

Department of Ophthalmology

Comilla Medical College, Comilla
Lecture classes schedule of 5th year (Com- 31)
Venue: Dr.Ripon Gallery,CoMC
Time: Monday & Wednesday (8:00am-9:00 am)

**Lesson plan for Lecture Contents of
MBBS 5th Year students (Session :2021-
2022)**

Lesson Plan

Basic Structure of Eyeball and Ocular Adnexa

Duration: 60 minutes

Target: 5th Year MBBS Students

Objectives (2 min)

Describe the anatomy of the eyeball.

Identify the fibrous, vascular and neural coats.

Explain the anatomy of the cornea, sclera, uvea, lens, vitreous and retina.

Describe the ocular adnexa (eyelids, conjunctiva, lacrimal apparatus, orbit and extraocular muscles).

Correlate anatomy with common ophthalmic diseases.

Purpose (3 min)

Provide the anatomical foundation for clinical ophthalmology and prepare students for clinical examination and surgery.

Prerequisite (2 min)

Basic anatomy of head and neck, cranial nerves and general histology.

Teaching Contents (40 min)

Eyeball: dimensions and coats

Cornea and sclera

Uveal tract: iris, ciliary body and choroid

Retina, macula and optic disc

Lens and vitreous

Aqueous humour

Eyelids and conjunctiva

Lacrimal apparatus

Orbit and extraocular muscles

Blood supply and nerve supply

Clinical correlations: cataract, glaucoma, corneal ulcer, retinal detachment and orbital cellulitis

Teaching Methods

Interactive lecture, PowerPoint presentation, eye model demonstration, clinical photographs and question-answer session.

Teaching Materials

Laptop, projector, whiteboard, eye model, orbital model, anatomical charts and fundus photographs.

Assessment (10 min)

Oral questions, diagram labeling, image identification and short case discussion.

Summary (3 min)

Review the anatomical structures of the eye and ocular adnexa with emphasis on their clinical importance.

References

Kanski's Clinical Ophthalmology

Parsons' Diseases of the Eye

AAO Basic and Clinical Science Course (BCSC)

Khurana AK. Comprehensive Ophthalmology

Lesson Plan

Physiology and Neurology of Vision

Duration: 60 minutes

Target: 5th Year MBBS Students

Objectives (2 minutes)

- Describe the physiology of vision.
- Explain image formation and phototransduction.
- Describe the visual pathway from retina to visual cortex.
- Explain pupillary light reflex and accommodation reflex.
- Correlate visual pathway lesions with visual field defects.

Purpose (3 minutes)

To provide the physiological basis of normal vision and relate visual function to common neuro-ophthalmic disorders encountered in clinical practice.

Prerequisite of Learning (2 minutes)

- Anatomy of the eyeball and retina
- Cranial nerves II and III
- Basic neurophysiology

Teaching Contents (40 minutes)

- Optics of vision and image formation
- Visual acuity and contrast sensitivity
- Rods and cones
- Phototransduction
- Dark and light adaptation
- Visual pathway: retina, optic nerve, optic chiasma, optic tract, lateral geniculate body, optic radiation and visual cortex
- Pupillary light reflex
- Accommodation reflex
- Binocular vision and stereopsis
- Colour vision and colour blindness
- Visual field and common defects
- Clinical correlations: optic neuritis, RAPD, homonymous hemianopia, bitemporal hemianopia and cortical blindness

Teaching Methods

Interactive lecture, PowerPoint presentation, clinical photographs, visual field charts, guided discussion and question-answer session.

Teaching Materials

Laptop, multimedia projector, whiteboard, eye model, visual pathway diagrams, OCT images, fundus photographs and Humphrey visual field printouts.

Assessment (10 minutes)

- Oral questioning
- Interpretation of visual field charts
- Clinical scenario discussion
- Short end-session recap

Summary (3 minutes)

Review the physiology of vision, visual pathway, reflexes and the clinical significance of lesions affecting the visual system.

References

1. Kanski's Clinical Ophthalmology, Latest Edition
2. Parsons' Diseases of the Eye, Latest Edition
3. AAO Basic and Clinical Science Course (BCSC)
4. Khurana AK. Comprehensive Ophthalmology
5. Guyton & Hall Textbook of Medical Physiology

Lesson plan

Eyelid and Its Diseases

Duration: 60minutes

Target: 5th Year MBBS Students

Objectives (2 minutes)

- Describe the anatomy and functions of the eyelids.
- Classify common eyelid diseases.
- Recognize clinical features of inflammatory, infective, congenital and neoplastic eyelid disorders.
- Outline investigations and management of common eyelid diseases.
- Correlate eyelid disorders with ocular complications.

Purpose (3 minutes)

To provide students with the knowledge and skills required to diagnose and manage common eyelid diseases encountered in ophthalmic practice.

Prerequisite of Learning (2 minutes)

- Basic anatomy of the eyelid and orbit
- Conjunctival anatomy
- Principles of ocular examination

Teaching Contents (40 minutes)

- Applied anatomy of the eyelid
- Functions of the eyelids
- Examination of the eyelids
- Blepharitis
- Hordeolum externum (stye)
- Hordeolum internum
- Chalazion
- Trichiasis and distichiasis
- Entropion and ectropion
- Ptosis
- Lagophthalmos
- Blepharospasm
- Molluscum contagiosum and viral lesions

- Benign eyelid tumours
- Malignant eyelid tumours (BCC, SCC, sebaceous gland carcinoma)
- Principles of medical and surgical management
- Clinical correlations and complications

Teaching Methods

Interactive lecture, PowerPoint presentation, clinical photographs, case-based discussion and question-answer session.

Teaching Materials

Laptop, multimedia projector, whiteboard, eyelid photographs, eye model and surgical instrument photographs.

Assessment (10 minutes)

- Oral questions
- Clinical image identification
- Short case discussion
- End-session recap

Summary (3 minutes)

Summarize eyelid anatomy, common eyelid diseases, diagnosis, complications and management.

References

1. Kanski's Clinical Ophthalmology
2. Parsons' Diseases of the Eye
3. Khurana AK. Comprehensive Ophthalmology
4. AAO Basic and Clinical Science Course (BCSC)

Lesson Plan

Orbit

Duration: 60 minutes

Target: 5th Year MBBS Students

Objectives (2 minutes)

- Describe the anatomy of the orbit and orbital contents.
- Identify the bones, walls, foramina and fissures of the orbit.
- Explain the blood supply, nerve supply and fascial structures of the orbit.
- Recognize the clinical features of common orbital diseases.
- Outline the principles of investigation and management of orbital disorders.

Purpose (3 minutes)

To develop a sound understanding of orbital anatomy and common orbital diseases, enabling students to correlate anatomical knowledge with clinical ophthalmology.

Prerequisite of Learning (2 minutes)

- Basic anatomy of the skull and face
- Anatomy of the eyeball and ocular adnexa
- Cranial nerves II, III, IV, V and VI

Teaching Contents (40 minutes)

- Definition and boundaries of the orbit
- Orbital bones and walls
- Orbital apex, optic canal and superior/inferior orbital fissures
- Orbital septum, Tenon's capsule and fascial spaces
- Extraocular muscles and their actions
- Orbital fat and connective tissue
- Lacrimal gland
- Ophthalmic artery and venous drainage
- Nerve supply of the orbit
- Clinical examination of the orbit
- Proptosis: causes and evaluation
- Orbital cellulitis
- Thyroid eye disease
- Orbital tumors

- Orbital trauma and blow-out fracture
- Investigations: CT, MRI and ultrasonography
- Principles of medical and surgical management

Teaching Methods

Interactive lecture, PowerPoint presentation, orbital diagrams, CT/MRI images, case discussion and question–answer session.

Teaching Materials

Laptop, multimedia projector, whiteboard, skull model, orbital model, CT/MRI images and clinical photographs.

Assessment (10 minutes)

- Oral questions
- Clinical image interpretation
- Case-based discussion
- End-session recap

Summary (3 minutes)

Review orbital anatomy, examination, common diseases, investigations and basic management principles.

References

1. Kanski's Clinical Ophthalmology
2. Parsons' Diseases of the Eye
3. AAO Basic and Clinical Science Course (BCSC)
4. Khurana AK. Comprehensive Ophthalmology

Lesson Plan

Diseases of the Conjunctiva

Duration: 60 minutes

Target: 5th Year MBBS Students

Objectives (2 minutes)

- Describe the anatomy and functions of the conjunctiva.
- Classify common conjunctival diseases.
- Recognize the clinical features of infective, allergic and degenerative conjunctival disorders.
- Outline the investigations and management of common conjunctival diseases.
- Identify sight-threatening conjunctival conditions requiring urgent referral.

Purpose (3 minutes)

To enable students to diagnose and manage common conjunctival diseases encountered in ophthalmic practice.

Prerequisite of Learning (2 minutes)

- Basic anatomy of the conjunctiva
- Ocular examination techniques
- Basic microbiology and immunology

Teaching Contents (40 minutes)

- Anatomy and functions of the conjunctiva
- Clinical examination of the conjunctiva
- Acute bacterial conjunctivitis
- Viral conjunctivitis
- Chlamydial conjunctivitis
- Allergic conjunctivitis and vernal keratoconjunctivitis
- Membranous and pseudomembranous conjunctivitis
- Trachoma
- Pinguecula and pterygium
- Conjunctival cysts and nevi
- Conjunctival tumors
- Investigations (smear, culture, conjunctival scraping)
- Medical and surgical management
- Complications and prevention

Teaching Methods

Interactive lecture, PowerPoint presentation, clinical photographs, slit-lamp images, case-based discussion and question-answer session.

Teaching Materials

Laptop, multimedia projector, whiteboard, eye model, slit-lamp photographs and clinical charts.

Assessment (10 minutes)

- Oral questions
- Clinical image identification
- Case discussion
- Short end-session quiz

Summary (3 minutes)

Review the classification, diagnosis, investigations and management of common conjunctival diseases.

