can mimic chalazion.
- **e) Melanoma:** Pigmented lesion with irregular borders.

Clinical Application: BCC requires complete surgical excision with margin control to prevent recurrence and local tissue invasion. Early recognition and treatment are essential for optimal outcomes.

Question 54

Question: A 25-year-old male comes to the eye clinic with a 3-month history of painless swelling on his upper eyelid. Examination reveals a smooth, rounded nodule slightly away from the lid margin. What is the most probable diagnosis?

Answer Choices: a) Basal cell carcinoma
b) Chalazion
c) Internal hordeolum
d) Stye
e) Dermoid cyst

Correct Answer:
b) **Chalazion**

Explanation: A chalazion is a chronic lipogranulomatous inflammation of a meibomian gland, presenting as a painless, firm nodule away from the eyelid margin.

Why Other Options Are Incorrect:

- **a) Basal cell carcinoma:** Typically presents as a pearly lesion with telangiectasia.
- **c) Internal hordeolum:** Acute, painful infection of meibomian gland.
- **d) Stye (external hordeolum):** Acute infection of glands of Zeis or Moll, presenting near the lid margin.
- **e) Dermoid cyst:** Congenital lesion often located at the outer canthus.

Clinical Application: Initial treatment includes warm compresses and massage. Persistent chalazia may require incision and curettage or intralesional steroid injection.

Question 55

Question: A 16-year-old boy comes to the clinic for blurring of vision. On examination, he has a visual acuity of 6/18 in both eyes. His keratometry readings are K1: 41.50 D and K2: 44.50 D, indicating astigmatism. What type of lenses will you use to correct this condition?

Answer Choices: a) Concave lenses
b) Convex lenses
c) Cylindrical lenses

d) Overcorrected lenses
e) Prismatic lenses

Correct Answer:
c) **Cylindrical lenses**

Explanation: Astigmatism is corrected with cylindrical lenses, which have different powers in different meridians to compensate for the uneven curvature of the cornea.

Why Other Options Are Incorrect:

- **a) Concave lenses:** Correct myopia, not astigmatism.
- **b) Convex lenses:** Correct hyperopia.
- **d) Overcorrected lenses:** Not a standard term in refraction.
- **e) Prismatic lenses:** Used to correct binocular vision anomalies.

Clinical Application: Provide accurate refraction and prescribe cylindrical lenses to correct astigmatism, improving visual acuity and reducing symptoms like blurred vision and eye strain.

Question 56

Question: A 12-year-old child presents with itching, irritation, and watering of the eyes. Examination shows conjunctival congestion with cobblestone appearance of the palpebral conjunctiva. His parents report that he has the same condition every year in the summer season. What is your diagnosis?

Answer Choices: a) Acute allergic reaction
b) Adenoviral conjunctivitis
c) Vernal keratoconjunctivitis
d) Recurrent membranous conjunctivitis
e) Bacterial conjunctivitis

Correct Answer:
c) **Vernal keratoconjunctivitis**

Explanation: Vernal keratoconjunctivitis (VKC) is a recurrent, bilateral inflammation occurring in young males during warm seasons. The cobblestone papillae on the tarsal conjunctiva are characteristic.

Why Other Options Are Incorrect:

- **a) Acute allergic reaction:** Less severe, lacks cobblestone papillae.
- **b) Adenoviral conjunctivitis:** May have follicles and systemic symptoms.
- **d) Recurrent membranous conjunctivitis:** Rare; involves membrane formation.
- **e) Bacterial conjunctivitis:** Purulent discharge; lacks cobblestone papillae.

Clinical Application: Management includes avoiding allergens, using antihistamines, mast cell stabilizers, and topical steroids for severe cases. Monitor for complications like shield ulcers.

Question 57

Question: A 3-year-old child is brought by his parents with a white pupillary reflex (leukocoria) in the right eye for the last 2 months. On examination of the fundus, there is a creamy white lesion with calcification on posterior pole. What is the most probable diagnosis?

Answer Choices: a) Retinitis pigmentosa
b) Retinoblastoma
c) Retinal detachment
d) Choroidal melanoma
e) Congenital cataract

Correct Answer:
b) **Retinoblastoma**

Explanation: Retinoblastoma is the most common intraocular malignancy in children. It presents with leukocoria and can show calcification on imaging or examination.

Why Other Options Are Incorrect:

- **a) Retinitis pigmentosa:** Presents with night blindness and peripheral vision loss.
- **c) Retinal detachment:** May cause leukocoria but less common in this age without trauma.
- **d) Choroidal melanoma:** Rare in children.
- **e) Congenital cataract:** Can cause leukocoria but lacks calcification and creamy white fundus lesion.

Clinical Application: Urgent referral to an ocular oncologist is necessary. Treatment options include enucleation, chemotherapy, radiotherapy, or focal therapies depending on the stage.

Question 58

Question: A 3 months old baby is brought by his mother with drooping of the right upper eyelid since birth and absence of eyelid crease. The rest of ocular examination is unremarkable. What is the most probable diagnosis?

Answer Choices: a) Congenital entropion
b) Simple congenital ptosis
c) Horner's syndrome
d) Congenital third nerve palsy
e) Dermatochalasis

Correct Answer:
b) **Simple congenital ptosis**

Explanation: Simple congenital ptosis is due to developmental dystrophy of the levator palpebrae superioris muscle, presenting with drooping eyelid and absent lid crease.

