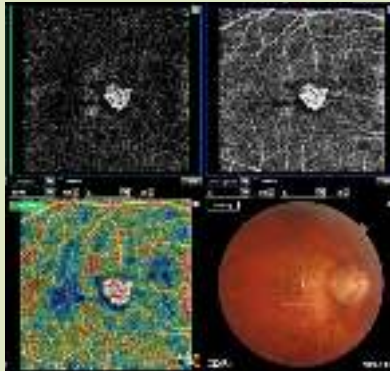
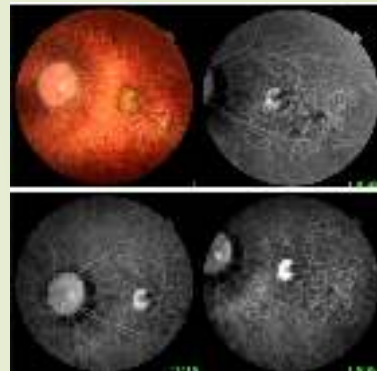
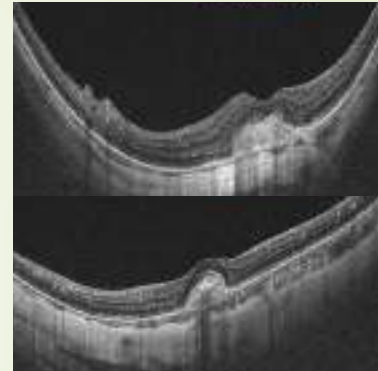
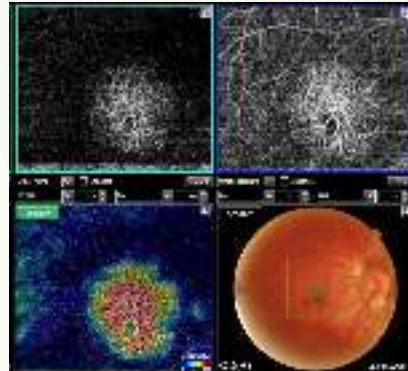




Myopic CNVM

A distinct pathology , A tailored plan

Mohamed Sharaf eldin, MD
Professor of Ophthalmology
Vitreo-Retinal consultant.
Assiut University – 2025

