

Retinal Manifestations
of High Myopia

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1

Financial Disclosures

- ▶ None

2

Objectives

- ▶ Understand the Retinal Manifestations of High Myopia
 - ▶ Evaluation, Diagnosis & Management
- ▶ Develop Appropriate Referral Timing to Ensure Appropriate & Timely Care

3

Evolution of the evaluation and treatment of retinal diseases

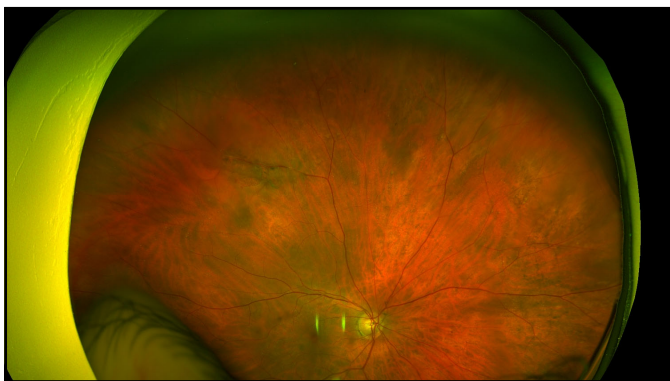
- ▶ Diagnosis - we can "see" things earlier in disease processes
 - ▶ Advent of OCT has revolutionized the evaluation & management of macular disease
 - ▶ Widefield angiography/ fundus photography has allowed us to look at the peripheral retina with much more detail.
 - ▶ OCTA has allowed us to discover choroidal neovascular membranes before they start leaking
- ▶ Treatment - "less invasive"
 - ▶ There has been a shift away from surgical management (for vascular diseases) given the effectiveness and safety of anti-VEGF medications
 - ▶ Surgical intervention has become "less invasive"- smaller instrumentation that allows for smaller wound construction

4

What does this mean for optometrists?

- ▶ Many times we find things when the patient is asymptomatic
 - ▶ Diagnostic modalities may uncover pathology that is otherwise asymptomatic
- ▶ Does all pathology that we detect require treatment?
 - ▶ Patient may benefit from earlier intervention
 - ▶ "Discretion is the better part of valor"
 - ▶ ERM
 - ▶ Subfoveal CNV
 - ▶ Lattice Degeneration
 - ▶ Retinal Holes
 - ▶ Retinal Tears
 - ▶ Retinal Detachment
 - ▶ Peripheral Neovascularization