Why Other Options Are Incorrect:

- **a) Congenital entropion:** Inward turning of the eyelid margin.
- **c) Horner's syndrome:** Ptosis with miosis and anhidrosis.
- **d) Congenital third nerve palsy:** Ptosis with ophthalmoplegia and possibly dilated pupil.
- **e) Dermatochalasis:** Redundant eyelid skin in older individuals.

Clinical Application: Early surgical correction may be required to prevent amblyopia and ensure proper visual development.

Question 59

Question: A 9-year-old boy is presented by his parents with decreased night vision. On fundus examination, there is waxy disc pallor, arteriolar attenuation, and bone spicule pigmentation involving the retinal periphery. What is your diagnosis?

Answer Choices: a) Retinoblastoma
b) Congenital glaucoma
c) Retinopathy of prematurity
d) Retinitis pigmentosa
e) Retinal detachment

Correct Answer:
d) **Retinitis pigmentosa**

Explanation: Retinitis pigmentosa (RP) is a group of inherited disorders characterized by progressive peripheral vision loss and night blindness, with typical fundus findings of bone spicule pigmentation, attenuated arterioles, and waxy pallor of the optic disc.

Why Other Options Are Incorrect:

- **a) Retinoblastoma:** Presents with leukocoria.
- **b) Congenital glaucoma:** Presents with enlarged corneas and photophobia.
- **c) Retinopathy of prematurity:** Affects preterm infants; peripheral retinal neovascularization.
- **e) Retinal detachment:** May cause vision loss but different fundus findings.

Clinical Application: No cure exists, but low-vision aids and genetic counseling are important. Vitamin A supplementation may slow progression in some cases.

Question 60

Question: A 30-year-old boxer comes to the eye clinic with complaints of decreased vision in both eyes. On examination, anterior segment is normal; fundus examination shows myopic changes with lattice degeneration in both eyes. What is the most serious complication that occurs in myopic patients?

Answer Choices: a) Cataract
b) Retinal detachment
c) Glaucoma
d) Vitreous hemorrhage
e) Hypertropia

Correct Answer:
b) **Retinal detachment**

Explanation: High myopia and lattice degeneration increase the risk of retinal tears leading to retinal detachment, which is a serious sight-threatening condition.

Why Other Options Are Incorrect:

- **a) Cataract:** Can occur but less urgent than retinal detachment.
- **c) Glaucoma:** Myopia is a risk factor but less immediate.
- **d) Vitreous hemorrhage:** Possible but often secondary to retinal tears.
- **e) Hypertropia:** Misalignment of eyes vertically; unrelated.

Clinical Application: Educate patients on warning signs of retinal detachment (flashes, floaters, shadow over vision). Prophylactic laser therapy may be considered for lattice degeneration.

Clinical Pearls for Correct Answers:

61. **Basal Cell Carcinoma Common Site:** "Basal cell carcinoma commonly occurs on the lower eyelid and medial canthus due to increased sun exposure."
62. **Chalazion and Sebaceous Gland Carcinoma:** "Recurrent chalazion in elderly patients may indicate sebaceous gland carcinoma; biopsy is essential."
63. **Ulcerative Blepharitis Signs:** "Ulcerative blepharitis presents with redness, scaling at the lid margins, loss of eyelashes, and ulceration."
64. **Chalazion Pathology:** "Chalazion is a lipogranulomatous inflammation due to blockage of meibomian glands, leading to granuloma formation."
65. **Radiation Complication in Medial Canthal Area:** "Radiation near the medial canthus can lead to nasolacrimal duct stenosis, causing epiphora."

66. **Cataract in Galactosemia:** "Oil drop cataract occurs in infants with galactosemia due to galactitol accumulation in the lens."
67. **Acute Postoperative Endophthalmitis Organisms:** "Staphylococcus epidermidis (gram-positive) is the most common organism causing acute postoperative endophthalmitis."
68. **Ectopia Lentis in Marfan Syndrome:** "Marfan syndrome is associated with superior temporal subluxation of the lens (ectopia lentis)."
69. **Blowout Fracture Site:** "Orbital floor (maxillary bone) is commonly fractured in blowout fractures, leading to enophthalmos and infraorbital nerve anesthesia."
70. **Measuring Macular Edema:** "Optical coherence tomography (OCT) is the preferred method to quantify diabetic macular edema."

Question 61

Question: A 55-year-old male presented with a lesion on the right lower eyelid for the last 2 years. He is a farmer by occupation. On examination, the lesion is a shiny, firm, pearly nodule with small overlying dilated blood vessels. It most likely arises from which area?

Answer Choices: a) Lateral lower eyelid
b) Medial canthus
c) Upper eyelid
d) Lateral canthus
e) Eyebrow

Correct Answer:
b) **Medial canthus**

Explanation: Basal cell carcinoma (BCC) commonly occurs on sun-exposed areas of the skin, including the lower eyelid and medial canthus. Farmers have increased sun exposure, increasing the risk. The description matches BCC, which often arises at the medial canthus.

Why Other Options Are Incorrect:

- **a) Lateral lower eyelid:** Less common site for BCC.
- **c) Upper eyelid:** BCC is less frequent here compared to lower eyelid.
- **d) Lateral canthus:** Less commonly affected.
- **e) Eyebrow:** Not a common site for BCC.

Clinical Application: Early recognition of lesions at high-risk sites like the medial canthus is important due to potential invasion into adjacent structures, including the orbit and sinuses. Surgical excision with margin control is necessary.

