

## **A Deeper Look into the Eye: New Insights on the Choroid**

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### **Course Description:**

Using case presentations, this course will provide the most up-to-date information on choroidal diseases.

### **Goal:**

Provide attendees with recent developments in the early diagnostic strategies and therapeutic advances each choroidal disorders and discuss integration of these innovations into clinical practice.

### **Learning Objectives:**

At the conclusion of this course, attendees should be better able to effectively:

1. Know the variable clinical findings and presentations of the entities presented.
2. Appreciate the latest technologies in early diagnosis of each condition, including multi-modal imaging with SD-OCT, OCT-A, FA, IGCA, and fundus autofluorescence (FAF), and ultrawide field imaging.
3. Understand the current therapeutic strategies for each choroidal disorder.
4. Discuss the latest in the management of each clinical entity.

### **Abstract:**

The high prevalence and wide spectrum of choroidal disease makes these disorders a frequently encounter by optometrist in all patient's age group. Therefore, proper recognition and diagnosis as well as proper management of these conditions is essential. This lecture is a review of demography, clinical findings, clinical course, and proper management of the most common of these conditions.

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## **Course Outline**

### **I. Introduction**

- Anatomic Features of the Choroid
  - Five Layers
    - Bruch Membrane
    - Ruysch Layer (Choriocapillaris)
    - Sattler's Layer (Layer of medium diameter blood vessels)
    - Haller's Layer (Layer of large diameter blood vessels)
    - Suprachoroidal (Transitional zone between choroid and sclera)
- Diagnostic Imaging
  - Fundus photography
  - Fundus Autofluorescence
  - OCT (OCTA)
  - Enhance Depth Imaging (EDI)
  - FA and ICG
- Disease of the Choroid
  - Inherited
  - Degenerative
  - Tumors
  - Miscellaneous

### **II. Inherited Choroidal Disease**

- Central areolar choroidal dystrophy
  - Demography, etiology, and pathophysiology
  - DDX AMD
  - Clinical Findings
  - Clinical Course
- Choroideremia
  - Demography, etiology, and pathophysiology
  - Clinical Findings
  - Clinical Course
  - Gene therapy- Voretigene neparvovec-rzyl (Luxturna™)

### **III. Degenerative**

- Choroidal neovascular membrane (CNVM)
  - Clinical Findings
  - Clinical Course
  - Latest Treatment

- Pachychoroid disease spectrum (PDS)
  - Pachychoroid pigment epitheliopathy (PPE)
  - Central serous chorioretinopathy (CSC)
  - Pachychoroid neovascularopathy (PNV)
  - Polypoidal choroidal vasculopathy
  - Focal choroidal excavation (FCE)
  - Peripapillary pachychoroid syndrome (PPS)
- Clinical Findings
  - Common features
    - Reduced fundus tessellations
    - Subfoveal choroidal thickness (SFCT) of >300 μm
    - Dilated veins (pachyvessels) in the Haller's layer
    - Thinning of the choriocapillaris and Sattler's layers
  - Clinical Course

#### **IV. Choroidal Nevus / Melanoma**

- Risk Factors and Demographics
- Case presentation
- Clinical Findings
  - Signs that increase the risk includes- MOLES vs TFSOM (thickness, fluid, symptoms, orange pigment & margins near the nerve) guidelines that may be associated with a small melanoma.
  - Worse prognostic indicator is orange pigment (lipofuscin)
    - Crack-like dehiscence of Bruch membrane
      - With deposition of calcium, magnesium, or iron salts due to disturbed metabolism
      - Differential diagnoses
        - Lacquer cracks
        - Choroidal rupture
    - Value of OCT vs FAF vs ultrasonography vs others
  - Management

#### **V. Miscellaneous**

- Inflammatory choroidal disease
- Hypertensive choroidopathy

#### **VI. Conclusion and Q&A**

## References

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3. Fundus autofluorescence imaging patterns in central serous chorioretinopathy according to chronicity. *Eye*. (2016) 30:1336–42.
4. Shields CL, Lim LS, Dalvin LA, Shields JA. Small choroidal melanoma: detection with multimodal imaging and management with plaque radiotherapy or AU-011 nanoparticle therapy. *Curr Opin Ophthalmol*. 2019 May;30(3):206-214