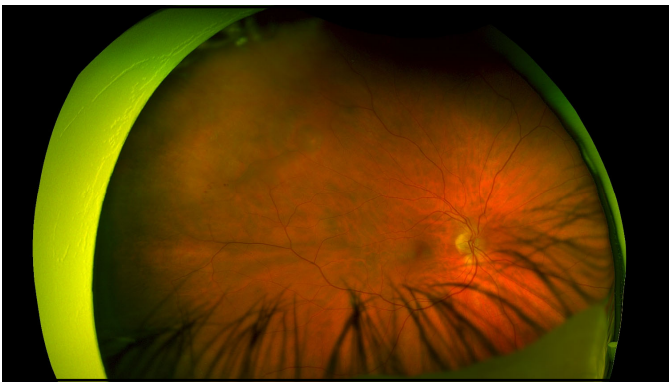
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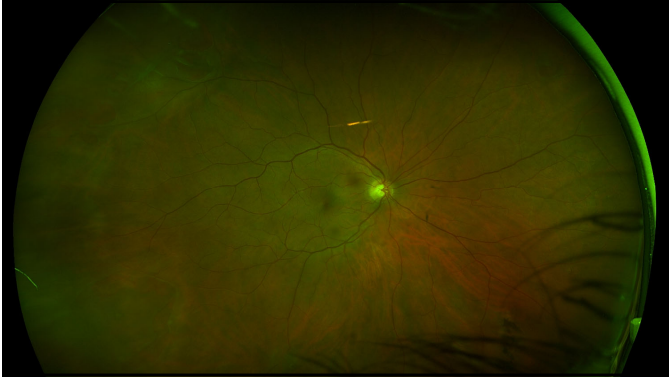
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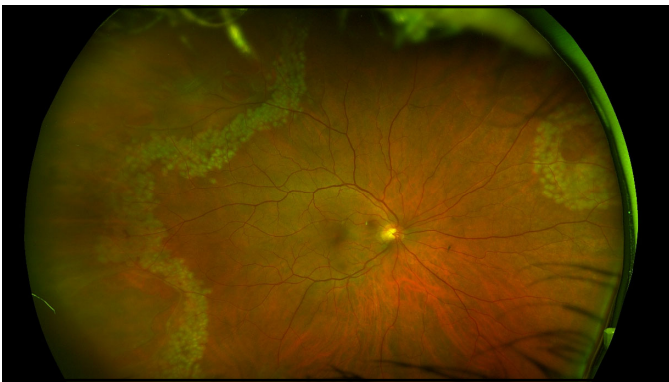
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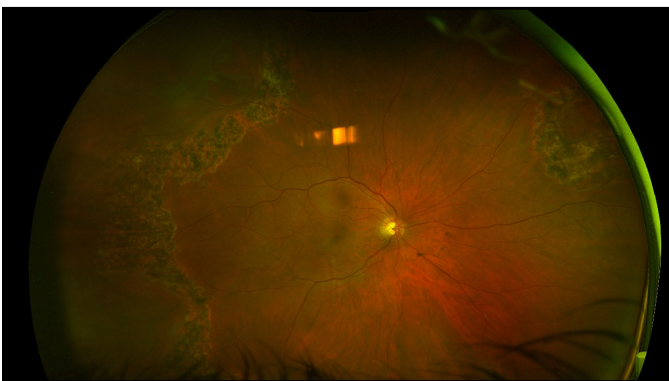
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High Myopia - History

- ▶ Acute Visual Changes
 - ▶ Quality
 - ▶ Distorted
 - ▶ Duration
 - ▶ Progression
 - ▶ Floaters/Flashes/Curtain or Shade
- ▶ s/p refractive surgery
- ▶ s/p cataract surgery, clear lens exchange, or ICL



13

Examination