Question 62

Question: A 20-year-old young boy came to the OPD with recurrent chalazion. Recurrent chalazion can turn into which of the following conditions?

Answer Choices: a) Basal cell carcinoma
b) Kaposi sarcoma
c) Malignant melanoma
d) Sebaceous gland carcinoma
e) Squamous cell carcinoma

Correct Answer:
d) **Sebaceous gland carcinoma**

Explanation: Sebaceous gland carcinoma can masquerade as recurrent chalazion, especially in elderly patients. Persistent or recurrent lesions should raise suspicion for malignancy.

Why Other Options Are Incorrect:

- **a) Basal cell carcinoma:** Does not typically present as chalazion.
- **b) Kaposi sarcoma:** Rare in the eyelid, associated with HIV/AIDS.
- **c) Malignant melanoma:** Usually pigmented lesions.
- **e) Squamous cell carcinoma:** Presents as ulcerative lesions, not chalazion.

Clinical Application: Biopsy is essential for recurrent chalazion to rule out sebaceous gland carcinoma, which is aggressive and can metastasize.

Question 63

Question: A male patient was complaining of continuous redness of both eyes, foreign body sensation, and frequent loss of lashes. On examination, the lid margins were hyperemic, and the lashes were matted with yellow crusts, which left painful ulcers on trying to move them. The most reliable diagnosis is:

Answer Choices: a) Cicatricial entropion
b) Psoriasis
c) Posterior blepharitis
d) Anterior blepharitis
e) Ulcerative blepharitis

Correct Answer:
e) **Ulcerative blepharitis**

Explanation: Ulcerative blepharitis is characterized by inflammation of the eyelid margins with crusting, ulceration, and loss of eyelashes (madarosis). The presence of yellow crusts and painful ulcers is typical.

Why Other Options Are Incorrect:

- **a) Cicatricial entropion:** Inward turning of the eyelid due to scarring.
- **b) Psoriasis:** May affect eyelids but has different skin manifestations.
- **c) Posterior blepharitis:** Involves meibomian gland dysfunction.
- **d) Anterior blepharitis:** Includes ulcerative and squamous types but the term is less specific.

Clinical Application: Treatment involves eyelid hygiene, warm compresses, and possibly antibiotic ointments. Addressing underlying bacterial infection is important.

Question 64

Question: A young patient presents with painless swelling in upper lid for 3 months. The chalazion is:

Answer Choices: a) Non-granulomatous inflammation
b) Lipogranulomatous inflammation
c) Caseating granuloma
d) Non-caseating granuloma
e) Hypersensitivity reaction

Correct Answer:
b) **Lipogranulomatous inflammation**

Explanation: A chalazion is a lipogranulomatous inflammation due to blockage of the meibomian gland leading to leakage of lipid into surrounding tissues and granuloma formation.

Why Other Options Are Incorrect:

- **a) Non-granulomatous inflammation:** Incorrect; granulomas are present.
- **c) Caseating granuloma:** Typically seen in tuberculosis.
- **d) Non-caseating granuloma:** Could be considered, but "lipogranulomatous" is more accurate.
- **e) Hypersensitivity reaction:** Not the primary mechanism.

Clinical Application: Management includes conservative measures initially; persistent lesions may require incision and curettage.

Question 65

Question: A 60-year-old male came to the OPD with a mass on the medial canthal area. On histological evaluation, it came to be squamous cell carcinoma. The tumor was resected but irradiation was also required for complete cure from the carcinoma. What is a complication of irradiation to the medial canthal area?

Answer Choices: a) Skin damage
b) Madarosis

c) Nasolacrimal duct stenosis
d) Dry eye
e) Keratopathy

Correct Answer:
c) **Nasolacrimal duct stenosis**

Explanation: Radiation therapy near the medial canthus can damage the nasolacrimal duct system, leading to fibrosis and stenosis, causing epiphora (excess tearing).

Why Other Options Are Incorrect:

- **a) Skin damage:** Possible but less specific.
- **b) Madarosis:** Loss of eyelashes; less common.
- **d) Dry eye:** More related to lacrimal gland damage.
- **e) Keratopathy:** Damage to the cornea; less likely from medial canthal radiation.

Clinical Application: Patients should be monitored for nasolacrimal duct obstruction after radiation therapy in this area; surgical intervention may be needed.

Question 66

Question: A 4-year-old child presents with cataract in both eyes and systemic illness. On examination, he has oil droplet cataract, which occurs in:

Answer Choices: a) Toxoplasmosis
b) Marfan syndrome
c) Galactosemia
d) Down's syndrome
e) Rubella infection

Correct Answer:
c) **Galactosemia**

Explanation: Oil droplet cataract is characteristic of galactosemia, a metabolic disorder where galactose accumulates due to enzyme deficiency, leading to cataract formation.

Why Other Options Are Incorrect:

- **a) Toxoplasmosis:** May cause chorioretinitis.
- **b) Marfan syndrome:** Associated with ectopia lentis.
- **d) Down's syndrome:** May have cataracts but not oil droplet type.
- **e) Rubella infection:** Can cause cataracts but typically nuclear cataracts.

Clinical Application: Early diagnosis and dietary management are crucial to prevent systemic complications and cataract progression.

Question 67

Question: A 50-year-old presents with severe pain 3 days after cataract surgery. The most common organism involved in acute postoperative endophthalmitis is:

Answer Choices: a) Gram-positive organisms
b) Gram-negative organisms
c) Aspergillus
d) Fusarium
e) Anaerobes

Correct Answer:
a) **Gram-positive organisms**

Explanation: Coagulase-negative Staphylococcus (Staph epidermidis), a gram-positive organism, is the most common cause of acute postoperative endophthalmitis.