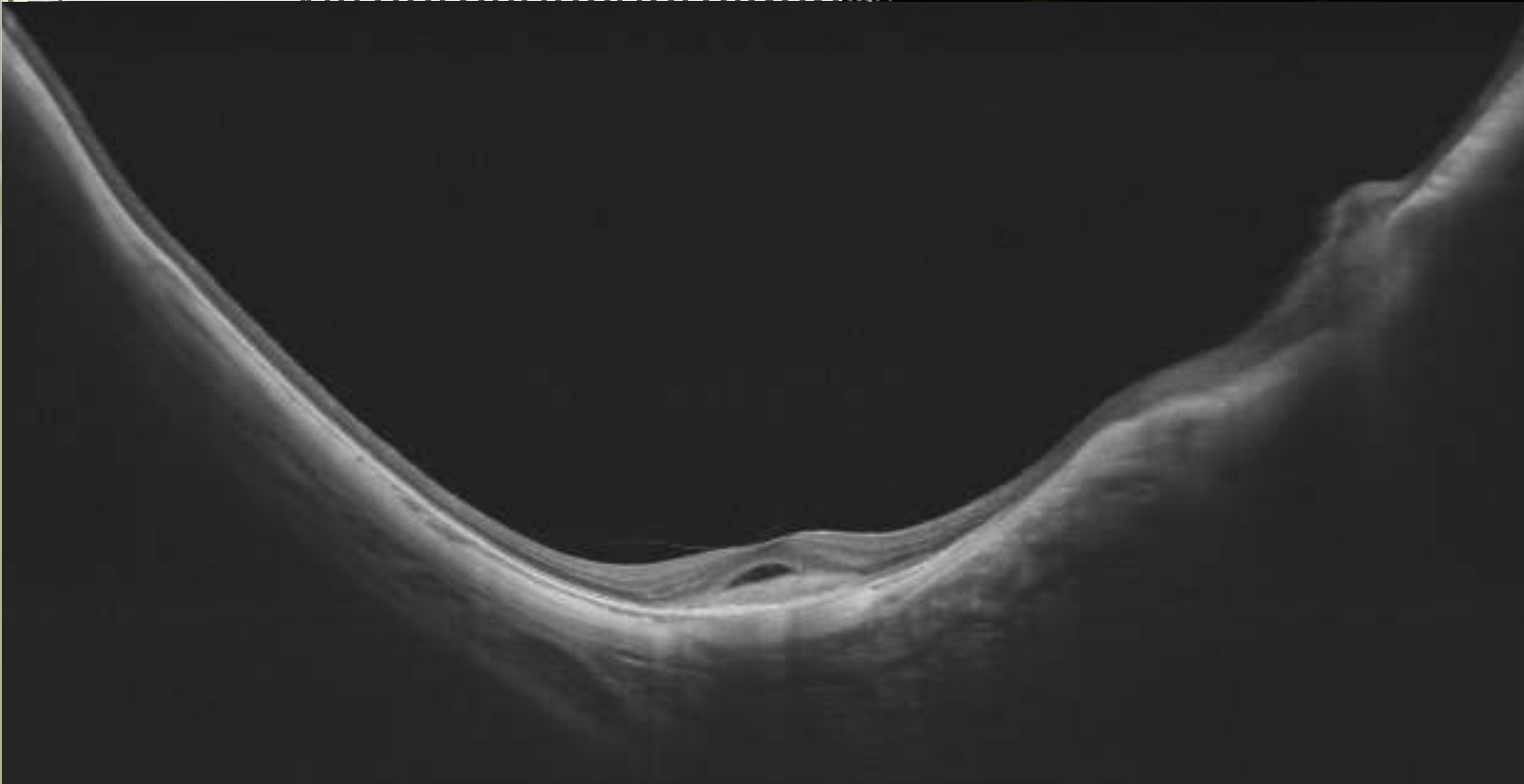


Myopic CNVM

Pathologic myopia (PM), affect up to 3% of the global population.*

Pathologic myopia (PM), affect up to 10.8 % of the global population in Egypt.**

Definition: (> -6.00 D and/or AL > 26 mm + myopic vitreoretinopathies)