References

1. Kanski's Clinical Ophthalmology
2. Parsons' Diseases of the Eye
3. AAO Basic and Clinical Science Course (BCSC)
4. Khurana AK. Comprehensive Ophthalmology

Lesson Plan

Diseases of the Lacrimal Apparatus

Duration: 60 minutes

Target: 5th Year MBBS Students

Objectives (2 minutes)

- Describe the anatomy and physiology of the lacrimal apparatus.
- Classify common diseases of the lacrimal apparatus.
- Recognize the clinical features of lacrimal disorders.
- Outline investigations and management of common lacrimal diseases.
- Identify conditions requiring urgent ophthalmic referral.

Purpose (3 minutes)

To provide students with the knowledge and clinical skills necessary to diagnose and manage diseases of the lacrimal apparatus.

Prerequisite of Learning (2 minutes)

- Anatomy of the eyelids and orbit
- Basic ocular examination
- Anatomy and physiology of tear film

Teaching Contents (40 minutes)

- Anatomy and physiology of the lacrimal gland and drainage system
- Tear film and lacrimation
- Dry eye disease (Keratoconjunctivitis sicca)
- Congenital nasolacrimal duct obstruction
- Acute and chronic dacryocystitis
- Canaliculitis
- Dacryoadenitis
- Lacrimal fistula
- Lacrimal gland tumors
- Epiphora: causes and evaluation
- Investigations: Fluorescein dye disappearance test, syringing, probing, dacryocystography
- Medical management
- Surgical management: DCR, DCT and probing
- Complications and follow-up

Teaching Methods

Interactive lecture, PowerPoint presentation, clinical photographs, demonstration of lacrimal syringing, and case-based discussion.

Teaching Materials

Laptop, multimedia projector, whiteboard, lacrimal apparatus diagrams, syringing instruments and clinical images.

Assessment (10 minutes)

- Oral questions
- Clinical image interpretation
- Case discussion
- Short end-session quiz

Summary (3 minutes)

Review the anatomy, physiology, diagnosis, investigations and management of diseases of the lacrimal apparatus.

References

1. Kanski's Clinical Ophthalmology
2. Parsons' Diseases of the Eye
3. AAO Basic and Clinical Science Course (BCSC)
4. Khurana AK. Comprehensive Ophthalmology

Lesson Plan

Accommodation and Its Disturbances

Duration: 60 minutes

Target: 5th Year MBBS Students

Objectives (2 minutes)

- Describe the mechanism of accommodation.
- Explain the physiology and neural control of accommodation.
- Classify disturbances of accommodation.
- Recognize clinical features and investigations of accommodative disorders.
- Outline the management of common accommodative disturbances.

Purpose (3 minutes)

To enable students to understand the physiology of accommodation and diagnose and manage common accommodative disorders.

Prerequisite of Learning (2 minutes)

- Basic ocular anatomy
- Physiology of vision
- Refractive errors and optics

Teaching Contents (40 minutes)

- Definition of accommodation
- Mechanism of accommodation (Helmholtz theory)
- Neural pathway and accommodation reflex
- Near triad (accommodation, convergence and miosis)
- Amplitude of accommodation
- Presbyopia
- Accommodative insufficiency
- Accommodative excess (spasm of accommodation)
- Accommodative paralysis (cycloplegia)
- Ill-sustained accommodation
- Investigations: near point of accommodation, amplitude, dynamic retinoscopy
- Medical and optical management
- Clinical correlations and case discussion

Teaching Methods

Interactive lecture, PowerPoint presentation, diagrams, clinical case discussion and question-answer session.

Teaching Materials

Laptop, multimedia projector, whiteboard, eye model, accommodative charts and clinical images.

Assessment (10 minutes)

- Oral questions
- Clinical problem-solving
- Interpretation of accommodative findings
- Short end-session quiz

Summary (3 minutes)

Review the physiology of accommodation, accommodation reflex, common disturbances, investigations and management.

References

1. Kanski's Clinical Ophthalmology
2. Parsons' Diseases of the Eye
3. AAO Basic and Clinical Science Course (BCSC)
4. Khurana AK. Comprehensive Ophthalmology
5. Guyton & Hall Textbook of Medical Physiology

Lesson Plan

Diseases of the Cornea and Sclera

Duration: 60 minutes

Target: 5th Year MBBS Students

Objectives (2 minutes)

- Describe the anatomy and functions of the cornea and sclera.
- Classify common diseases of the cornea and sclera.
- Recognize the clinical features of corneal and scleral disorders.
- Outline investigations and management of common diseases.
- Identify ocular emergencies requiring urgent treatment.

Purpose (3 minutes)

To enable students to understand the pathology, diagnosis and management of common diseases affecting the cornea and sclera.

Prerequisite of Learning (2 minutes)

- Anatomy of the cornea and sclera
- Basic slit-lamp examination
- Microbiology and ocular immunology

Teaching Contents (40 minutes)

- Anatomy and physiology of the cornea and sclera
- Clinical examination of the anterior segment
- Corneal ulcer (bacterial, fungal, viral and Acanthamoeba)
- Herpes simplex and herpes zoster keratitis
- Corneal abrasion and foreign body
- Corneal dystrophies and degenerations
- Keratoconus
- Corneal edema
- Scleritis and episcleritis
- Corneal transplantation (keratoplasty): indications and types
- Investigations: corneal scraping, staining, culture, pachymetry and corneal topography
- Medical and surgical management
- Complications and prevention

Teaching Methods

Interactive lecture, PowerPoint presentation, slit-lamp photographs, case-based discussion and question-answer session.

Teaching Materials

Laptop, multimedia projector, whiteboard, eye model, slit-lamp photographs, fluorescein strips and corneal topography images.

Assessment (10 minutes)

- Oral questions
- Clinical image interpretation
- Case discussion
- Short end-session quiz

Summary (3 minutes)

Review the anatomy, diagnosis, investigations and management of common corneal and scleral diseases.

References

6. Kanski's Clinical Ophthalmology
7. Parsons' Diseases of the Eye
8. AAO Basic and Clinical Science Course (BCSC)
9. Khurana AK. Comprehensive Ophthalmology

Lesson Plan

The Lens: Structure and Physiology

Duration: 60 minutes

Target: 5th Year MBBS Students

Objectives (2 minutes)

- Describe the anatomy and structure of the crystalline lens.
- Explain the physiology and metabolism of the lens.
- Understand the mechanism of accommodation.
- Describe age-related changes of the lens.
- Correlate lens physiology with common clinical disorders.

Purpose (3 minutes)

To provide students with a clear understanding of the structure, physiology and clinical importance of the crystalline lens.

Prerequisite of Learning (2 minutes)

- Basic anatomy of the eyeball
- Physiology of vision
- Accommodation and refractive errors

Teaching Contents (40 minutes)

- Gross anatomy of the crystalline lens
- Embryology and development of the lens
- Lens capsule, epithelium, cortex and nucleus
- Lens fibers and sutures
- Blood supply and nutrition of the lens
- Lens metabolism
- Transparency and refractive properties
- Mechanism of accommodation
- Age-related changes and presbyopia
- Clinical correlations: cataract, ectopia lentis and aphakia
- Investigations and clinical examination of the lens

Teaching Methods

Interactive lecture, PowerPoint presentation, eye model demonstration, slit-lamp photographs, diagrams and case-based discussion.

Teaching Materials

Laptop, multimedia projector, whiteboard, eye model, slit-lamp images and anatomical charts.

Assessment (10 minutes)

- Oral questions
- Clinical image identification
- Short case discussion
- End-session quiz

Summary (3 minutes)

Review the structure, physiology, nutrition, accommodation and clinical importance of the crystalline lens.

References

1. Kanski's Clinical Ophthalmology
2. Parsons' Diseases of the Eye
3. AAO Basic and Clinical Science Course (BCSC)
4. Khurana AK. Comprehensive Ophthalmology

Lesson Plan

Cataract

Duration: 60 minutes

Target: 5th Year MBBS Students

Objectives (2 minutes)

- Define cataract and describe its epidemiology.
- Classify different types of cataract.
- Recognize the clinical features and complications of cataract.
- Describe the investigations and indications for surgery.
- Outline the principles of cataract surgery and postoperative care.

Purpose (3 minutes)

To provide students with the knowledge required to diagnose, evaluate and manage cataract, the leading cause of reversible blindness.

Prerequisite of Learning (2 minutes)

- Structure and physiology of the crystalline lens
- Visual acuity assessment
- Basic slit-lamp examination

Teaching Contents (40 minutes)

- Definition and epidemiology of cataract
- Etiology and risk factors
- Classification: congenital, developmental, age-related, traumatic, metabolic and complicated cataract
- Morphological types: nuclear, cortical and posterior subcapsular cataract
- Clinical features and symptoms
- Evaluation and grading of cataract
- Investigations: visual acuity, refraction, slit-lamp examination, IOP, fundus evaluation, biometry and keratometry
- Indications for cataract surgery
- Types of cataract surgery: ECCE, SICS and phacoemulsification
- Intraocular lenses (IOLs)
- Postoperative care and complications
- Prevention and patient counseling

Teaching Methods

Interactive lecture, PowerPoint presentation, slit-lamp photographs, surgical videos, case-based discussion and question-answer session.

Teaching Materials

Laptop, multimedia projector, whiteboard, eye model, cataract photographs, IOL samples and surgical instruments.

Assessment (10 minutes)

- Oral questions
- Clinical image identification
- Case discussion
- Short end-session quiz

Summary (3 minutes)

Review the classification, diagnosis, investigations, surgical management and postoperative care of cataract.

References

1. Kanski's Clinical Ophthalmology
2. Parsons' Diseases of the Eye
3. AAO Basic and Clinical Science Course (BCSC)
4. Khurana AK. Comprehensive Ophthalmology

Lesson Plan

Refractive Errors

Duration: 60 minutes

Target: 5th Year MBBS Students

Objectives (2 minutes)

- Define refractive error and explain emmetropia.
- Classify the different types of refractive errors.
- Describe the etiology, clinical features and diagnosis of refractive errors.
- Interpret basic refractive findings.
- Outline the principles of optical, contact lens and refractive surgical correction.

Purpose (3 minutes)

To provide students with a comprehensive understanding of refractive errors, their diagnosis, correction and prevention of visual impairment.