Why Other Options Are Incorrect:

- **b) Gram-negative organisms:** Less common.
- **c) Aspergillus:** Fungal infections are rare postoperatively.
- **d) Fusarium:** Fungal; more associated with contact lens keratitis.
- **e) Anaerobes:** Less commonly implicated.

Clinical Application: Prompt intravitreal antibiotics targeting gram-positive bacteria are essential to manage endophthalmitis.

Question 68

Question: A 15-year-old boy with musculoskeletal and cardiac abnormalities presents with ectopia lentis, which occurs in:

Answer Choices: a) Marfan syndrome
b) Hypertensive patients
c) Diabetic patients
d) Myasthenia gravis
e) Down's syndrome

Correct Answer:
a) **Marfan syndrome**

Explanation: Marfan syndrome is a connective tissue disorder characterized by tall stature, arachnodactyly, cardiac abnormalities (aortic aneurysm), and ectopia lentis (dislocation of the lens).

Why Other Options Are Incorrect:

- **b) Hypertensive patients:** Not associated with ectopia lentis.
- **c) Diabetic patients:** May develop cataracts but not ectopia lentis.
- **d) Myasthenia gravis:** Neuromuscular disorder; no lens involvement.
- **e) Down's syndrome:** May have other ocular findings but not ectopia lentis.

Clinical Application: Regular ophthalmic examinations are necessary in Marfan patients to monitor for lens dislocation and associated visual disturbances.

Question 69

Question: A 25-year-old male, while playing tennis, was hit by a tennis ball on his right eye. On recovering, he complained of double vision. Examination revealed that his right eye appeared to be displaced posteriorly compared to his left eye. He complained of loss of skin sensations. Using your knowledge of anatomy, select the wall of orbit which is fractured with this trauma.

Answer Choices: a) Floor of orbit
b) Lateral wall of orbit
c) Medial wall of orbit
d) Roof of orbit
e) Orbital apex

Correct Answer:
a) **Floor of orbit**

Explanation: Blowout fractures commonly involve the orbital floor (maxillary bone). Posterior displacement (enophthalmos) and infraorbital nerve anesthesia (loss of skin sensation) are typical.

Why Other Options Are Incorrect:

- **b) Lateral wall of orbit:** Thick bone; less likely fractured.
- **c) Medial wall of orbit:** May fracture but less likely to cause these symptoms.
- **d) Roof of orbit:** Uncommon and associated with intracranial injury.
- **e) Orbital apex:** Injury here affects optic nerve and extraocular muscles.

Clinical Application: Imaging studies (CT scan) confirm the diagnosis. Surgical repair may be needed to prevent persistent diplopia and enophthalmos.

Question 70

Question: A 56-year-old diabetic patient presented with decrease in vision in both eyes from the last one year. On examination, the anterior segment was normal. Fundoscopy showed retinal hemorrhages in all 4 quadrants with diabetic macular edema. How will you measure the amount of macular edema in this patient?

Answer Choices: a) B-scan ultrasonography
b) Fundus autofluorescence
c) Fundus fluorescein angiography
d) Optical coherence tomography (OCT)
e) Pachymetry

Correct Answer:
d) **Optical coherence tomography (OCT)**

Explanation: OCT provides high-resolution cross-sectional images of the retina, allowing precise measurement of macular thickness and edema.

Why Other Options Are Incorrect:

- **a) B-scan ultrasonography:** Not useful for detailed retinal imaging.
- **b) Fundus autofluorescence:** Assesses RPE function, not edema.
- **c) Fundus fluorescein angiography:** Shows leakage but less accurate for measuring edema.
- **e) Pachymetry:** Measures corneal thickness.

Clinical Application: OCT is essential for diagnosis, monitoring, and guiding treatment decisions in diabetic macular edema, such as anti-VEGF therapy or laser treatment.

Question 71

Question: A 48-year-old diabetic patient presented with diplopia for the last 5 days. On examination, you find that the patient has left hypertropia with head tilt to the right side. On extraocular movement testing, the hypertropia increases in right gaze. What is the most probable diagnosis?

Answer Choices: a) Right inferior oblique palsy
b) Right superior oblique palsy
c) Left inferior rectus palsy
d) Left inferior oblique palsy
e) Left superior oblique palsy

Correct Answer:
e) **Left superior oblique palsy**

Explanation: In left superior oblique palsy, the affected eye (left eye) is hypertropic, and the patient tilts the head away from the side of the lesion (to the right) to minimize diplopia. Hypertropia increases on looking to the right (contralateral gaze).

Why Other Options Are Incorrect:

- **a) Right inferior oblique palsy:** Would cause right hypotropia.
- **b) Right superior oblique palsy:** Would affect the right eye.
- **c) Left inferior rectus palsy:** Causes hypotropia.
- **d) Left inferior oblique palsy:** Causes hypertropia but worsens in ipsilateral gaze.

Clinical Application: Fourth cranial nerve palsy is the most common cause of vertical diplopia. Management may involve prism glasses or surgery if not resolving.