- ▶ Visual Acuity
- ▶ Intraocular Pressure
- ▶ Refraction
- ▶ Dilated Fundus Examination
- ▶ SD-OCT
- ▶ Wide-Field Fundus Photography



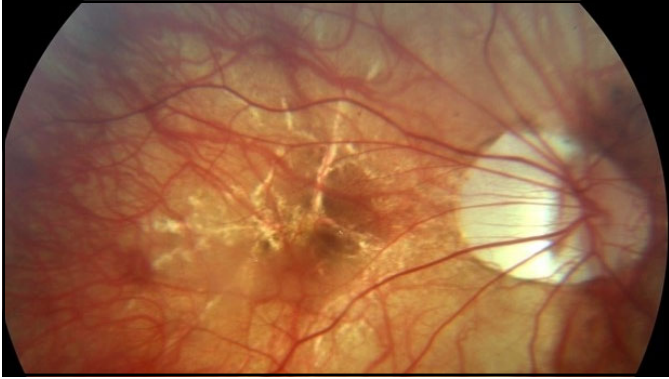
14

Pathologic Myopia

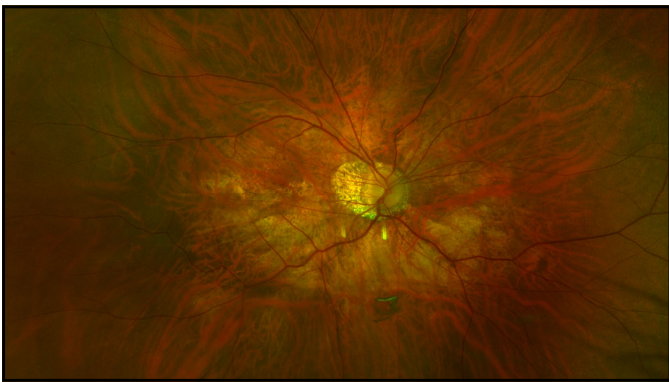
- ▶ ~ 2% of population
- ▶ High Myopia
 - ▶ > -6.00 D or AL > 26.5 mm
- ▶ Pathologic Myopia
 - ▶ > -8.00 D or AL > 32.5 mm
- ▶ Tilted Disc
- ▶ Peripapillary Atrophy
- ▶ Lacquer Cracks
- ▶ Fuchs Spots
- ▶ Chorioretinal Atrophy
- ▶ Posterior Staphyloma
- ▶ Lattice Degeneration
- ▶ Retinal Holes
- ▶ Scleral Thinning
- ▶ Choroidal Neovascularization
- ▶ Isolated Subretinal Hemorrhages