Prerequisite of Learning (2 minutes)

- Structure and physiology of the eye
- Accommodation and its disturbances
- Basic optics and visual physiology

Teaching Contents (40 minutes)

- Definition of emmetropia and ametropia
- Optics of the eye
- Myopia: types, causes, clinical features and management
- Hypermetropia: types, causes, clinical features and management
- Astigmatism: regular and irregular, classification and management
- Presbyopia: causes, symptoms and correction
- Anisometropia and aniseikonia
- Methods of refraction: objective and subjective
- Retinoscopy and autorefractometry
- Correction with spectacles, contact lenses and refractive surgery (LASIK, PRK, SMILE)
- Complications and patient counselling

Teaching Methods

Interactive lecture, PowerPoint presentation, clinical demonstrations, refraction instruments, case-based discussion and question-answer session.

Teaching Materials

Laptop, multimedia projector, whiteboard, trial lens set, retinoscope, autorefractometer, Snellen chart and eye model.

Assessment (10 minutes)

- Oral questions
- Clinical case discussion
- Interpretation of refraction findings
- Short end-session quiz

Summary (3 minutes)

Review the types, diagnosis and management of refractive errors with emphasis on accurate refraction and appropriate optical correction.

References

1. Kanski's Clinical Ophthalmology
2. Parsons' Diseases of the Eye
3. AAO Basic and Clinical Science Course (BCSC)
4. Khurana AK. Comprehensive Ophthalmology

Lesson Plan

Uveal Tract

Duration: 60 minutes

Target: 5th Year MBBS Students

Objectives (2 minutes)

- Describe the anatomy of the uveal tract.
- Explain the physiology and functions of the iris, ciliary body and choroid.
- Recognize common diseases of the uveal tract.
- Outline investigations and management of uveal disorders.
- Correlate uveal pathology with clinical ophthalmology.

Purpose (3 minutes)

To provide students with a comprehensive understanding of the anatomy, physiology and common diseases of the uveal tract.

Prerequisite of Learning (2 minutes)

- Basic anatomy of the eyeball
- Physiology of vision
- Slit-lamp examination of the anterior segment

Teaching Contents (40 minutes)

- Definition and components of the uveal tract
- Anatomy of the iris
- Anatomy of the ciliary body
- Anatomy of the choroid
- Blood supply and innervation
- Physiology of aqueous humour formation
- Accommodation and ciliary muscle function
- Functions of the uveal tract
- Anterior, intermediate, posterior and panuveitis
- Etiology of uveitis (infectious and non-infectious)
- Clinical features, complications and differential diagnosis
- Investigations: slit-lamp examination, fundus examination, OCT, FFA and laboratory tests
- Principles of medical and surgical management

Teaching Methods

Interactive lecture, PowerPoint presentation, clinical photographs, slit-lamp videos, case-based discussion and question-answer session.

Teaching Materials

Laptop, projector, whiteboard, eye model, slit-lamp photographs, fundus photographs and OCT images.

Assessment (10 minutes)

- Oral questions
- Clinical image interpretation
- Case discussion
- Short end-session quiz

Summary (3 minutes)

Review the anatomy, physiology, common diseases, investigations and management of the uveal tract.

References

1. Kanski's Clinical Ophthalmology
2. Parsons' Diseases of the Eye
3. AAO Basic and Clinical Science Course (BCSC)
4. Khurana AK. Comprehensive Ophthalmology

Lesson Plan

Uveitis

Duration: 60 minutes

Target: 5th Year MBBS Students

Objectives (2 minutes)

- Define uveitis and classify its types.
- Describe the etiology and pathogenesis of uveitis.
- Recognize the clinical features of anterior, intermediate, posterior and panuveitis.
- Outline investigations for uveitis.
- Discuss the principles of medical and surgical management.

Purpose (3 minutes)

To equip students with the knowledge and clinical skills required for the diagnosis and management of patients with uveitis.

Prerequisite of Learning (2 minutes)

- Anatomy and physiology of the uveal tract
- Slit-lamp examination
- Basic ocular immunology

Teaching Contents (40 minutes)

- Definition and classification of uveitis
- Etiology: infectious and non-infectious causes
- Pathogenesis and immunology
- Anterior uveitis
- Intermediate uveitis
- Posterior uveitis
- Panuveitis
- Clinical features and differential diagnosis
- Complications: cataract, glaucoma, CME, band keratopathy and hypotony
- Investigations: slit-lamp examination, fundus examination, OCT, FFA, B-scan, laboratory investigations
- Medical treatment: corticosteroids, cycloplegics, immunosuppressants and biologics
- Surgical management and follow-up

Teaching Methods

Interactive lecture, PowerPoint presentation, slit-lamp photographs, fundus photographs, case-based discussion and question-answer session.

Teaching Materials

Laptop, multimedia projector, whiteboard, eye model, slit-lamp images, OCT and FFA images.

Assessment (10 minutes)

- Oral questions
- Clinical image interpretation
- Case discussion
- Short end-session quiz

Summary (3 minutes)

Review the classification, etiology, diagnosis, investigations, complications and management of uveitis.

References

1. Kanski's Clinical Ophthalmology
2. Parsons' Diseases of the Eye
3. AAO Basic and Clinical Science Course (BCSC)
4. Khurana AK. Comprehensive Ophthalmology

Lesson Plan

Lens: Complications of Cataract

Duration: 60 minutes

Target: 5th Year MBBS Students

Objectives (2 minutes)

- Describe lens-related complications of cataract.
- Recognize clinical features of lens-induced diseases.
- Differentiate phacomorphic, phacolytic and lens-induced uveitis.
- Outline investigations and emergency management.
- Discuss indications for cataract surgery.

Purpose (3 minutes)

To enable students to identify and manage complications caused by advanced and hypermature cataract.

Prerequisite of Learning (2 minutes)

- Structure and physiology of the crystalline lens
- Classification of cataract
- Basic slit-lamp examination

Teaching Contents (40 minutes)

- Overview of advanced and hypermature cataract
- Phacomorphic glaucoma
- Phacolytic glaucoma
- Lens-particle glaucoma
- Lens-induced uveitis (phacoantigenic/phacotoxic)
- Morgagnian cataract
- Lens subluxation and dislocation associated with cataract
- Secondary glaucoma and optic nerve damage
- Investigations: VA, slit-lamp examination, IOP, gonioscopy, fundus examination, B-scan when fundus is obscured
- Medical stabilization before surgery
- Definitive management with cataract extraction and IOL implantation
- Postoperative complications and follow-up

Teaching Methods

Interactive lecture, case-based discussion, slit-lamp photographs, videos and question-answer session.

Teaching Materials

Laptop, projector, eye model, slit-lamp photographs, gonioscopy images and B-scan examples.

Assessment (10 minutes)

- Oral questions
- Clinical image interpretation
- Case discussion
- Short written quiz

Summary (3 minutes)

Summarize the diagnosis, investigations and management of lens-related complications of cataract.

References

1. Kanski's Clinical Ophthalmology
2. Parsons' Diseases of the Eye
3. AAO Basic and Clinical Science Course (BCSC)
4. Khurana AK. Comprehensive Ophthalmology

Lesson Plan

Specific Uveitis Entities

Duration: 60 minutes

Target: 5th Year MBBS Students

Objectives (2 minutes)

- Identify common specific uveitis entities.
- Recognize their etiology and clinical features.
- Plan appropriate investigations.
- Outline evidence-based management.
- Recognize complications and prognosis.

Purpose (3 minutes)

To enable students to diagnose and manage important infectious and non-infectious specific uveitis syndromes.

Prerequisite of Learning (2 minutes)

- Anatomy of the uveal tract
- Classification of uveitis
- Basic slit-lamp and fundus examination

Teaching Contents (40 minutes)

- Overview of specific uveitis entities
- HLA-B27-associated anterior uveitis
- Fuchs uveitis syndrome
- Vogt–Koyanagi–Harada (VKH) disease
- Behçet disease
- Sarcoid uveitis
- Tuberculous uveitis
- Toxoplasma retinochoroiditis
- Herpetic anterior uveitis (HSV/VZV/CMV)
- Sympathetic ophthalmia
- Birdshot chorioretinopathy
- White dot syndromes (overview)
- Investigations: OCT, FFA, ICG, laboratory tests and imaging
- Medical management: corticosteroids, antimicrobials, immunomodulatory therapy and biologics

- Complications and long-term follow-up

Teaching Methods

Interactive lecture, clinical photographs, OCT/FFA images, case-based discussion and question-answer session.

Teaching Materials

Laptop, projector, whiteboard, slit-lamp photographs, fundus photographs, OCT and FFA images.

Assessment (10 minutes)

- Oral questions
- Clinical image interpretation
- Case discussion
- Short written quiz

Summary (3 minutes)

Review the diagnosis, investigation and management of common specific uveitis entities.

References

1. Kanski's Clinical Ophthalmology
2. AAO Basic and Clinical Science Course (BCSC): Uveitis
3. Parsons' Diseases of the Eye
4. Khurana AK. Comprehensive Ophthalmology

Lesson Plan

Diseases of the Vitreous

Duration: 60 minutes

Target: 5th Year MBBS Students

Objectives (2 minutes)

- Describe the anatomy and physiology of the vitreous.
- Classify common vitreous diseases.
- Recognize the clinical features of vitreous disorders.
- Outline investigations and management.
- Identify conditions requiring urgent referral.

Purpose (3 minutes)

To provide students with knowledge and clinical skills for diagnosing and managing common vitreous diseases.

Prerequisite of Learning (2 minutes)

- Anatomy of the vitreous and retina
- Basic fundus examination
- Principles of ocular imaging

Teaching Contents (40 minutes)

- Anatomy and physiology of the vitreous
- Posterior vitreous detachment (PVD)
- Vitreous syneresis and synchysis
- Asteroid hyalosis
- Vitreous hemorrhage
- Endophthalmitis involving the vitreous
- Persistent fetal vasculature (PHPV/PFV)
- Vitreomacular traction syndrome
- Epiretinal membrane
- Retinal tear and rhegmatogenous retinal detachment related to PVD
- Investigations: slit-lamp biomicroscopy, indirect ophthalmoscopy, B-scan ultrasonography, OCT
- Medical and surgical management including pars plana vitrectomy
- Complications and follow-up

Teaching Methods

Interactive lecture, PowerPoint presentation, fundus photographs, B-scan and OCT demonstrations, case-based discussion and question-answer session.