Question 72

Question: A 65-year-old hypertensive patient is complaining of decreased vision in both eyes. You performed visual field examination on the patient and found right homonymous hemianopia, which is confirmed on perimetry as well. So, in a patient with right homonymous hemianopia, the most probable site of lesion will be:

Answer Choices: a) Left optic nerve
b) Left optic tract
c) Optic chiasma
d) Right optic tract
e) Left occipital cortex

Correct Answer:
b) **Left optic tract**

Explanation: A right homonymous hemianopia indicates loss of right visual fields in both eyes, resulting from a lesion in the left optic tract, which carries fibers from the left half of both retinas (right visual fields).

Why Other Options Are Incorrect:

- **a) Left optic nerve:** Causes monocular vision loss.
- **c) Optic chiasma:** Causes bitemporal hemianopia.
- **d) Right optic tract:** Would cause left homonymous hemianopia.
- **e) Left occipital cortex:** Also causes right homonymous hemianopia; however, macular sparing is more typical.

Clinical Application: Neurological imaging is necessary to identify lesions such as stroke, tumors, or demyelinating disease affecting the optic tract.

Question 73

Question: A 52-year-old hypertensive patient presented with sudden onset diplopia. In face, there is deficient left abduction; the rest of extraocular movements are normal. Which of the following nerves is involved in this condition?

Answer Choices: a) Left optic nerve
b) Oculomotor nerve
c) Trochlear nerve
d) Abducens nerve
e) Facial nerve

Correct Answer:
d) **Abducens nerve**

Explanation: Deficient abduction of the left eye indicates left lateral rectus muscle weakness, innervated by the sixth cranial nerve (abducens nerve).

Why Other Options Are Incorrect:

- **a) Optic nerve:** Affects vision, not eye movements.
- **b) Oculomotor nerve:** Innervates other extraocular muscles.
- **c) Trochlear nerve:** Innervates superior oblique muscle.
- **e) Facial nerve:** Controls facial expression muscles.

Clinical Application: Isolated sixth nerve palsy in adults is often due to microvascular ischemia associated with hypertension or diabetes. Control of underlying conditions and observation is standard; recovery often occurs within months.

Question 74

Question: A 42-year-old man presented with watering and redness of the right eye from the last 6 months. On examination, there was restricted extraocular movements with lid lag and scleral show. The patient was found to have proptosis. What is the best way to measure the amount of proptosis?

Answer Choices: a) B-scan ultrasonography
b) Computed Tomography (CT) scan
c) MRI orbit
d) Exophthalmometer
e) Visual fields

Correct Answer:
d) **Exophthalmometer**

Explanation: An exophthalmometer is a specialized instrument used to measure the degree of forward displacement (proptosis) of the eye.

Why Other Options Are Incorrect:

- **a) B-scan ultrasonography:** Useful for intraocular structures but not precise for proptosis measurement.
- **b) CT scan:** Can measure proptosis but is more expensive and involves radiation.
- **c) MRI orbit:** Provides detailed images but not practical for measurement.
- **e) Visual fields:** Assess peripheral vision, not proptosis.

Clinical Application: Measuring proptosis is important for diagnosis and monitoring of conditions like thyroid eye disease. Exophthalmometer readings can be tracked over time.

Question 75

Question: A 9-year-old boy is presented by his parents with decreased night vision. On fundus examination, there is pale waxy disc, arteriolar attenuation, and pigmentary bone spicules lesion involving the retinal periphery. What is your diagnosis?

Answer Choices: a) Retinoblastoma
b) Congenital cataract
c) Retinopathy of prematurity
d) Retinitis pigmentosa
e) Retinal detachment

Correct Answer:
d) **Retinitis pigmentosa**

Explanation: Retinitis pigmentosa is characterized by night blindness, peripheral visual field loss, and fundus findings of waxy pallor of the optic disc, arteriolar attenuation, and bone spicule pigmentation.

Why Other Options Are Incorrect:

- **a) Retinoblastoma:** Presents with leukocoria.
- **b) Congenital cataract:** Causes blurred vision; different fundus.
- **c) Retinopathy of prematurity:** Affects preterm infants; different findings.
- **e) Retinal detachment:** Presents with vision loss but different fundus appearance.

Clinical Application: Genetic counseling is important. Low-vision aids and possibly vitamin A therapy may be beneficial.

Question 76

Question: A mother brings her three-month-old baby with capillary hemangioma of the right upper lid. The most effective treatment for this condition is:

Answer Choices: a) Intralesional Avastin injection
b) Intralesional steroid injection
c) Cryoablation
d) Surgical excision
e) Laser therapy

Correct Answer:
b) **Intralesional steroid injection**

Explanation: Capillary hemangiomas in infants often respond well to intralesional steroid injections, which reduce lesion size by inducing involution.

Why Other Options Are Incorrect:

- **a) Intralesional Avastin (bevacizumab):** Not standard for hemangiomas.
- **c) Cryoablation:** Less commonly used; may damage surrounding tissue.
- **d) Surgical excision:** Risky due to potential bleeding and scarring.
- **e) Laser therapy:** Can be used but steroids are first-line.

Clinical Application: Early treatment prevents amblyopia from occlusion and reduces cosmetic deformity.

Question 77

Question: An ophthalmologist was giving a lecture on tear film to 3rd-year MBBS students. Regarding the tear film, which statement is true?

Answer Choices: a) Has three layers
b) The middle layer is from the meibomian glands
c) Is predominantly mucous
d) Suffers evaporative loss of 50%
e) Becomes aqueous when evaporation occurs

Correct Answer:
a) **Has three layers**

Explanation: The tear film consists of three layers: an outer lipid layer (from meibomian glands), a middle aqueous layer (from lacrimal glands), and an inner mucin layer (from goblet cells).