Myopic Maculopathy

*Atrophic Maculopathy
(atrophy)*

(patchy or diffuse chorioretinal



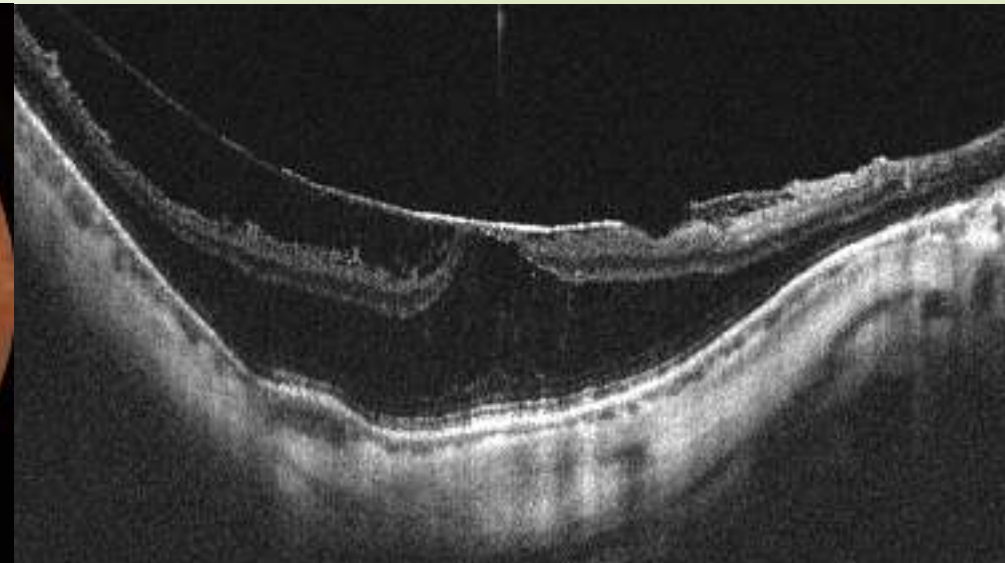
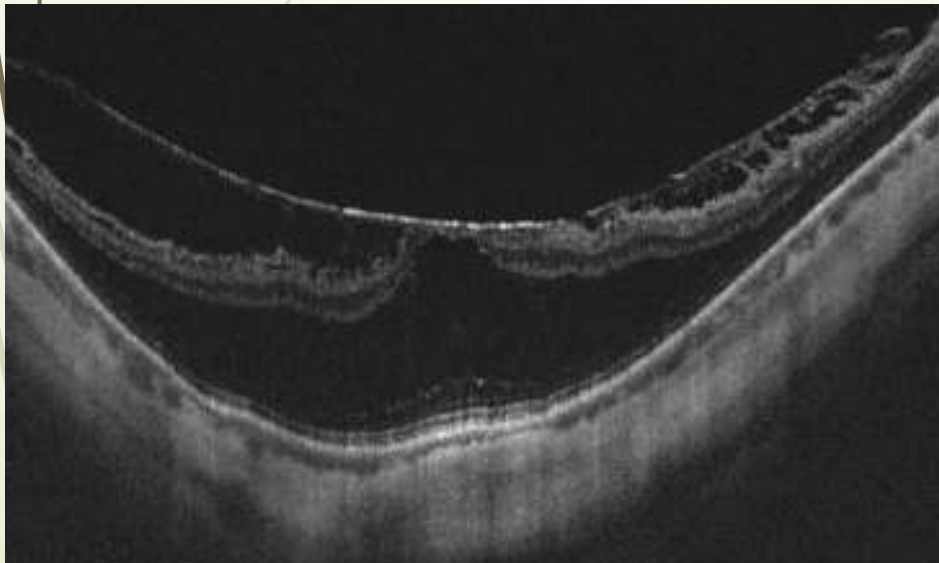
Myopic Maculopathy

Atrophic Maculopathy