Teaching Materials

Laptop, multimedia projector, whiteboard, eye model, fundus photographs, B-scan and OCT images.

Assessment (10 minutes)

- Oral questions
- Clinical image interpretation
- Case discussion
- Short end-session quiz

Summary (3 minutes)

Review the anatomy, diagnosis, investigations and management of common vitreous diseases.

References

1. Kanski's Clinical Ophthalmology
2. Parsons' Diseases of the Eye
3. AAO Basic and Clinical Science Course (BCSC)
4. Khurana AK. Comprehensive Ophthalmology

Lesson Plan

Extraocular Muscles and Ocular Motility

Duration: 60 minutes

Target: 5th Year MBBS Students

Objectives (2 minutes)

- Describe the anatomy of the extraocular muscles.
- Explain ocular movements and binocular vision.
- Assess ocular motility clinically.
- Recognize common ocular motility disorders.
- Outline investigations and management.

Purpose (3 minutes)

To develop knowledge and clinical skills in evaluating extraocular muscle function and disorders of ocular motility.

Prerequisite of Learning (2 minutes)

- Orbital anatomy
- Cranial nerves III, IV and VI
- Basic neuro-ophthalmology

Teaching Contents (40 minutes)

- Anatomy of the six extraocular muscles
- Actions of each extraocular muscle
- Blood supply and nerve supply
- Laws of ocular motility (Hering's and Sherrington's)
- Versions, vergence and ductions
- Binocular single vision
- Clinical examination of ocular motility
- Hirschberg, cover-uncover and alternate cover tests
- Hess chart and diplopia charting
- Cranial nerve palsies (III, IV and VI)
- Restrictive disorders (thyroid eye disease, orbital fracture)
- Myasthenia gravis and internuclear ophthalmoplegia
- Principles of medical and surgical management

Teaching Methods

Interactive lecture, eye model demonstration, clinical videos, case discussion and question-answer session.

Teaching Materials

Laptop, projector, whiteboard, eye model, Hess chart and clinical photographs.

Assessment (10 minutes)

- Oral questions
- Clinical demonstration
- Case discussion
- Short quiz

Summary (3 minutes)

Review anatomy, physiology, examination and common disorders of extraocular muscles and ocular motility.

References

1. Kanski's Clinical Ophthalmology
2. AAO BCSC
3. Parsons' Diseases of the Eye
4. Khurana AK. Comprehensive Ophthalmology

Lesson Plan

Ophthalmia Neonatorum

Duration: 60 minutes

Target: 5th Year MBBS Students

Objectives (2 minutes)

- Define ophthalmia neonatorum.
- Classify infectious and chemical causes.
- Recognize clinical features and complications.
- Outline investigations and treatment.
- Discuss prevention strategies.

Purpose (3 minutes)

To enable students to diagnose, manage and prevent ophthalmia neonatorum.

Prerequisite of Learning (2 minutes)

- Anatomy of the conjunctiva
- Basic microbiology
- Principles of ocular examination

Teaching Contents (40 minutes)

- Definition and epidemiology
- Etiology: Neisseria gonorrhoeae, Chlamydia trachomatis, Staphylococcus, Streptococcus, HSV and chemical conjunctivitis
- Risk factors and transmission
- Clinical features according to time of onset
- Differential diagnosis
- Investigations: conjunctival swab, Gram stain, Giemsa stain, culture and PCR where available
- Management: ocular irrigation, topical antibiotics, systemic antibiotics, antiviral therapy when indicated
- Complications: corneal ulcer, perforation, blindness and systemic infection
- Prophylaxis at birth and maternal STI screening
- Follow-up and prognosis

Teaching Methods

Interactive lecture, clinical photographs, case discussion and question-answer session.

Teaching Materials

Laptop, projector, whiteboard, neonatal eye photographs and treatment algorithms.

Assessment (10 minutes)

- Oral questions
- Clinical image interpretation
- Case discussion
- Short quiz

Summary (3 minutes)

Review the causes, diagnosis, management and prevention of ophthalmia neonatorum.

References

1. Kanski's Clinical Ophthalmology
2. Parsons' Diseases of the Eye
3. AAO Basic and Clinical Science Course (BCSC)
4. Khurana AK. Comprehensive Ophthalmology

Lesson plan

Corneal Ulcer: Evaluation and Clinical Features

Duration: 60 minutes

Target: 5th Year MBBS Students

Objectives (2 minutes)

- Define corneal ulcer and classify its types.
- Describe the clinical features of corneal ulcer.
- Perform systematic evaluation of a patient with corneal ulcer.
- Identify vision-threatening features requiring urgent management.
- Outline appropriate investigations.

Purpose (3 minutes)

To develop competency in the early recognition and evaluation of corneal ulcers to prevent visual loss.

Prerequisite of Learning (2 minutes)

- Corneal anatomy and physiology
- Slit-lamp examination
- Fluorescein staining technique

Teaching Contents (40 minutes)

- Definition and classification of corneal ulcer
- Etiology: bacterial, fungal, viral, protozoal and sterile ulcers
- Risk factors (trauma, contact lens use, ocular surface disease, immunosuppression)
- Symptoms: pain, redness, photophobia, watering, discharge, blurred vision
- Clinical signs: epithelial defect, stromal infiltrate, edema, hypopyon, corneal thinning and perforation
- History taking and ocular examination
- Visual acuity assessment
- Slit-lamp biomicroscopy with fluorescein staining
- Corneal sensation assessment
- Corneal scraping for Gram stain, KOH mount, culture and sensitivity
- Additional investigations when indicated (confocal microscopy, PCR)
- Differential diagnosis
- Severity assessment and indications for urgent referral

Teaching Methods

Interactive lecture, slit-lamp photographs, videos, case-based discussion and question-answer session.

Teaching Materials

Laptop, projector, slit-lamp images, fluorescein strips, corneal scraping instruments and microbiology images.

Assessment (10 minutes)

- Oral questions
- Clinical image interpretation
- Case discussion
- Short quiz

Summary (3 minutes)

Review the evaluation, clinical features and investigations of corneal ulcer.

References

1. Kanski's Clinical Ophthalmology
2. AAO Basic and Clinical Science Course (BCSC)
3. Parsons' Diseases of the Eye
4. Khurana AK. Comprehensive Ophthalmology

Lesson Plan

Viral Keratitis

Duration: 60 minutes

Target: 5th Year MBBS Students

Objectives (2 minutes)

- Define viral keratitis and identify common causative viruses.
- Recognize the clinical features of different types of viral keratitis.
- Plan appropriate investigations.
- Outline medical management and follow-up.
- Recognize complications and indications for referral.

Purpose (3 minutes)

To enable students to diagnose and manage viral keratitis promptly to prevent corneal scarring and visual loss.

Prerequisite of Learning (2 minutes)

- Corneal anatomy and physiology
- Slit-lamp examination
- Fluorescein staining

Teaching Contents (40 minutes)

- Definition and epidemiology
- Etiology: HSV, Herpes zoster ophthalmicus (VZV), Adenovirus, CMV (rare)
- Classification: epithelial, stromal, endothelial (disciform) and neurotrophic keratitis
- Risk factors and pathogenesis
- Clinical features of each subtype
- Differential diagnosis
- Evaluation: visual acuity, slit-lamp examination, fluorescein staining, corneal sensation
- Investigations: PCR/culture when indicated
- Management: topical and oral antivirals, cycloplegics, lubricants, corticosteroids for immune stromal disease under antiviral cover
- Complications: corneal scarring, thinning, perforation, recurrent disease
- Patient counselling and follow-up

Teaching Methods

Interactive lecture, slit-lamp photographs, case-based discussion and question-answer session.

Teaching Materials

Laptop, projector, slit-lamp images, fluorescein strips and clinical videos.

Assessment (10 minutes)

- Oral questions
- Clinical image interpretation
- Case discussion
- Short quiz

Summary (3 minutes)

Review the classification, clinical features, evaluation and management of viral keratitis.

References

1. Kanski's Clinical Ophthalmology
2. AAO BCSC
3. Parsons' Diseases of the Eye
4. Khurana AK. Comprehensive Ophthalmology

Lesson Plan

Glaucoma and Intraocular Pressure

Duration: 60 minutes

Target: 5th Year MBBS Students

Objectives (2 minutes)

- Define glaucoma and intraocular pressure (IOP).
- Explain aqueous humour dynamics and IOP regulation.
- Describe methods of IOP measurement.
- Recognize the relationship between IOP and glaucoma.
- Outline initial evaluation of glaucoma.

Purpose (3 minutes)

To provide students with a foundation in glaucoma and the clinical significance of intraocular pressure.

Prerequisite (2 minutes)

- Anterior chamber angle anatomy
- Aqueous humour physiology
- Basic optic nerve examination

Teaching Contents (40 minutes)

- Definition and classification of glaucoma
- Normal IOP and diurnal variation
- Aqueous humour formation and outflow pathways
- Risk factors for glaucoma
- Relationship between IOP and optic nerve damage
- Methods of IOP measurement: Goldmann applanation, Perkins, Tonopen, non-contact tonometry
- Central corneal thickness and its effect on IOP
- Gonioscopy
- Optic disc evaluation
- Visual field testing
- OCT RNFL assessment
- Principles of lowering IOP: medical, laser and surgical treatment

Teaching Methods

Interactive lecture, case discussion, tonometry demonstration and clinical image review.

Teaching Materials

Projector, eye model, Goldmann tonometer, gonioscopy lens, OCT and visual field printouts.

Assessment (10 minutes)

- Oral questions
- Clinical demonstration
- Case discussion
- Short quiz

Summary (3 minutes)

Review glaucoma classification, IOP physiology, measurement and initial evaluation.

References

1. Kanski's Clinical Ophthalmology
2. AAO BCSC
3. Parsons' Diseases of the Eye
4. Khurana AK. Comprehensive Ophthalmology

Lesson Plan

Glaucoma: Overview

Duration: 60 minutes

Target: 5th Year MBBS Students

Objectives (2 minutes)

- Define glaucoma and classify its major types.
- Describe epidemiology, risk factors and pathophysiology.
- Recognize clinical features and diagnostic evaluation.
- Outline principles of glaucoma management.
- Explain the importance of lifelong follow-up.