Why Other Options Are Incorrect:

- **b) The middle layer is aqueous, not from meibomian glands.
- **c) Predominantly aqueous, not mucous.
- **d) Normal evaporative loss is less than 50%.
- **e) Becomes more concentrated, not purely aqueous, when evaporation occurs.

Clinical Application: Understanding tear film composition is important in diagnosing and treating dry eye syndromes.

Question 78

Question: A 10-year-old boy came to the OPD along with his mother about redness of the right eye for the last two days. His temperature was 40°C, and on examination, the eye specialist diagnosed him as a case of left preseptal cellulitis and put him on systemic antibiotics. The best antibiotic for this patient could be:

Answer Choices: a) Cephalexin
b) Dicloxacillin
c) Tetracycline
d) Trimethoprim-sulfamethoxazole
e) Combination of a & b

Correct Answer:
e) **Combination of a & b**

Explanation: Preseptal cellulitis requires coverage against common skin flora including Staphylococcus aureus and Streptococcus species. Combining cephalexin (a cephalosporin) and dicloxacillin (a penicillinase-resistant penicillin) provides broad coverage.

Why Other Options Are Incorrect:

- **a) Cephalexin alone:** May not cover all organisms.
- **b) Dicloxacillin alone:** May not be sufficient.
- **c) Tetracycline:** Not first-line in children due to teeth discoloration.
- **d) Trimethoprim-sulfamethoxazole:** Alternative but may not cover all organisms.

Clinical Application: Empirical antibiotic therapy in preseptal cellulitis should cover gram-positive cocci. Close monitoring is necessary to ensure resolution and prevent progression to orbital cellulitis.

Question 79

Question: A 65-year-old female presents with watering eye since three years. To diagnose chronic dacryocystitis, one has to understand that lacrimal sac swelling presents:

Answer Choices: a) Below the medial palpebral ligament
b) Above the medial palpebral ligament
c) Lateral to medial palpebral ligament
d) Medial to medial palpebral ligament
e) Behind the medial palpebral ligament

Correct Answer:
a) **Below the medial palpebral ligament**

Explanation: The lacrimal sac is located below the medial palpebral ligament. Swelling due to dacryocystitis presents inferior and slightly medial to the inner canthus.

Why Other Options Are Incorrect:

- **b) Above the ligament:** Less common.
- **c) Lateral to ligament:** Unlikely.
- **d) Medial to ligament:** Partially correct but below is more accurate.
- **e) Behind the ligament:** Anatomically incorrect for sac swelling.

Clinical Application: Understanding anatomy aids in differentiating lacrimal sac swelling from other medial canthal masses.

Question 80

Question: A mother brought her six months child to OPD with epiphora in the right eye since birth. The examining doctor suspects right congenital nasolacrimal duct obstruction. The most appropriate treatment for this child at this age is:

Answer Choices: a) Lacrimal massage
b) Syringing of nasolacrimal duct
c) Probing of nasolacrimal duct
d) External Dacryocystorhinostomy
e) Laser dacryocystorhinostomy

Correct Answer:
a) **Lacrimal massage**

Explanation: In infants less than 1 year, conservative management with lacrimal sac massage (Crigler massage) is recommended initially to help open the obstruction.

Why Other Options Are Incorrect:

- **b) Syringing:** Not practical in infants.
- **c) Probing:** Considered if conservative treatment fails after several months.
- **d) External DCR:** Surgical procedure for adults.
- **e) Laser DCR:** Not standard in infants.

Clinical Application: Educate parents on proper massage technique; if obstruction persists beyond 6-12 months, probing under anesthesia may be considered.

Note: The above set covers questions 61 to 80, including clinical pearls, questions, answer choices, correct answers, and explanations as requested.

Clinical Pearls for Correct Answers:

81. **Congenital Glaucoma Signs:** "In infants with epiphora, photophobia, and corneal enlargement, measure corneal diameter to assess for congenital glaucoma."
82. **Management of Microbial Keratitis:** "Intensive topical antibiotics are the mainstay of treatment for microbial keratitis to eradicate infection and prevent complications."
83. **Vitamin A Deficiency and Tear Film:** "Vitamin A deficiency affects the mucin layer of the tear film, leading to dry eye symptoms."
84. **Schirmer Test Interpretation:** "A Schirmer test result of less than 5 mm wetting in 5 minutes indicates severe dry eye."
85. **Common Organism in Posterior Blepharitis:** "Staphylococcus aureus is commonly associated with anterior blepharitis, leading to dry eye symptoms."
86. **Retinoblastoma Presentation:** "A white pupillary reflex (leukocoria) with intraocular calcification in a child suggests retinoblastoma."
87. **Investigation for Papilledema:** "MRI or CT scan of the brain is essential to rule out intracranial causes in papilledema."
88. **Myasthenia Gravis Indicators:** "Ptosis worsening in the evening with fatigability suggests myasthenia gravis."
89. **Management of Microbial Keratitis:** "Intensive topical antibiotics are critical in treating microbial keratitis, especially in contact lens wearers."
90. **Central Retinal Artery Occlusion Signs:** "Sudden painless loss of vision with a cherry-red spot and attenuated vessels indicates central retinal artery occlusion."

Question 81

Question: A father brings his three-month-old baby for complaints of watering in both eyes since birth. Examination under anesthesia was planned. What is the most important test?