atrophy)

Tractional Maculopathy

(patchy or diffuse chorioretinal

(schisis, macular holes)



Myopic Maculopathy

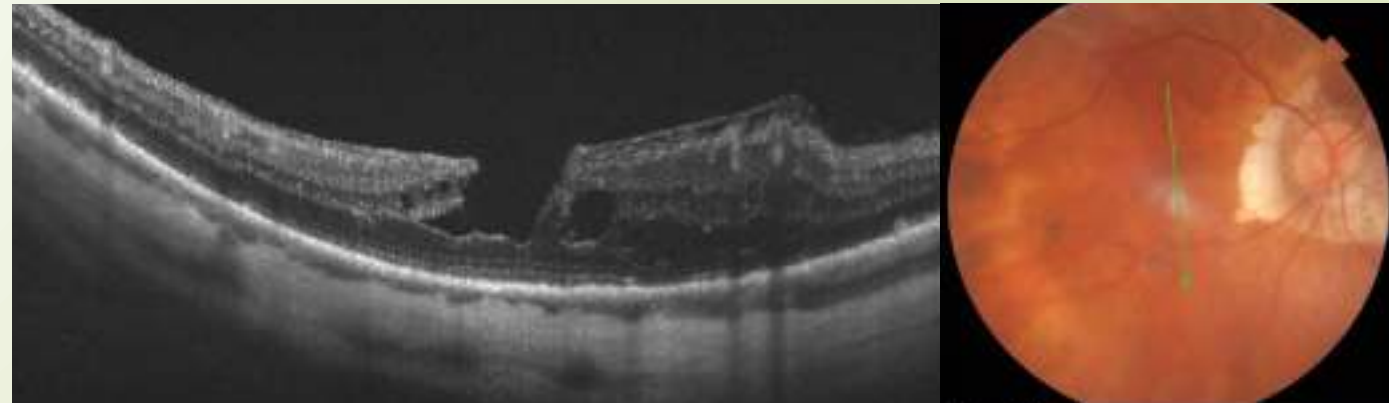
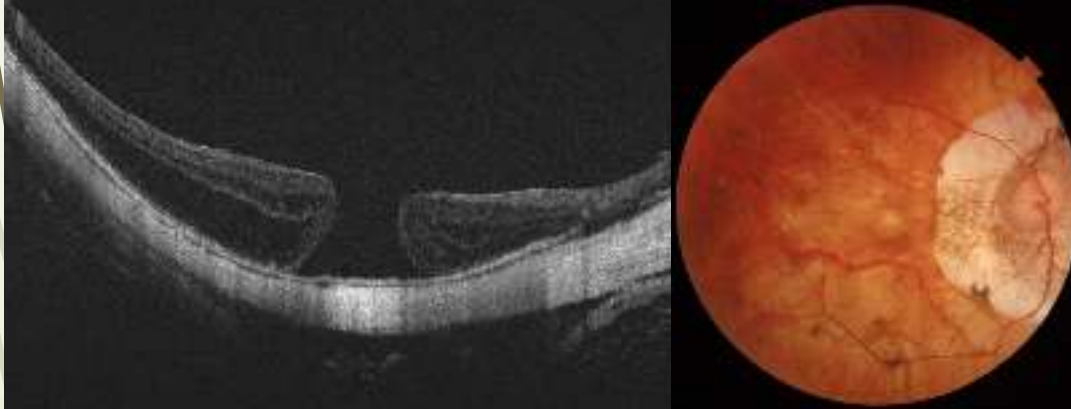
Atrophic Maculopathy