Purpose (3 minutes)

To provide MBBS students with a comprehensive overview of glaucoma, emphasizing early diagnosis and prevention of irreversible blindness.

Prerequisite of Learning (2 minutes)

- Anterior segment anatomy
- Aqueous humour dynamics
- Optic nerve head anatomy

Teaching Contents (40 minutes)

- Definition and epidemiology
- Classification: primary, secondary and developmental glaucomas
- Primary open-angle glaucoma
- Primary angle-closure glaucoma
- Risk factors
- Pathophysiology
- Clinical features
- Evaluation: visual acuity, IOP, gonioscopy, optic disc examination, perimetry, OCT RNFL
- Medical treatment
- Laser therapy
- Surgical treatment (trabeculectomy, drainage devices, MIGS overview)
- Patient education and follow-up

Teaching Methods

Interactive lecture, case-based discussion, clinical photographs and question-answer session.

Teaching Materials

Projector, eye model, gonioscopy lens, optic disc photographs, OCT and visual field reports.

Assessment (10 minutes)

- Oral questions
- Clinical image interpretation
- Case discussion
- Short quiz

Summary (3 minutes)

Summarize glaucoma classification, diagnosis, investigations and management.

References

1. Kanski's Clinical Ophthalmology
2. AAO Basic and Clinical Science Course (BCSC)
3. Parsons' Diseases of the Eye
4. Khurana AK. Comprehensive Ophthalmology

Lesson Plan

Corneal Ulcer :Complications and Management

Duration: 60 minutes

Target: 5th Year MBBS Students

Objectives (2 minutes)

- Identify complications of corneal ulcer.
- Recognize early warning signs of severe disease.
- Outline investigations for complicated corneal ulcer.
- Discuss medical and surgical management.
- Understand prevention of vision loss.

Purpose (3 minutes)

To enable students to recognize and manage sight-threatening complications of corneal ulcer.

Prerequisite of Learning (2 minutes)

- Corneal anatomy and physiology
- Clinical features of infectious keratitis
- Slit-lamp examination

Teaching Contents (40 minutes)

- Pathogenesis of corneal ulcer complications
- Corneal thinning (descemetocoele)
- Corneal perforation
- Hypopyon
- Corneal scarring and vascularization
- Anterior synechiae and secondary glaucoma
- Complicated cataract
- Endophthalmitis and panophthalmitis
- Irregular astigmatism and permanent visual impairment
- Evaluation: visual acuity, slit-lamp examination, Seidel test, IOP (when safe), B-scan if media opaque
- Medical management
- Indications for tissue adhesive, bandage contact lens, amniotic membrane transplantation, therapeutic penetrating keratoplasty and evisceration/enucleation in selected cases
- Follow-up and prognosis

Teaching Methods

Interactive lecture, slit-lamp photographs, case-based discussion and question-answer session.

Teaching Materials

Laptop, projector, slit-lamp images, fluorescein strips, B-scan images and clinical videos.

Assessment (10 minutes)

- Oral questions
- Clinical image interpretation
- Case discussion
- Short quiz

Summary (3 minutes)

Review the complications, evaluation and management of corneal ulcer.

References

1. Kanski's Clinical Ophthalmology
2. AAO BCSC
3. Parsons' Diseases of the Eye
4. Khurana AK. Comprehensive Ophthalmology

Lesson Plan

Primary Angle-Closure Glaucoma

Duration: 60 minutes

Target: 5th Year MBBS Students

Objectives (2 minutes)

- Define primary angle-closure glaucoma (PACG).
- Describe the anatomy and pathophysiology of angle closure.
- Recognize risk factors and clinical features.
- Outline investigations and diagnosis.
- Discuss medical, laser and surgical management.

Purpose (3 minutes)

To enable MBBS students to recognize, diagnose and manage primary angle-closure glaucoma promptly to prevent irreversible blindness.

Prerequisite of Learning (2 minutes)

- Anterior chamber angle anatomy
- Aqueous humour dynamics
- Gonioscopy and optic disc examination

Teaching Contents (40 minutes)

- Definition and epidemiology of PACG
- Classification: PAC suspect (PACS), primary angle closure (PAC), primary angle-closure glaucoma (PACG)
- Risk factors: age, female sex, hyperopia, Asian ethnicity, family history
- Mechanisms: pupillary block, plateau iris, lens-related mechanisms
- Clinical features of acute and chronic PACG
- Diagnostic evaluation: visual acuity, IOP, slit-lamp examination, gonioscopy, optic disc assessment, OCT anterior segment, visual fields
- Differential diagnosis
- Emergency management of acute angle closure
- Laser peripheral iridotomy and iridoplasty
- Lens extraction and filtering surgery when indicated
- Long-term follow-up and prognosis

Teaching Methods

Interactive lecture, case discussion, gonioscopy demonstration, clinical photographs and question-answer session.

Teaching Materials

Laptop, projector, eye model, gonioscopy lens, OCT images and visual field reports.

Assessment (10 minutes)

- Oral questions
- Clinical image interpretation
- Case discussion
- Short quiz

Summary (3 minutes)

Review the classification, diagnosis and management of primary angle-closure glaucoma.

References

1. Kanski's Clinical Ophthalmology
2. AAO Basic and Clinical Science Course (BCSC)
3. Parsons' Diseases of the Eye
4. Khurana AK. Comprehensive Ophthalmology

Lesson Plan

Management of Squint (Strabismus)

Duration: 60 minutes

Target: 5th Year MBBS Students

Objectives (2 minutes)

- Define squint (strabismus) and its types.
- Describe the principles of evaluation.
- Discuss non-surgical and surgical management.
- Recognize amblyopia and its treatment.
- Understand follow-up and prognosis.

Purpose (3 minutes)

To enable students to diagnose and manage common forms of strabismus and prevent amblyopia and loss of binocular vision.

Prerequisite of Learning (2 minutes)

- Extraocular muscle anatomy
- Binocular vision
- Ocular motility examination

Teaching Contents (40 minutes)

- Definition and classification of squint
- Goals of treatment
- Comprehensive evaluation: history, visual acuity, refraction, ocular alignment, ocular motility, cover tests, prism measurements, sensory status
- Cycloplegic refraction and correction of refractive error
- Amblyopia management: occlusion therapy, atropine penalization, near visual activities
- Orthoptic exercises in selected cases
- Prism therapy
- Botulinum toxin injection: indications
- Surgical management: timing, recession, resection, transposition procedures, adjustable sutures
- Management of esotropia, exotropia, vertical deviations and paralytic squint
- Postoperative care, complications and long-term follow-up

Teaching Methods

Interactive lecture, case-based discussion, demonstration of cover tests and clinical photographs.

Teaching Materials

Projector, prism bar, occluder, synoptophore images and surgical videos.

Assessment (10 minutes)

- Oral questions
- Clinical case discussion
- OSCE station
- Short quiz

Summary (3 minutes)

Review evaluation, amblyopia therapy, non-surgical management and surgical principles of strabismus.

References

1. Kanski's Clinical Ophthalmology
2. AAO Basic and Clinical Science Course (BCSC)
3. Parsons' Diseases of the Eye
4. Khurana AK. Comprehensive Ophthalmology

Lesson Plan

Primary Open-Angle Glaucoma (POAG)

Duration: 60 minutes

Target: 5th Year MBBS Students

Objectives (2 minutes)

- Define POAG and describe its epidemiology.
- Explain risk factors and pathophysiology.
- Recognize clinical features and diagnostic evaluation.
- Outline medical, laser and surgical management.
- Emphasize lifelong follow-up.

Purpose (3 minutes)

To enable students to diagnose and manage primary open-angle glaucoma at an early stage to prevent irreversible visual loss.

Prerequisite of Learning (2 minutes)

- Aqueous humour dynamics
- Optic nerve head anatomy
- Tonometry and gonioscopy

Teaching Contents (40 minutes)

- Definition and epidemiology
- Risk factors: age, family history, elevated IOP, African ancestry, thin central cornea, myopia, diabetes
- Pathophysiology and optic nerve damage
- Clinical features
- Diagnostic evaluation: visual acuity, IOP, gonioscopy, optic disc examination, RNFL/OCT, visual field analysis, pachymetry
- Differential diagnosis
- Target IOP concept
- Medical management: prostaglandin analogues, beta-blockers, alpha-agonists, carbonic anhydrase inhibitors, rho-kinase inhibitors
- Laser trabeculoplasty
- Surgical management: trabeculectomy, glaucoma drainage devices, MIGS
- Follow-up, monitoring progression and patient counselling

Teaching Methods

Interactive lecture, case discussion, optic disc photographs, OCT and visual field interpretation.

Teaching Materials

Projector, eye model, Goldmann tonometer, gonioscopy lens, OCT and perimetry reports.

Assessment (10 minutes)

- Oral questions
- Clinical image interpretation
- Case discussion
- Short quiz

Summary (3 minutes)

Review the diagnosis, investigations, treatment and long-term monitoring of POAG.

References

5. Kanski's Clinical Ophthalmology
6. AAO Basic and Clinical Science Course (BCSC)
7. Parsons' Diseases of the Eye
8. Khurana AK. Comprehensive Ophthalmology

Lesson Plan

Diseases of the Optic Nerve

Duration: 60 minutes

Target: 5th Year MBBS Students

Objectives (2 minutes)

- Describe the anatomy and function of the optic nerve.
- Classify common optic nerve diseases.
- Recognize clinical features and diagnostic evaluation.
- Outline management principles of major optic neuropathies.
- Identify vision-threatening emergencies.

Purpose (3 minutes)

To provide MBBS students with a systematic approach to the diagnosis and management of optic nerve diseases.