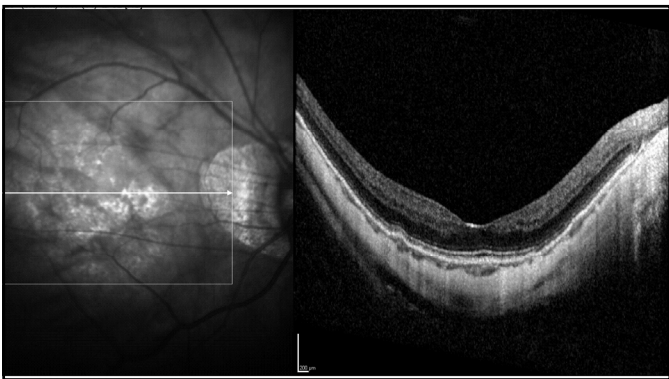
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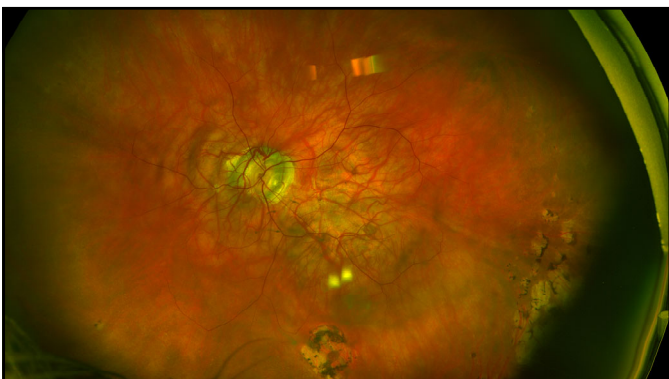
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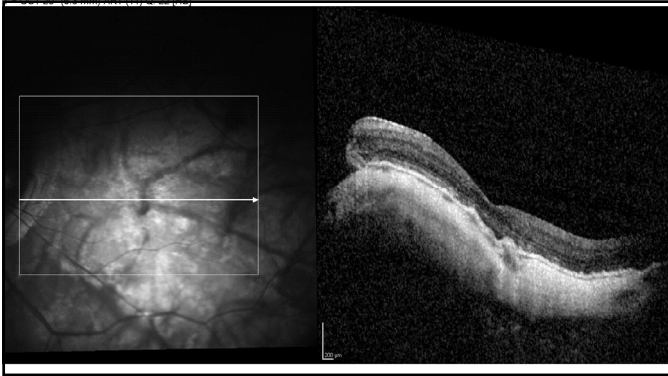
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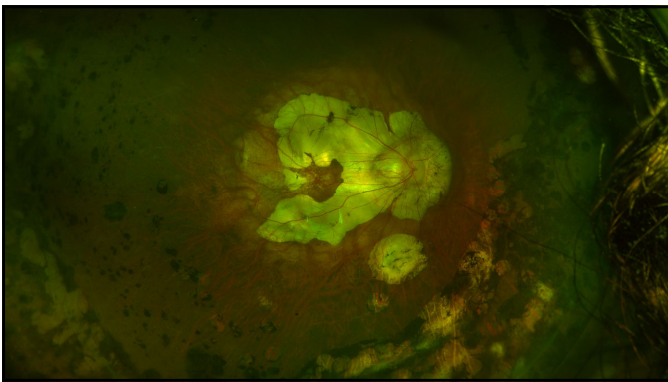
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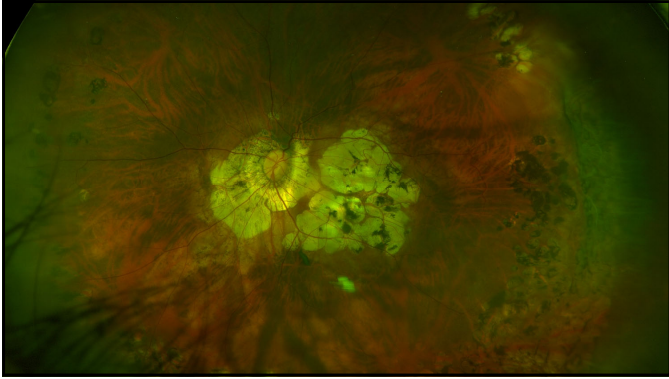
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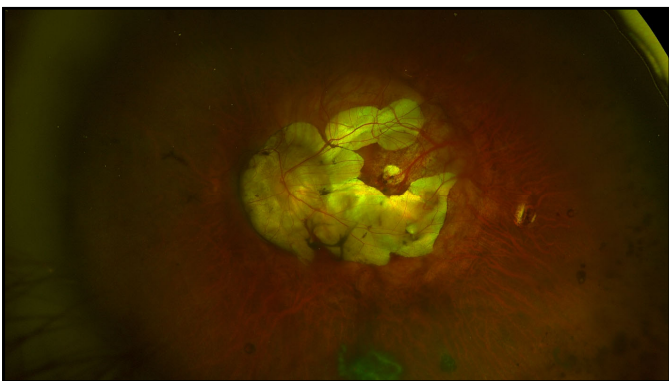
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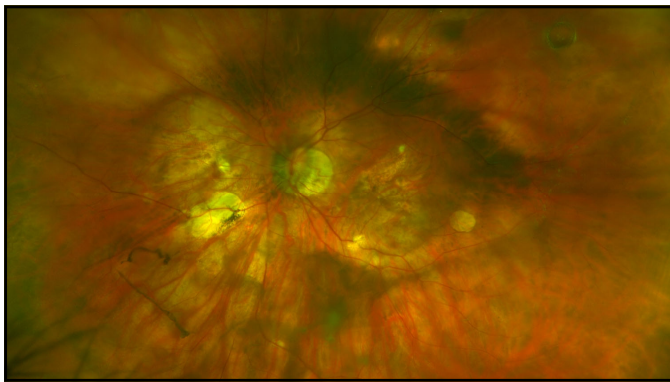
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Case