atrophy)

Tractional Maculopathy

(patchy or diffuse chorioretinal

(schisis, macular holes)



Myopic Maculopathy

*Atrophic Maculopathy
(atrophy)*

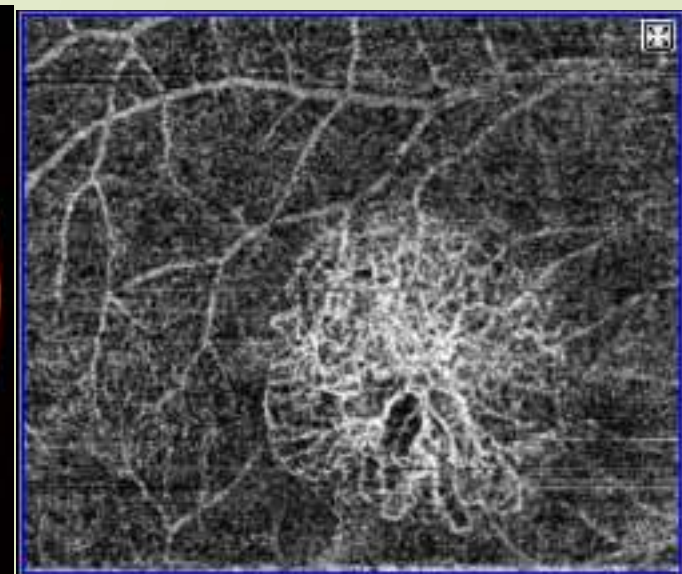
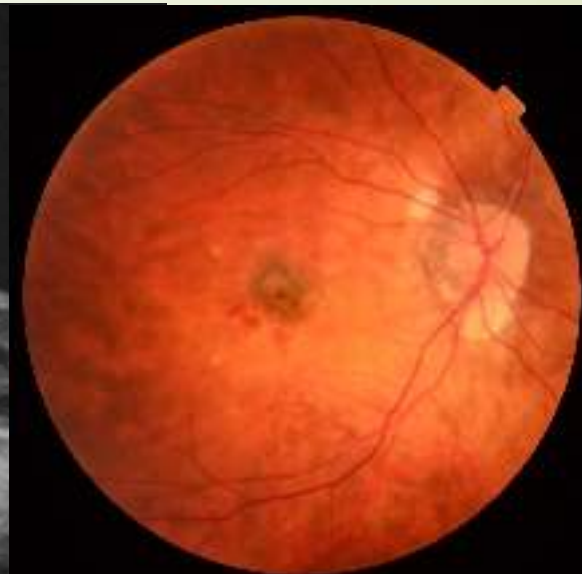
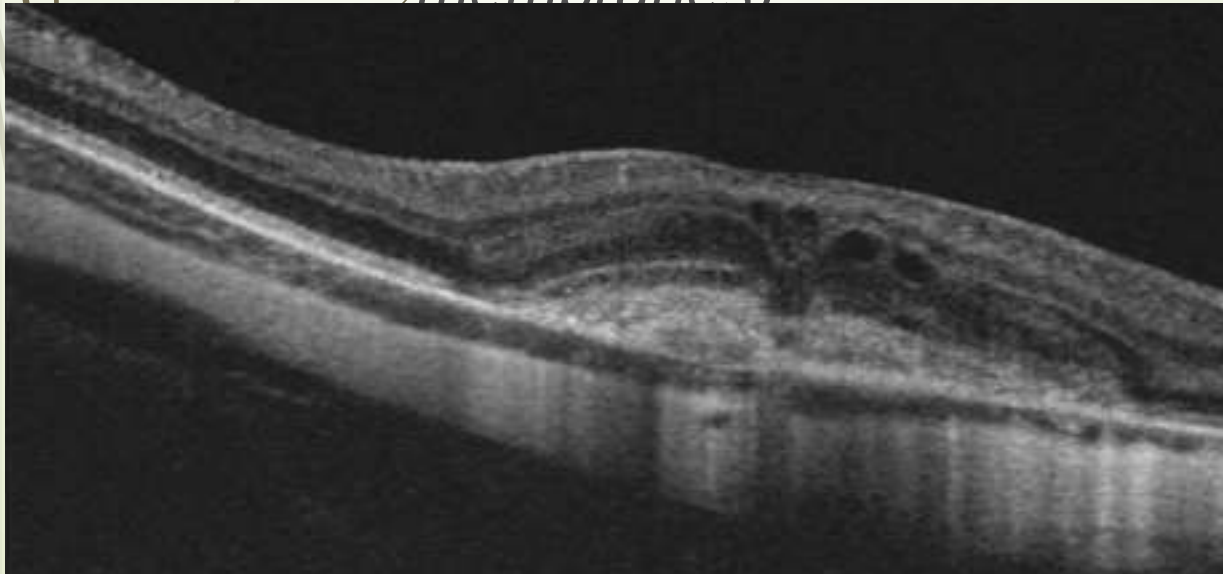
Tractional Maculopathy