Prerequisite of Learning (2 minutes)

- Optic nerve anatomy and visual pathway
- Pupillary reflexes
- Fundus examination

Teaching Contents (40 minutes)

- Overview and classification of optic nerve diseases
- Optic neuritis (typical and atypical)
- Anterior ischemic optic neuropathy (AION)
- Papilledema
- Optic atrophy
- Compressive optic neuropathy
- Toxic and nutritional optic neuropathy
- Hereditary optic neuropathies (e.g., Leber hereditary optic neuropathy)
- Clinical features: visual loss, RAPD, color vision defects, visual field defects
- Evaluation: visual acuity, color vision, pupillary examination, fundus examination, OCT RNFL, visual fields, MRI, laboratory tests as indicated
- Principles of management and referral
- Prognosis and follow-up

Teaching Methods

Interactive lecture, case-based discussion, fundus photographs, OCT interpretation and clinical scenarios.

Teaching Materials

Projector, eye model, fundus photographs, OCT RNFL scans, visual field reports and MRI images.

Assessment (10 minutes)

- Oral questions
- Clinical image interpretation
- Case discussion
- Short quiz

Summary (3 minutes)

Review the classification, diagnosis, investigations and management of common optic nerve diseases.

References

1. Kanski's Clinical Ophthalmology
2. AAO Basic and Clinical Science Course (BCSC)
3. Parsons' Diseases of the Eye
4. Khurana AK. Comprehensive Ophthalmology

Lesson Plan

Secondary Glaucoma

Duration: 60 minutes

Target: 5th Year MBBS Students

Objectives (2 minutes)

- Define secondary glaucoma and classify its types.
- Describe the causes and mechanisms of raised IOP.
- Recognize clinical features and investigations.
- Outline medical, laser and surgical management.
- Identify conditions requiring urgent referral.

Purpose (3 minutes)

To equip MBBS students with the knowledge to diagnose and manage secondary glaucomas and prevent irreversible optic nerve damage.

Prerequisite of Learning (2 minutes)

- Aqueous humour dynamics
- Gonioscopy
- Optic disc examination and tonometry

Teaching Contents (40 minutes)

- Definition and classification of secondary glaucoma
- Secondary open-angle glaucomas: pseudoexfoliation, pigmentary, steroid-induced, uveitic, traumatic, lens-particle, ghost cell, hemolytic, neovascular
- Secondary angle-closure glaucomas: phacomorphic, phacolytic, neovascular, malignant glaucoma, iridocorneal endothelial syndrome, peripheral anterior synechiae
- Etiology and pathophysiology
- Clinical features
- Diagnostic evaluation: visual acuity, IOP, slit-lamp examination, gonioscopy, optic disc assessment, OCT RNFL, visual field testing and relevant imaging
- Principles of management: treat the underlying cause, IOP-lowering medications
- Laser treatment when indicated
- Surgical management: trabeculectomy, glaucoma drainage devices, cyclodestructive procedures
- Complications, prognosis and follow-up

Teaching Methods

Interactive lecture, case-based discussion, gonioscopy demonstration and clinical image review.

Teaching Materials

Projector, eye model, Goldmann tonometer, gonioscopy lens, OCT images and visual field reports.

Assessment (10 minutes)

- Oral questions
- Clinical case discussion
- Image interpretation
- Short quiz

Summary (3 minutes)

Review the classification, diagnosis and management of secondary glaucoma.

References

1. Kanski's Clinical Ophthalmology
2. AAO Basic and Clinical Science Course (BCSC)
3. Parsons' Diseases of the Eye
4. Khurana AK. Comprehensive Ophthalmology

Lesson Plan

Congenital (Infantile) Glaucoma

Duration: 60 minutes

Target: 5th Year MBBS Students

Objectives (2 minutes)

- Define congenital (infantile) glaucoma and classify it.
- Describe its etiology and pathophysiology.
- Recognize clinical features and diagnostic evaluation.
- Outline medical and surgical management.
- Emphasize early diagnosis and lifelong follow-up.

Purpose (3 minutes)

To provide MBBS students with the knowledge required to diagnose and manage congenital glaucoma promptly to preserve vision.

Prerequisite of Learning (2 minutes)

- Anterior chamber angle anatomy
- Aqueous humour dynamics
- Pediatric ocular examination

Teaching Contents (40 minutes)

- Definition and classification: primary congenital, infantile and juvenile glaucoma
- Embryology and developmental angle anomalies
- Etiology, genetics and risk factors
- Pathophysiology
- Clinical features: epiphora, photophobia, blepharospasm, enlarged cornea (buphthalmos), corneal edema, Haab striae, optic disc cupping
- Diagnostic evaluation: IOP, corneal diameter, pachymetry, gonioscopy, optic nerve assessment, examination under anesthesia
- Differential diagnosis
- Medical treatment as a temporary measure
- Surgical management: goniotomy, trabeculotomy, trabeculectomy, combined procedures, glaucoma drainage devices
- Postoperative care, complications, prognosis and long-term follow-up

Teaching Methods

Interactive lecture, pediatric case discussion, clinical photographs and surgical videos.

Teaching Materials

Projector, pediatric eye model, gonioscopy images, OCT/optic disc photographs and examination instruments.

Assessment (10 minutes)

- Oral questions
- Clinical image interpretation
- Case discussion
- Short quiz

Summary (3 minutes)

Review the classification, diagnosis, investigations and management of congenital (infantile) glaucoma.

References

1. Kanski's Clinical Ophthalmology
2. AAO Basic and Clinical Science Course (BCSC)
3. Parsons' Diseases of the Eye
4. Khurana AK. Comprehensive Ophthalmology

Lesson Plan

Ocular Emergencies

Duration: 60 minutes

Target: 5th Year MBBS Students

Objectives (2 minutes)

- Identify common ocular emergencies.
- Perform initial assessment and triage.
- Outline emergency management and referral.
- Recognize vision-threatening conditions requiring urgent intervention.

Purpose (3 minutes)

To equip MBBS students with the knowledge and skills to promptly recognize and manage ophthalmic emergencies to preserve vision.

Prerequisite of Learning (2 minutes)

- Basic ocular anatomy
- Visual acuity assessment
- Slit-lamp examination principles

Teaching Contents (40 minutes)

- Definition and principles of ocular emergencies
- History taking and emergency eye examination
- Chemical eye injuries
- Open globe injury and ocular trauma
- Acute angle-closure glaucoma
- Central retinal artery occlusion
- Retinal detachment
- Endophthalmitis
- Corneal ulcer and microbial keratitis
- Orbital cellulitis
- Acute optic neuritis
- Hyphema
- Emergency investigations and imaging
- Initial medical management, referral protocols and patient counselling

Teaching Methods

Interactive lecture, case-based discussion, emergency scenarios, clinical photographs and videos.

Teaching Materials

Projector, slit-lamp images, fluorescein strips, eye model, CT/B-scan examples.

Assessment (10 minutes)

- Oral questions
- OSCE station
- Clinical image interpretation
- Short quiz

Summary (3 minutes)

Review the recognition, immediate management and referral of common ocular emergencies.

References

1. Kanski's Clinical Ophthalmology
2. AAO Basic and Clinical Science Course (BCSC)
3. Parsons' Diseases of the Eye
4. Khurana AK. Comprehensive Ophthalmology

Lesson Plan

Diseases of the Retina

Duration: 60 minutes

Target: 5th Year MBBS Students

Objectives (2 minutes)

- Describe the anatomy and function of the retina.
- Classify common retinal diseases.
- Recognize clinical features and investigations.
- Outline principles of medical and surgical management.
- Identify retinal emergencies requiring urgent referral.

Purpose (3 minutes)

To provide MBBS students with a comprehensive overview of common retinal diseases, their diagnosis, treatment and prevention of visual loss.

Prerequisite of Learning (2 minutes)

- Retinal anatomy and physiology
- Fundus examination
- Basic ophthalmic imaging

Teaching Contents (40 minutes)

- Overview and classification of retinal diseases
- Diabetic retinopathy
- Hypertensive retinopathy
- Retinal vein occlusion (CRVO and BRVO)
- Retinal artery occlusion (CRAO and BRAO)
- Age-related macular degeneration
- Central serous chorioretinopathy
- Retinal detachment
- Retinitis pigmentosa and inherited retinal dystrophies
- Macular hole and epiretinal membrane
- Investigations: fundus photography, OCT, fluorescein angiography, OCT angiography, B-scan ultrasonography
- Management: laser photocoagulation, intravitreal anti-VEGF, corticosteroids, vitrectomy and patient follow-up

Teaching Methods

Interactive lecture, case-based discussion, fundus photograph interpretation and OCT review.

Teaching Materials

Projector, fundus camera images, OCT scans, fluorescein angiograms and B-scan images.

Assessment (10 minutes)

- Oral questions
- Clinical image interpretation
- Case discussion
- Short quiz

Summary (3 minutes)

Review the classification, diagnosis, investigations and management of common retinal diseases.

References

1. Kanski's Clinical Ophthalmology
2. AAO Basic and Clinical Science Course (BCSC)
3. Parsons' Diseases of the Eye
4. Khurana AK. Comprehensive Ophthalmology

Lesson Plan

Ocular Injuries (Ocular Trauma)

Duration: 60 minutes

Target: 5th Year MBBS Students

Objectives (2 minutes)

- Define and classify ocular trauma.
- Recognize common clinical presentations of ocular injuries.
- Describe appropriate investigations and emergency management.
- Identify indications for urgent referral and surgery.

Purpose (3 minutes)

To enable MBBS students to recognize, evaluate and initiate management of ocular injuries to prevent permanent visual loss.

Prerequisite of Learning (2 minutes)

- Basic ocular anatomy
- Visual acuity assessment
- Slit-lamp examination
- Ocular emergency principles

Teaching Contents (40 minutes)

- Definition and epidemiology of ocular trauma
- Classification: closed globe and open globe injuries (BETT classification)
- Mechanical injuries: corneal abrasion, foreign body, laceration, globe rupture
- Chemical injuries: acid and alkali burns
- Thermal and radiation injuries
- Blunt trauma: hyphema, lens dislocation, angle recession, retinal injury
- Penetrating, perforating and intraocular foreign body injuries
- History taking and ocular examination
- Investigations: Seidel test, fluorescein staining, X-ray, CT orbit, B-scan ultrasonography (when appropriate)
- Emergency management: eye shield, analgesia, tetanus prophylaxis, systemic/topical antibiotics, immediate irrigation for chemical injury
- Surgical management and indications
- Complications, prognosis, prevention and follow-up

Teaching Methods

Interactive lecture, case-based discussion, trauma photographs, videos and emergency management demonstrations.