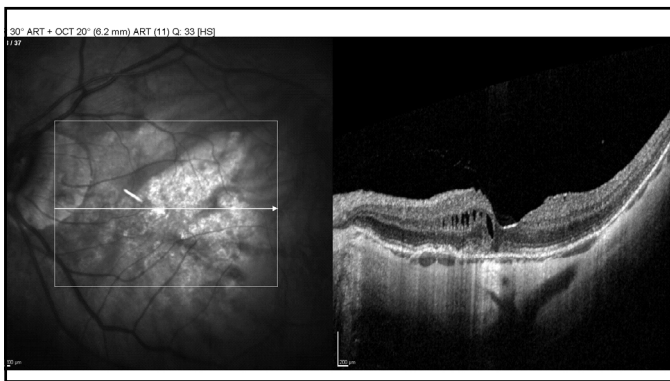
- ▶ 54 yo F presenting with metamorphopsia in left eye x 2 months.
- ▶ - 8.50 D Myope OU
- ▶ VA cc 20/25 OD, 20/50 OS



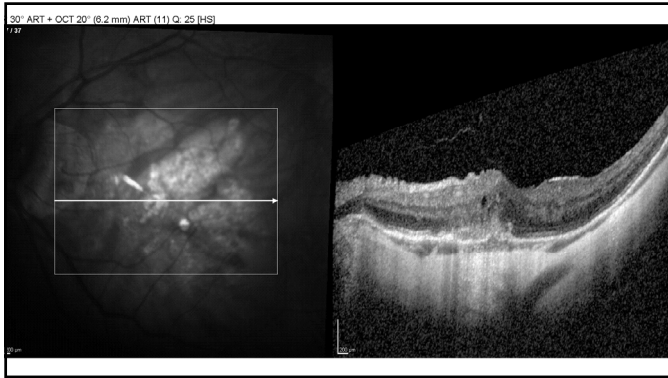
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30



31

Myopic Degeneration

- ▶ Visual acuity may be down due to many different problems
 - ▶ Dry eye, refractive, cataract, glaucoma, etc.
- ▶ Myopic changes distort the normal macular architecture
 - ▶ RPE changes, lacquer cracks, Fuchs spot, chorioretinal atrophy, staphyloma
- ▶ Diagnostic modalities have better resolution than the clinician
 - ▶ OCT
 - ▶ OCT-A
 - ▶ Fluorescein angiography
 - ▶ Autofluorescence

32

Fundus Autofluorescence

- ▶ Helps explain vision loss in otherwise dry maculas

The image shows two circular fundus autofluorescence scans of the macula. The left scan is labeled "Zoom 1.00" and the right scan is labeled "Zoom 1.07". Both scans show a central area of hyperautofluorescence (brighter) and surrounding areas of hypoautofluorescence (darker), which are characteristic of myopic macular degeneration. The text at the top left of the image reads "Oct 26, 2017 3:16:16 PM Image 4".

33

Myopic Degeneration

- ▶ Choroidal Neovascularization
 - ▶ Symptoms
 - ▶ Decreased vision
 - ▶ Metamorphopsia
 - ▶ Scotoma
 - ▶ Treatment
 - ▶ Intravitreal Anti-VEGF Therapy
 - ▶ Lucentis® (ranibizumab)
 - ▶ FDA Approved
 - ▶ Eylea® (aflibercept)
 - ▶ Avastin® (bevacizumab)
 - ▶ Biocimilar
 - ▶ FDA-Approved
 - ▶ Conerj® (faricimab-egm)
 - ▶ Biocilar
 - ▶ FDA-Approved
 - ▶ Aflibercept® (off-label)

34

Case

- ▶ 51 yo F presenting with no acute change in vision OU
 - ▶ - 9.00 D Myope OU
 - ▶ VA cc 20/20 OD, 20/30 OS

35



36



37

Myopic Foveoschisis

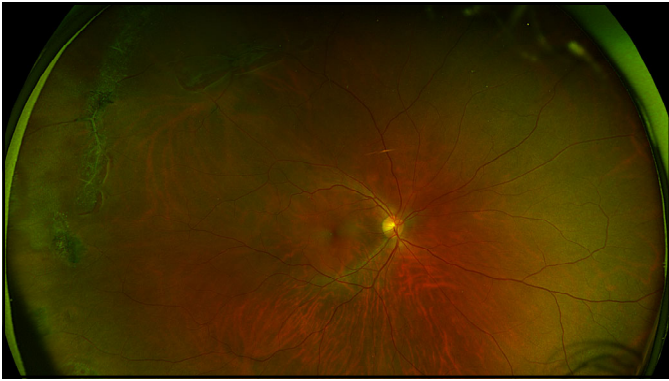
- ▶ Management
 - ▶ Severity & Acuity of Symptoms
 - ▶ Observation
 - ▶ Pars Plana Vitrectomy/Membrane Peel