*Neovascular Maculopathy
(membranes)*

(patchy or diffuse chorioretinal

(schisis, macular holes)

(choroidal neovascular

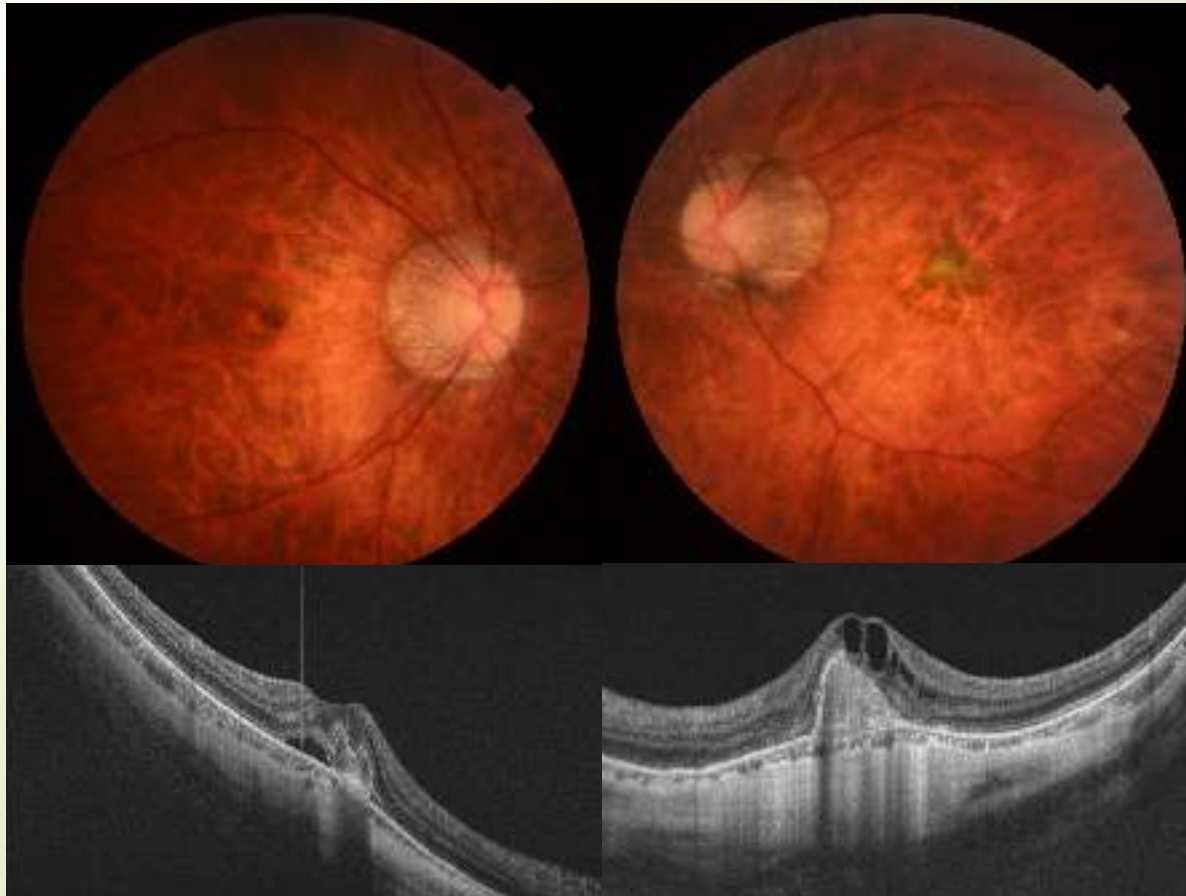


Myopic Choroidal Neovascular Membranes (CNVMs)

5% to 11% of individuals with PM will develop myopic CNV

Often a disease of middle rather than old age.

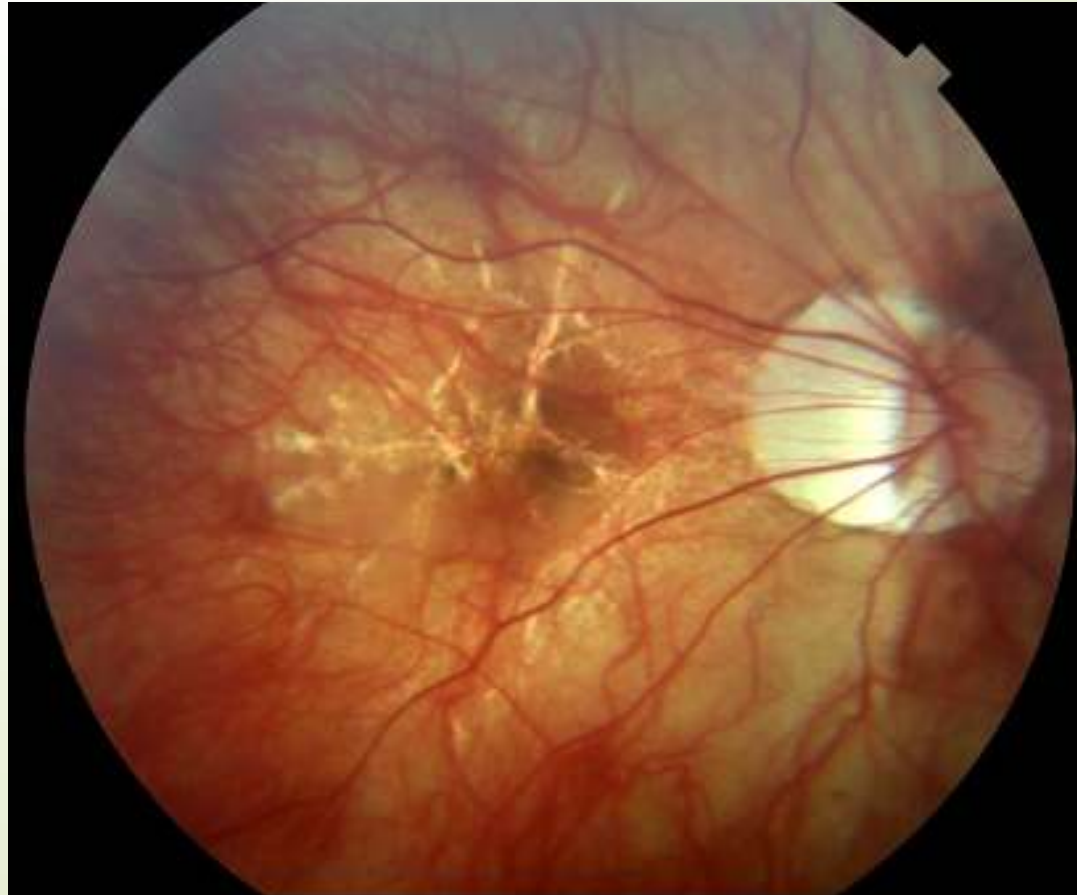
35% develop bilateral disease in the fellow eye within 8 years.