Teaching Materials

Projector, slit-lamp images, fluorescein strips, eye shield, CT/B-scan images and ocular models.

Assessment (10 minutes)

- Oral questions
- OSCE station
- Clinical image interpretation
- Case discussion
- Short quiz

Summary (3 minutes)

Review the classification, diagnosis, emergency management and prevention of ocular injuries.

References

1. Kanski's Clinical Ophthalmology
2. AAO Basic and Clinical Science Course (BCSC)
3. Parsons' Diseases of the Eye
4. Khurana AK. Comprehensive Ophthalmology

Lesson Plan

Intraocular Tumours

Duration: 60 minutes

Target: 5th Year MBBS Students

Objectives (2 minutes)

- Describe the classification of intraocular tumours.
- Recognize the clinical features of common benign and malignant intraocular tumours.
- Discuss appropriate investigations.
- Outline principles of management and follow-up.

Purpose (3 minutes)

To enable MBBS students to diagnose common intraocular tumours early and understand current management strategies.

Prerequisite of Learning (2 minutes)

- Ocular anatomy
- Fundus examination
- Basic ocular imaging

Teaching Contents (40 minutes)

- Definition and classification of intraocular tumours
- Benign tumours: choroidal nevus, retinal hamartoma, choroidal hemangioma
- Malignant tumours: retinoblastoma, uveal (choroidal, ciliary body and iris) melanoma, intraocular lymphoma and ocular metastasis
- Risk factors and pathophysiology
- Clinical features and differential diagnosis
- Investigations: indirect ophthalmoscopy, fundus photography, OCT, fundus fluorescein angiography, ultrasonography (A- and B-scan), CT/MRI when indicated
- Management: observation, laser therapy, cryotherapy, plaque brachytherapy, transpupillary thermotherapy, chemotherapy, radiotherapy, enucleation and multidisciplinary care
- Complications, prognosis and follow-up

Teaching Methods

Interactive lecture, case-based discussion, fundus photograph interpretation and ocular imaging review.

Teaching Materials

Projector, fundus photographs, OCT, B-scan images, CT/MRI examples and eye model.

Assessment (10 minutes)

- Oral questions
- Image interpretation
- Case discussion
- Short quiz

Summary (3 minutes)

Review the diagnosis, investigations and management of common intraocular tumours.

References

1. Kanski's Clinical Ophthalmology
2. AAO Basic and Clinical Science Course (BCSC)
3. Parsons' Diseases of the Eye
4. Khurana AK. Comprehensive Ophthalmology

Lesson Plan

Ocular Chemical Injuries

Duration: 60 minutes

Target: 5th Year MBBS Students

Objectives (2 minutes)

- Define ocular chemical injuries and classify them.
- Differentiate acid and alkali burns.
- Recognize clinical features and severity grading.
- Describe emergency management and definitive treatment.
- Prevent long-term visual complications.

Purpose (3 minutes)

To enable MBBS students to rapidly recognize and manage ocular chemical injuries, minimizing ocular morbidity and vision loss.

Prerequisite of Learning (2 minutes)

- Corneal and conjunctival anatomy
- Ocular surface physiology
- Principles of ocular emergencies

Teaching Contents (40 minutes)

- Definition and epidemiology of chemical eye injuries
- Classification: acid burns and alkali burns
- Pathophysiology and mechanism of tissue damage
- Severity grading (Roper-Hall and Dua classifications)
- Clinical features and complications
- Emergency management: immediate copious irrigation, pH testing, removal of particulate matter
- Medical management: topical antibiotics, cycloplegics, corticosteroids, lubricants, vitamin C, doxycycline, antiglaucoma medications when indicated
- Surgical management: amniotic membrane transplantation, limbal stem cell transplantation, keratoplasty
- Follow-up, prognosis and prevention

Teaching Methods

Interactive lecture, case-based discussion, clinical photographs and emergency management demonstration.

Teaching Materials

Projector, slit-lamp photographs, fluorescein strips, pH paper, eye irrigation set and ocular models.

Assessment (10 minutes)

- Oral questions
- Clinical image interpretation
- Case discussion
- Short quiz

Summary (3 minutes)

Review the classification, emergency management, definitive treatment and prevention of ocular chemical injuries.

References

1. Kanski's Clinical Ophthalmology
2. AAO Basic and Clinical Science Course (BCSC)
3. Parsons' Diseases of the Eye
4. Khurana AK. Comprehensive Ophthalmology

Lesson Plan

Diseases of the Orbit

Duration: 60 minutes

Target: 5th Year MBBS Students

Objectives (2 minutes)

- Describe the anatomy and applied anatomy of the orbit.
- Classify common orbital diseases.
- Recognize clinical features and investigations.
- Outline medical and surgical management.
- Identify orbital emergencies requiring urgent referral.

Purpose (3 minutes)

To provide MBBS students with a systematic approach to the diagnosis and management of common orbital diseases.

Prerequisite of Learning (2 minutes)

- Orbital anatomy
- Ocular motility
- Basic ophthalmic examination

Teaching Contents (40 minutes)

- Applied anatomy of the orbit
- Classification of orbital diseases
- Orbital cellulitis and preseptal cellulitis
- Thyroid eye disease (Graves orbitopathy)
- Idiopathic orbital inflammatory disease (orbital pseudotumor)
- Proptosis: causes and evaluation
- Orbital fractures and blow-out fractures
- Orbital tumors: benign and malignant
- Vascular lesions: capillary hemangioma, cavernous hemangioma, lymphangioma, carotid-cavernous fistula
- Investigations: Hertel exophthalmometry, ocular motility, CT scan, MRI, ultrasonography, biopsy when indicated
- Medical management, surgical management and multidisciplinary care
- Complications, prognosis and follow-up

Teaching Methods

Interactive lecture, case-based discussion, orbital imaging interpretation and clinical photographs.

Teaching Materials

Projector, orbital models, CT/MRI images, clinical photographs and Hertel exophthalmometer.

Assessment (10 minutes)

- Oral questions
- Clinical image interpretation
- Case discussion
- Short quiz

Summary (3 minutes)

Review the classification, diagnosis, investigations and management of common orbital diseases.

References

1. Kanski's Clinical Ophthalmology
2. AAO Basic and Clinical Science Course (BCSC)
3. Parsons' Diseases of the Eye
4. Khurana AK. Comprehensive Ophthalmology

Lesson Plan

Thyroid Eye Disease (TED)

Duration: 60 minutes

Target: 5th Year MBBS Students

Objectives (2 minutes)

- Define thyroid eye disease (TED) and describe its epidemiology.
- Explain the pathophysiology and risk factors.
- Recognize clinical features and severity.
- Discuss investigations and management.
- Identify sight-threatening TED requiring urgent treatment.

Purpose (3 minutes)

To provide MBBS students with a systematic approach to the diagnosis, assessment and management of thyroid eye disease.

Prerequisite of Learning (2 minutes)

- Orbital anatomy
- Extraocular muscle anatomy
- Basic ophthalmic examination

Teaching Contents (40 minutes)

- Definition and epidemiology
- Etiology, autoimmune pathogenesis and risk factors (smoking, Graves' disease)
- Clinical features: lid retraction, proptosis, lid lag, conjunctival congestion, exposure keratopathy, diplopia, restrictive strabismus, compressive optic neuropathy
- Assessment: Clinical Activity Score (CAS), severity classification (EUGOGO principles)
- Investigations: thyroid function tests, thyroid antibodies, Hertel exophthalmometry, color vision, visual fields, OCT RNFL when indicated, CT/MRI orbit
- Medical management: lubrication, smoking cessation, selenium (selected patients), corticosteroids, immunomodulatory therapy
- Orbital radiotherapy: indications
- Surgical management: orbital decompression, strabismus surgery, eyelid surgery
- Complications, prognosis and follow-up

Teaching Methods

Interactive lecture, case-based discussion, clinical photographs and orbital imaging review.

Teaching Materials

Projector, orbital CT/MRI images, Hertel exophthalmometer, clinical photographs and eye model.

Assessment (10 minutes)

- Oral questions
- Case discussion
- Clinical image interpretation
- Short quiz

Summary (3 minutes)

Review the diagnosis, assessment and management of thyroid eye disease, emphasizing sight-threatening complications.

References

1. Kanski's Clinical Ophthalmology
2. AAO Basic and Clinical Science Course (BCSC)
3. Parsons' Diseases of the Eye
4. Khurana AK. Comprehensive Ophthalmolog

Lesson Plan

Diabetic Retinopathy

Duration: 60 minutes

Target: 5th Year MBBS Students

Objectives (2 minutes)

- Define diabetic retinopathy (DR) and explain its epidemiology.
- Classify DR and diabetic macular edema (DME).
- Recognize clinical features and investigations.
- Outline screening, treatment and prevention of visual loss.

Purpose (3 minutes)

To provide MBBS students with a systematic approach to the diagnosis, classification, screening and management of diabetic retinopathy.

Prerequisite of Learning (2 minutes)

- Retinal anatomy
- Fundus examination
- Basic ocular imaging

Teaching Contents (40 minutes)

- Definition and epidemiology of diabetic retinopathy
- Risk factors and pathophysiology
- Classification: Non-proliferative diabetic retinopathy (NPDR), Proliferative diabetic retinopathy (PDR), and Diabetic macular edema (DME)
- Clinical features and fundus findings: microaneurysms, hemorrhages, hard exudates, cotton wool spots, venous beading, IRMA, neovascularization
- Investigations: visual acuity, dilated fundus examination, fundus photography, OCT, fluorescein angiography (FFA), OCT angiography (OCTA) when indicated
- Screening recommendations and follow-up intervals
- Management: systemic control (blood glucose, blood pressure, lipids), laser photocoagulation, intravitreal anti-VEGF therapy, intravitreal steroids, pars plana vitrectomy
- Complications, prognosis and patient education

Teaching Methods

Interactive lecture, case-based discussion, fundus photograph interpretation and OCT/FFA review.

Teaching Materials

Projector, fundus photographs, OCT scans, FFA images, retinal models and clinical cases.

