

Acquired Optic Neuropathies

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GOAL

The goal of this presentation is to provide the participant with useful clinical information in the diagnosis and treatment of acquired optic nerve disorders.

OBJECTIVES

At the conclusion of this course, the participant should be able to:

1. Discuss the functional anatomy of the optic nerve.
2. Describe the most common diseases of the optic nerve.
3. Diagnose and manage optic nerve conditions, using laboratory testing and neuro-imaging when necessary.
4. Apply new knowledge about the pathogenesis and work-up of these optic neuropathies.
5. Apply new knowledge about the treatment and management of diseases of the optic nerve.

ABSTRACT

The primary eye care provider plays a crucial role in the diagnosis and treatment of conditions that can result in significant vision loss or even loss of life. Diseases of the optic nerve frequently fit into these categories. Covered topics include demyelinating, ischemic, compressive, inflammatory, and infectious optic neuropathies.

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Course Outline

Anatomy and Physiology of the Optic Nerve

- Functional Anatomy of the Optic Nerve
 - Intraocular Optic Nerve
 - Nerve Fiber Layer
 - Lamina Choroidalis
 - Lamina Cribosa
 - Intraorbital Optic Nerve
 - Intracanalicular Optic Nerve
 - Intracranial Optic Nerve
- Axonal Physiology

Clinical Testing of Optic Nerve Function

- Evaluation of the Patient
 - History Taking
 - Visual Activity
 - Visual Field
 - Color Vision
 - Brightness Comparison
 - Pupillary Testing
 - Photostress Recovery Test
 - Contrast Sensitivity
 - Opthmamoscopy
 - Electrophysiology
 - Imaging Studies

Papilledema

- Pathogenesis of Papilledema
 - Ophthalmoscopic Findings
- Classification of the Papilledema
 - Early Papilledema
 - Fully Developed Papilledema
 - Chronic Papilledema
 - Post-papilledema Optic Atrophy
- Associated Clinical Features
 - Visual Symptoms
 - Visual Acuity
 - Visual Field Defects
 - Pupillary Function
 - Diplopia
- Visual Prognosis
- Foster Kennedy Syndrome
- Neurologic Symptoms
- Causes of Papilledema
- Patient Evaluation
- Idiopathic Intracranial Hypertension
- Management of Papilledema

Optic Neuritis

- Clinical Features
 - Visual Symptoms

- Color Vision
- Pupillary Function
- Visual Field Defects
- Optic Disc Abnormalities
- Uhthoff's Symptom
- Visual Evoked Response
- Neuroimaging Abnormalities
- Optic Neuritis and Multiple Sclerosis
- Optic Neuritis Treatment Trial
- The CHAMPS Trial
- Differential Diagnosis
 - Demyelinating Disorders
 - Infectious Agents
 - Intraocular Inflammation
 - Systemic Diseases

Ischemic Optic Neuropathy

- Non-arteritic Anterior Ischemic Optic Neuropathy
 - "Idiopathic" NAION
 - Risk Factors
 - Clinical Characteristics
 - Progressive Disease
 - Recurrent and Sequential Disease
 - Visual Acuity Outcome
 - Treatment
 - Atypical Features
 - Differential Diagnosis
 - Non-arteritic Anterior Ischemic Optic Neuropathy Attributable to a Specific Condition
 - Post-cataract Extraction
 - Amiodarone Toxicity
 - Sildenafil Toxicity
 - Embolic Occlusion
 - Hypotension
 - Uremia
 - Diabetic Papillopathy
 - Migraine
- Arteritic Anterior Ischemic Optic Neuropathy
 - Giant Cell Arteritis
 - Clinical Features
 - Serologic Markers
 - Treatment
 - Temporal Artery Biopsy
 - Posterior Ischemic Optic Neuropathy

Compression of the Anterior Visual Pathways

- Causes of Compressive Optic Neuropathy
- Symptoms of Compressive Optic Neuropathy
- Signs of Compressive Optic Neuropathy
 - Optic Disc Findings
- Patient Evaluation
- Glioma
 - Optic Nerve Glioma
 - Clinical Features
 - Histopathology

- Natural History
 - Management Options
- Craniopharyngioma
 - Clinical Features
 - Histopathology
 - Management Options
- Pituitary Adenoma
 - Clinical Features
 - Visual Signs
 - Endocrine Signs
 - Neuroimaging
 - Management Options
 - Therapy of Prolactinoma
 - Therapy of Other Secreting Tumors
 - Therapy of Nonsecreting Tumors
 - Adverse Outcomes
- Meningioma
 - Suprasellar Meningioma
 - Clinical Features
 - Neuroimaging
 - Management Options
 - Optic Nerve Sheath Meningioma
 - Clinical Features
 - Neuroimaging
 - Management Options
- Intracranial Aneurysm
 - Clinical Features
 - Neuroimaging
 - Management Options

Developmental and Hereditary Optic Nerve Disorders

- Developmental Optic Nerve Disorders
 - Anomalous Elevation of the Optic Nerve, or Pseudopapilledema
 - Optic Nerve Hypoplasia
 - Superior Segmental Optic Hypoplasia
 - Hemiopic Hypoplasia
 - Coloboma
 - Optic Pit
 - Tilted Disc
 - Morning-Glory Syndrome
 - Astrocytic Hamartoma
 - Melanocytoma
- Hereditary Optic Neuropathies
 - Dominant Optic Atrophy
 - Recessive Optic Atrophy
 - Leber's Hereditary Optic Neuropathy
 - Neurologic Syndromes
 - Metabolic Disease

Miscellaneous Optic Neuropathies

- Radiation Optic Neuropathy
- Neuroretinitis
- Carcinomatous Optic Neuropathy
- Diabetic Papillopathy
- Papillophlebitis

- Optic Perineuritis
- Autoimmune-Related Retinopathy and Optic Neuropathy Syndrome (AARON)
- Non-glaucomatous Optic Disc Cupping