Answer Choices: a) Lacrimal regurgitation test
b) Intraocular pressure measurement
c) Corneal diameter measurement
d) Fundus examination
e) Anterior segment examination

Correct Answer:
c) **Corneal diameter measurement**

Explanation: In infants presenting with watering since birth, it's crucial to assess for congenital glaucoma. Measuring the corneal diameter is essential because enlarged corneas (buphthalmos) are a hallmark of congenital glaucoma due to elevated intraocular pressure stretching the cornea.

Why Other Options Are Incorrect:

- **a) Lacrimal regurgitation test:** Useful for nasolacrimal duct obstruction but less critical than assessing for glaucoma.
- **b) Intraocular pressure measurement:** Important but challenging and less reliable in infants; corneal measurements are more indicative.
- **d) Fundus examination:** Necessary but secondary to diagnosing glaucoma.
- **e) Anterior segment examination:** Important but measuring corneal diameter directly assesses for corneal enlargement.

Clinical Application: Early detection of congenital glaucoma is vital to prevent optic nerve damage and preserve vision. Prompt surgical intervention may be necessary.

Question 82

Question: A 48-year-old adult was admitted to the ward with severe redness, pain, and decreased vision in the right eye. On examination, there was stromal infiltrate with overlying epithelial defect and hypopyon in the anterior chamber. What is the most important step for the management of this microbial keratitis?

Answer Choices: a) Stop contact lens wearing
b) Intensive topical antibiotics
c) Oral antibiotics if limbal lesion
d) Topical cycloplegics
e) Oral analgesics

Correct Answer:
b) **Intensive topical antibiotics**

Explanation: The patient has signs of severe microbial keratitis (corneal ulcer), including stromal infiltrate, epithelial defect, and hypopyon. The most critical management step is to initiate intensive topical antibiotic therapy to control the infection.

Why Other Options Are Incorrect:

- **a) Stop contact lens wearing:** Important but not the primary treatment.
- **c) Oral antibiotics if limbal lesion:** Oral antibiotics have limited penetration to the cornea.
- **d) Topical cycloplegics:** Provide pain relief but do not address the infection.
- **e) Oral analgesics:** Symptomatic relief only.

Clinical Application: Prompt and aggressive antibiotic treatment is essential to prevent corneal perforation and potential vision loss.

Question 83

Question: A patient, 50 years old female with a history of anorexia nervosa, is brought by the attendant due to some ocular problems. On examination, her vision is 6/6 in both eyes. There are some conjunctival dry lusterless points with dry eyes which show vitamin A deficiency. Which layer of the tear film is affected by this condition?

Answer Choices: a) Aqueous layer
b) Lipid layer
c) Lactoferrin
d) Mixed layer
e) Mucin layer

Correct Answer:
e) **Mucin layer**

Explanation: Vitamin A deficiency leads to loss of goblet cells in the conjunctiva, reducing mucin production. The mucin layer is essential for tear film stability and adherence to the ocular surface.

Why Other Options Are Incorrect:

- **a) Aqueous layer:** Produced by lacrimal glands; affected in aqueous-deficient dry eye.
- **b) Lipid layer:** Produced by meibomian glands; not directly affected by vitamin A deficiency.
- **c) Lactoferrin:** A protein in the aqueous layer; not primarily affected.
- **d) Mixed layer:** Not a standard term in tear film anatomy.

Clinical Application: Supplementing vitamin A and using artificial tears can help restore the mucin layer and alleviate symptoms.

Question 84

Question: A patient, 50 years old female, complaining of irritation, redness, foreign body sensation. On examination, her vision is 6/6 in both eyes. You suspect dry eye and you want to do Schirmer's test for 5 minutes for confirmation. What is the parameter for confirmation?

Answer Choices: a) Less than 5 mm
b) Less than 10 mm
c) Less than 15 mm
d) Less than 20 mm
e) Less than 25 mm

Correct Answer:
a) **Less than 5 mm**

Explanation: A Schirmer's test result of less than 5 mm wetting after 5 minutes indicates severe dry eye. Normal is typically greater than 10 mm.

Why Other Options Are Incorrect:

- **b) Less than 10 mm:** Suggests mild to moderate dry eye.
- **c), d), e):** Values higher than 10 mm are generally considered normal.

Clinical Application: Confirming dry eye severity guides treatment options, from artificial tears to punctal plugs or medications.

Question 85

Question: A patient, 25 years old female, complaining of irritation, redness, foreign body sensation for many times. On examination, her vision is 6/6 both eyes, anterior blepharitis noted. What is the common organism for this problem?

Answer Choices: a) Aspergillus
b) Gonococcus
c) Haemophilus
d) Staphylococcus
e) Streptococcus

Correct Answer:
d) **Staphylococcus**

Explanation: Staphylococcus aureus is the most common organism associated with anterior blepharitis, leading to inflammation of the eyelid margins.

Why Other Options Are Incorrect:

- **a) Aspergillus:** A fungus; not commonly implicated in blepharitis.
- **b) Gonococcus:** Causes hyperacute conjunctivitis.
- **c) Haemophilus:** Less common in blepharitis.
- **e) Streptococcus:** Less commonly involved.

Clinical Application: Treatment includes eyelid hygiene and possibly topical antibiotics targeting Staphylococcus.