38

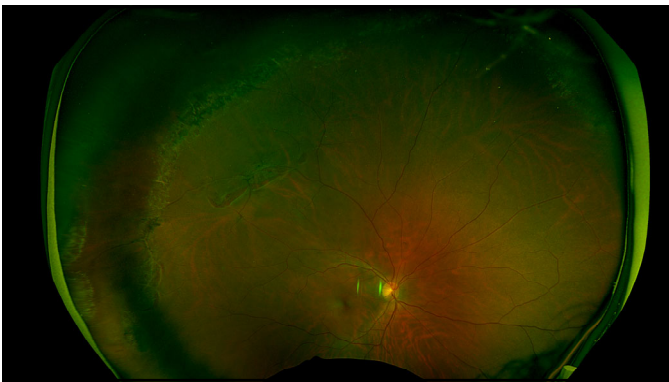
Case

- ▶ 47 yo F presenting with flashes & floaters OD x 3 weeks
 - ▶ - 6.50 D OD, - 6.00 D OS
 - ▶ VA cc 20/20 OU

39




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41

Lattice Degeneration

- ▶ Limited or extensive
- ▶ Presence of atrophic retinal holes
- ▶ h/o Retinal Detachment in the fellow eye
- ▶ Treatment?
 - ▶ Observation vs Laser Retinopexy



42

Retinal Tear

- ▶ Examine Anterior Vitreous
 - ▶ Tobacco Dust
 - ▶ RBCs
- ▶ Horseshoe Tear
 - ▶ Laser Retinopexy
 - ▶ Cryotherapy




43



44

Case

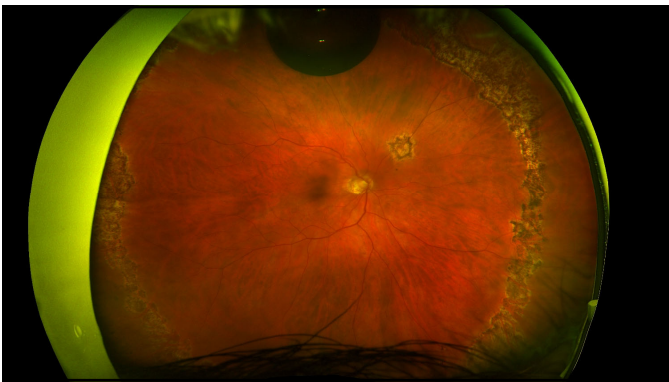
- ▶ 60 yo M presenting with floaters and curtain covering visual field OD.
 - ▶ - 6.00 D Myope OU
 - ▶ VA cc HM OD, 20/30 OS



45



46



47

Retinal Detachment

- ▶ Macula-on vs Macula-off
 - ▶ Determines:
 - ▶ Urgency of referral
 - ▶ Ultimate visual prognosis
- ▶ Symptomatic?
- ▶ Locating the retinal breaks
- ▶ Treatment Options
 - ▶ Barrier Laser
 - ▶ Pneumatic Retinopexy
 - ▶ Scleral Buckle
 - ▶ Scleral Thinning
 - ▶ Pars Plana Vitrectomy