Assessment (10 minutes)

- Oral questions
- Clinical image interpretation
- Case discussion
- Short quiz

Summary (3 minutes)

Review the classification, screening, diagnosis and management of diabetic retinopathy.

References

1. Kanski's Clinical Ophthalmology
2. AAO Basic and Clinical Science Course (BCSC)
3. Parsons' Diseases of the Eye
4. Khurana AK. Comprehensive Ophthalmology

Lesson Plan

Blindness and Its Prevention

Duration: 60 minutes

Target: 5th Year MBBS Students

Objectives (2 minutes)

- Define blindness and visual impairment using WHO terminology.
- Describe the major causes of blindness globally and in developing countries.
- Explain strategies for prevention of avoidable blindness.
- Recognize national and global blindness control initiatives.

Purpose (3 minutes)

To provide MBBS students with an understanding of the epidemiology, causes, prevention, and public health importance of blindness.

Prerequisite of Learning (2 minutes)

- Basic ophthalmic examination
- Common eye diseases
- Principles of community ophthalmology

Teaching Contents (40 minutes)

- Definitions of blindness, visual impairment, and low vision (WHO)
- Magnitude and epidemiology of blindness
- Causes of blindness: cataract, refractive errors, glaucoma, diabetic retinopathy, corneal blindness, age-related macular degeneration, childhood blindness, optic nerve diseases
- Avoidable versus unavoidable blindness
- Screening and early detection
- Strategies for prevention: cataract surgery, refractive services, diabetic retinopathy screening, glaucoma detection, vitamin A supplementation, measles immunization, ROP screening, eye injury prevention
- Vision 2020 and integrated people-centred eye care (IPEC) concepts
- National Programme for Control of Blindness and community eye health
- Rehabilitation: low vision services, assistive devices, education and social support

Teaching Methods

Interactive lecture, case discussions, community eye health examples, and audiovisual presentation.

Teaching Materials

Projector, WHO blindness statistics, fundus photographs, posters, and community screening materials.

Assessment (10 minutes)

- Oral questions
- Short quiz
- Case discussion
- Community ophthalmology scenario

Summary (3 minutes)

Review the causes of blindness, public health strategies, and measures to prevent avoidable blindness.

References

1. Kanski's Clinical Ophthalmology
2. AAO Basic and Clinical Science Course (BCSC)
3. Parsons' Diseases of the Eye
4. Khurana AK. Comprehensive Ophthalmology
5. World Health Organization (WHO) eye care resources

Lesson Plan

Hypertensive Retinopathy

Duration: 60 minutes

Target: 5th Year MBBS Students

Objectives (2 minutes)

- Define hypertensive retinopathy and explain its pathophysiology.
- Classify hypertensive retinopathy using standard grading systems.
- Recognize clinical features and retinal signs.
- Outline investigations, management, and prevention of visual loss.

Purpose (3 minutes)

To enable MBBS students to diagnose hypertensive retinopathy, assess its severity, and understand its systemic implications.

Prerequisite of Learning (2 minutes)

- Retinal anatomy
- Fundus examination
- Systemic hypertension

Teaching Contents (40 minutes)

- Definition and epidemiology
- Etiology and pathophysiology
- Classification: Keith-Wagener-Barker and Scheie classifications
- Clinical features and fundus findings: arteriolar narrowing, AV nicking, copper/silver wiring, flame-shaped hemorrhages, cotton wool spots, hard exudates, macular star, optic disc edema
- Malignant hypertension and hypertensive choroidopathy
- Differential diagnosis
- Investigations: visual acuity, blood pressure measurement, dilated fundus examination, fundus photography, OCT, fluorescein angiography when indicated
- Management: blood pressure control, treatment of systemic disease, ocular monitoring
- Complications, prognosis, follow-up, and patient counselling

Teaching Methods

Interactive lecture, case-based discussion, fundus photograph interpretation, and OCT review.

Teaching Materials

Projector, fundus photographs, OCT images, retinal models, and clinical case scenarios.

Assessment (10 minutes)

- Oral questions
- Clinical image interpretation
- Case discussion
- Short quiz

Summary (3 minutes)

Review the grading, diagnosis, systemic significance, and management of hypertensive retinopathy.

References

1. Kanski's Clinical Ophthalmology
2. AAO Basic and Clinical Science Course (BCSC)
3. Parsons' Diseases of the Eye
4. Khurana AK. Comprehensive Ophthalmology

Lesson Plan

Ocular Pharmacology

Duration: 60 minutes

Target: 5th Year MBBS Students

Objectives (2 minutes)

- Describe the principles of ocular pharmacology.
- Classify commonly used ophthalmic drugs.
- Explain indications, mechanisms, adverse effects, and contraindications.
- Prescribe ophthalmic medications safely and rationally.

Purpose (3 minutes)

To provide MBBS students with a comprehensive understanding of commonly used ophthalmic drugs and their rational clinical use.

Prerequisite of Learning (2 minutes)

- Basic ocular anatomy and physiology
- Principles of pharmacology
- Common ophthalmic diseases

Teaching Contents (40 minutes)

- Principles of ocular drug delivery and pharmacokinetics
- Routes of administration: topical, periocular, intraocular, systemic
- Mydriatics and cycloplegics
- Miotics and antiglaucoma medications
- Topical and systemic antibiotics
- Antiviral and antifungal agents
- Topical corticosteroids and NSAIDs
- Antiallergic medications and lubricants
- Local anesthetics and dyes
- Intravitreal drugs: anti-VEGF agents and corticosteroids
- Adverse drug reactions, contraindications, drug interactions, and rational prescribing

Teaching Methods

Interactive lecture, prescription exercises, case-based discussion, and drug chart review.

Teaching Materials

Projector, ophthalmic drug charts, sample eye drop bottles, clinical cases, and prescribing guidelines.

Assessment (10 minutes)

- Oral questions
- Prescription writing exercise
- Case discussion
- Short quiz

Summary (3 minutes)

Review the classification, indications, mechanisms of action, adverse effects, and safe prescribing of ophthalmic medications.

References

1. Kanski's Clinical Ophthalmology
2. AAO Basic and Clinical Science Course (BCSC)
3. Parsons' Diseases of the Eye
4. Khurana AK. Comprehensive Ophthalmology
5. Katzung's Basic & Clinical Pharmacology

Lesson Plan

Ophthalmic Surgical Instruments

Duration: 60 minutes

Target: 5th Year MBBS Students

Objectives (2 minutes)

- Identify commonly used ophthalmic surgical instruments.
- Describe their indications and functions.
- Differentiate instruments used in cataract, glaucoma, corneal and retinal surgery.
- Demonstrate principles of handling, sterilization and instrument care.

Purpose (3 minutes)

To familiarize MBBS students with the identification, uses and safe handling of common ophthalmic surgical instruments.

Prerequisite of Learning (2 minutes)

- Basic ocular anatomy
- Principles of asepsis and sterilization
- Basic ophthalmic surgical procedures

Teaching Contents (40 minutes)

- Classification of ophthalmic surgical instruments
- Basic instruments: lid speculum, fixation forceps, toothed and non-toothed forceps, scissors, needle holders
- Incision instruments: keratome, crescent blade, MVR blade, paracentesis knife
- Cataract surgery instruments: cystotome, capsulorhexis forceps, hydrodissection cannula, chopper, irrigating vectis, Simcoe I/A cannula, phaco handpiece
- Glaucoma surgery instruments: Kelly punch, trabeculectomy instruments
- Corneal surgery instruments: trephine, corneal scissors, spatulas
- Vitreoretinal surgery instruments: vitrectomy cutter, endolaser probe, light pipe, microforceps
- Sutures and microsurgical needles
- Sterilization, maintenance and operating room safety

Teaching Methods

Interactive lecture, instrument demonstration, operating microscope demonstration and case-based discussion.

Teaching Materials

Operating microscope, ophthalmic instrument tray, surgical videos, projector and labeled photographs.

Assessment (10 minutes)

- Instrument identification viva
- OSCE station
- Short quiz
- Practical demonstration

Summary (3 minutes)

Review the identification, uses, handling and maintenance of common ophthalmic surgical instruments.

References

1. Kanski's Clinical Ophthalmology
2. Parsons' Diseases of the Eye
3. Khurana AK. Comprehensive Ophthalmology
4. AAO Basic and Clinical Science Course (BCSC)

Lesson Plan

Common Eye Surgeries

Duration: 60 minutes

Target: 5th Year MBBS Students

Objectives (2 minutes)

- Identify common ophthalmic surgical procedures.
- Describe indications, basic principles and complications of common eye surgeries.
- Understand preoperative and postoperative patient care.
- Recognize situations requiring urgent surgical referral.

Purpose (3 minutes)

To familiarize MBBS students with the indications, principles, and outcomes of commonly performed ophthalmic surgeries.

Prerequisite of Learning (2 minutes)

- Basic ocular anatomy
- Common ophthalmic diseases
- Principles of asepsis and sterilization

Teaching Contents (40 minutes)

- Principles of ophthalmic surgery and microsurgery
- Preoperative assessment and informed consent
- Cataract surgery: ECCE, SICS and phacoemulsification with IOL implantation
- Glaucoma surgery: trabeculectomy and glaucoma drainage devices
- Corneal surgery: corneal suturing, keratoplasty and amniotic membrane transplantation
- Lacrimal surgery: dacryocystorhinostomy (DCR)
- Eyelid surgery: entropion, ectropion and ptosis repair
- Strabismus surgery
- Vitreoretinal surgery: pars plana vitrectomy, scleral buckle and intravitreal injection
- Ocular trauma surgery: corneal/scleral tear repair and intraocular foreign body management
- Postoperative care, complications and follow-up

Teaching Methods

Interactive lecture, surgical videos, case-based discussion and instrument demonstration.

Teaching Materials

Operating microscope, surgical instruments, videos, projector and clinical photographs.

Assessment (10 minutes)

- Oral questions
- OSCE station
- Case discussion
- Short quiz

Summary (3 minutes)

Review the indications, basic steps and postoperative care of common ophthalmic surgeries.

References

1. Kanski's Clinical Ophthalmology
2. AAO Basic and Clinical Science Course (BCSC)
3. Parsons' Diseases of the Eye
4. Khurana AK. Comprehensive Ophthalmology