Question 86

Question: The mother of a one and a half year old child gives history of a white reflex from one eye for the past 1 month. On computed tomography (CT) scan of the orbit, there is intraocular calcification seen within the globe. The most likely diagnosis is:

Answer Choices: a) Congenital cataract
b) Retinoblastoma
c) Coats disease
d) Endophthalmitis
e) Congenital glaucoma

Correct Answer:
b) **Retinoblastoma**

Explanation: Retinoblastoma is the most common intraocular malignancy in children, presenting with leukocoria (white pupillary reflex) and calcification within the tumor seen on imaging.

Why Other Options Are Incorrect:

- **a) Congenital cataract:** Causes leukocoria but no calcification.
- **c) Coats disease:** Abnormal retinal vessels; may cause leukocoria but less likely to show calcification.
- **d) Endophthalmitis:** Infection; not typically associated with calcification.
- **e) Congenital glaucoma:** Presents with buphthalmos, not leukocoria.

Clinical Application: Urgent referral to oncology for management is critical to preserve life and possibly vision.

Question 87

Question: An obese young lady of 35 years presented with blurring of vision. On examination, there is bilateral papilledema. Her visual acuity at presentation is 6/6 in both eyes. Clinically she has headache and swollen discs. The main investigation of her papilledema would be to do:

Answer Choices: a) A CT scan or MRI of the brain
b) Goldmann Visual Field
c) A lumbar puncture
d) Urine albumin and calcium
e) Electrocardiogram and echocardiogram

Correct Answer:
a) **A CT scan or MRI of the brain**

Explanation: Papilledema indicates raised intracranial pressure (ICP). Neuroimaging is essential to rule out space-occupying lesions (e.g., tumors, hemorrhage) before considering other causes.

Why Other Options Are Incorrect:

- **b) Visual field testing:** Helpful but not diagnostic of cause.
- **c) Lumbar puncture:** Contraindicated until a mass lesion is excluded via imaging.
- **d) Urine tests:** Not directly related.
- **e) Cardiac tests:** Unrelated.

Clinical Application: Timely imaging can detect life-threatening conditions requiring immediate intervention.

Question 88

Question: A 40 years old female is complaining of drooping of the right eyelid which gets worse in the evening. She also complains of general fatigability worse in the evening. What is your diagnosis?

Answer Choices: a) Senile ptosis
b) Traumatic ptosis
c) Myasthenia gravis
d) Horner's syndrome
e) Third nerve palsy

Correct Answer:
c) **Myasthenia gravis**

Explanation: Myasthenia gravis is an autoimmune disorder characterized by muscle weakness that worsens with activity and improves with rest. Ptosis worsening in the evening suggests fatigability of the levator muscle.

Why Other Options Are Incorrect:

- **a) Senile ptosis:** Due to age-related changes; not fluctuating.
- **b) Traumatic ptosis:** Related to injury; not fluctuating.
- **d) Horner's syndrome:** Ptosis with miosis and anhidrosis; does not fluctuate.
- **e) Third nerve palsy:** Causes ptosis but with other eye movement deficits.

Clinical Application: Perform edrophonium (Tensilon) test or antibody testing to confirm diagnosis and initiate appropriate treatment.

Question 89

Question: A 72 years old male smoker with a history of hypertension for last 5 years presented to you with redness in the right eye for last 2 weeks. There was dense corneal stromal infiltration with epithelial defect. What is the most important step for the management of this microbial keratitis?

Answer Choices: a) Stop contact lens wearing
b) Intensive topical antibiotics
c) Oral antibiotics if limbal lesion
d) Topical cycloplegics
e) Oral analgesics

Correct Answer:
b) **Intensive topical antibiotics**

Explanation: The patient has microbial keratitis with corneal infiltration and epithelial defect. Intensive topical antibiotics are crucial to eradicate the infection.

Why Other Options Are Incorrect:

- **a) Stop contact lens wearing:** Important if applicable but not mentioned.
- **c) Oral antibiotics:** Limited effectiveness for corneal infections.
- **d) Topical cycloplegics:** Adjunctive therapy for pain relief.
- **e) Oral analgesics:** Symptomatic relief only.

Clinical Application: Early aggressive antibiotic therapy prevents corneal perforation and potential vision loss.

Question 90

Question: A patient presents with sudden painless loss of vision, having vision of light perception only in the right eye since yesterday, and the left eye is normal with visual acuity of 6/6. The fundus examination shows attenuation of arteries and veins with sludging and segmentation of the blood column with cloudy white edematous (ground glass) retina with cherry red spot at fovea. What is the likely clinical diagnosis?

Answer Choices: a) Central retinal artery occlusion
b) Diabetic retinopathy
c) Hypertensive retinopathy
d) Ischemic ocular syndrome
e) Sickle cell retinopathy

Correct Answer:
a) **Central retinal artery occlusion**

Explanation: Central retinal artery occlusion (CRAO) presents with sudden, painless vision loss, a pale retina due to ischemia, and a cherry-red spot at the fovea where the retina is thinner.

Why Other Options Are Incorrect:

- **b) Diabetic retinopathy:** Typically bilateral with microaneurysms and hemorrhages.

- **c) Hypertensive retinopathy:** Shows arteriolar changes, exudates, hemorrhages; not sudden vision loss.
- **d) Ischemic ocular syndrome:** Gradual vision loss due to carotid occlusive disease.
- **e) Sickle cell retinopathy:** Presents with peripheral neovascularization; less likely.

Clinical Application: CRAO is an ocular emergency. Although treatment options are limited, immediate ocular massage and reduction of intraocular pressure may be attempted to restore circulation.