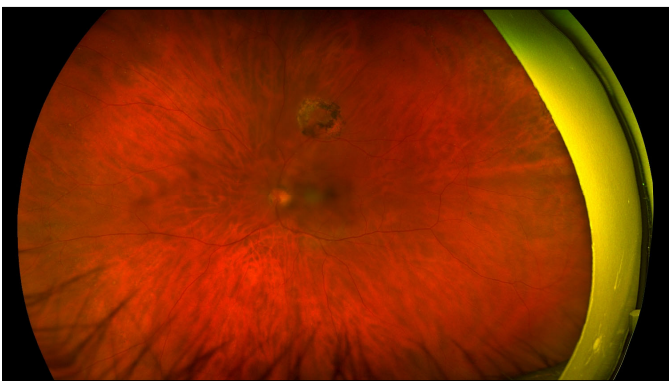
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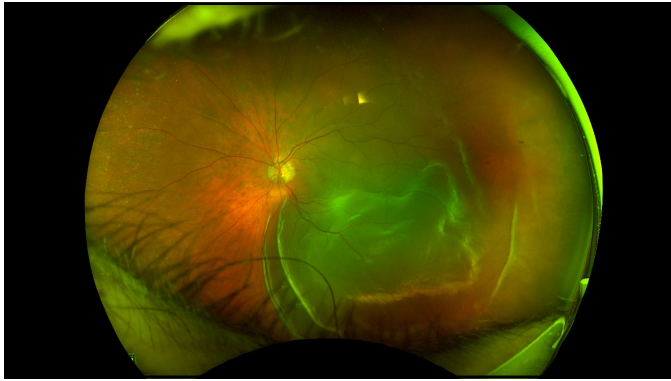
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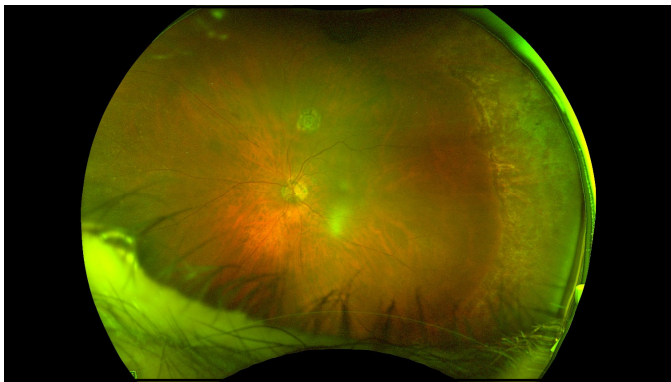
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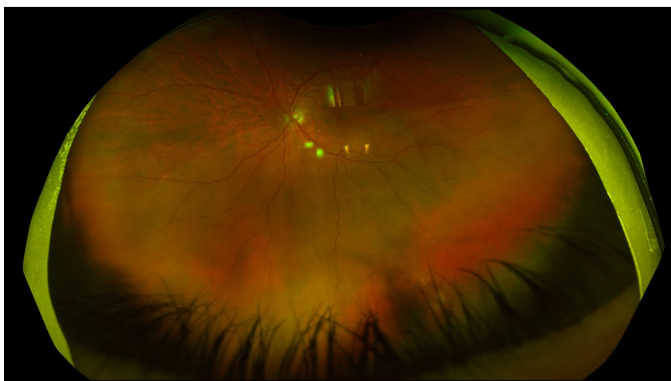
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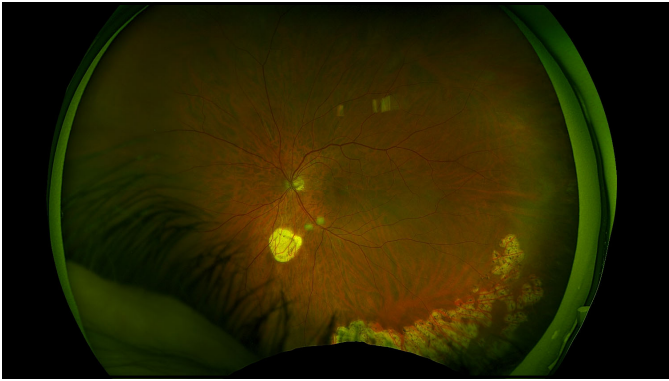
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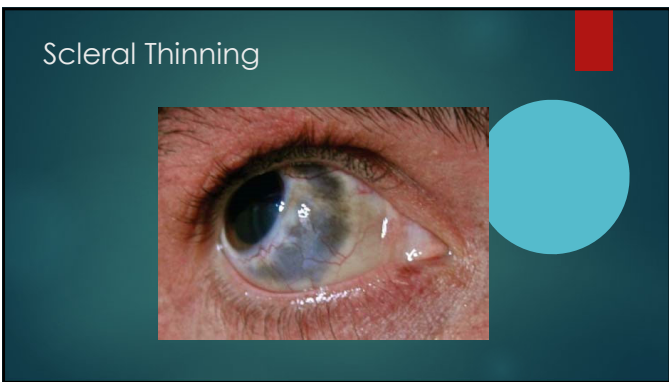
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Summary

- ▶ Pathologic myopia is a retinal disease
- ▶ Patients are at high risk for retinal tear, retinal detachment, and choroidal neovascularization
- ▶ A severely myopic fundus may camouflage acute pathology on clinical examination, particularly in the macula
 - ▶ History and diagnostic testing are paramount
- ▶ Have a low threshold for referral to a retina specialist