Myopic Choroidal Neovascular Membranes (CNVMs)

Risk factors and pathogenesis

Ocular: lacquer cracks, choroidal thinning, sharply outlined defects of RPE



The mechanical theory is based on the assumption that the progressive and excessive elongation of the anteroposterior axis causes a mechanical stress on the retina, leading to an imbalance between pro-angiogenic and anti-angiogenic factors

Myopic Choroidal Neovascular Membranes (CNVMs)

Pathogenesis and Risk factors

Ocular: lacquer cracks, choroidal thinning, sharply outlined defects of RPE

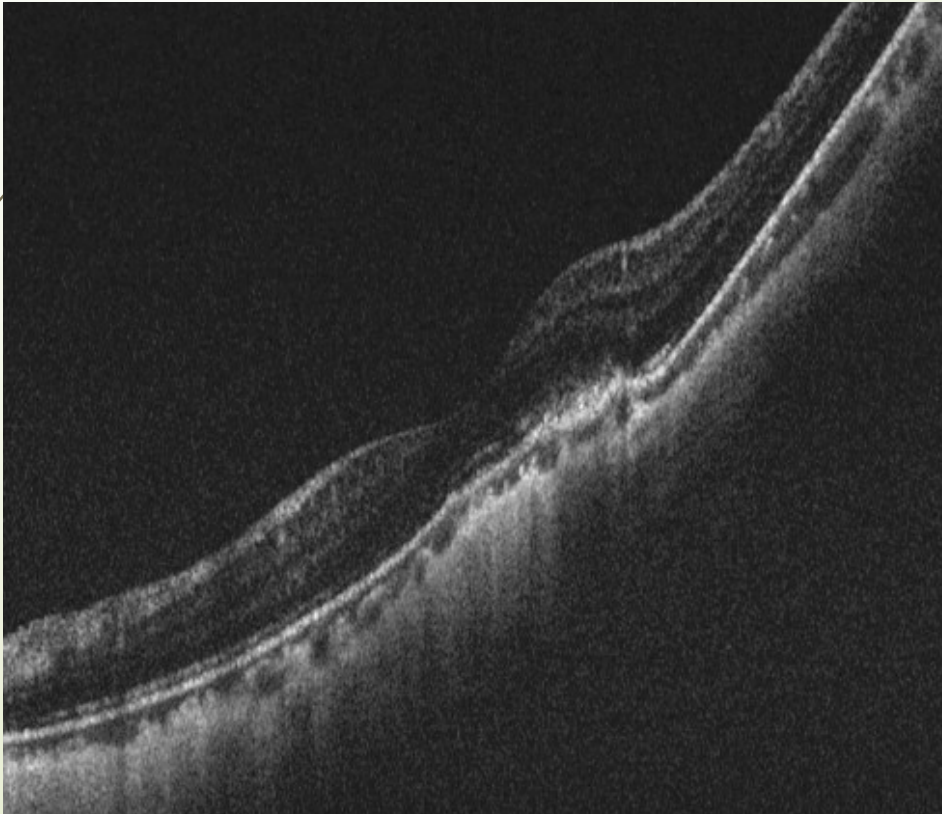
Systemic: high serum inflammatory mediators CRP, C3, IL-6, IL-8

Genetic: A single nucleotide polymorphism (SNP [rs10033900]) in the complement factor I gene , and pigment epithelium–derived factor gene SNP (rs12603825)

Myopic Choroidal Neovascular Membranes (CNVMs)

Diagnosis: **Symptoms**

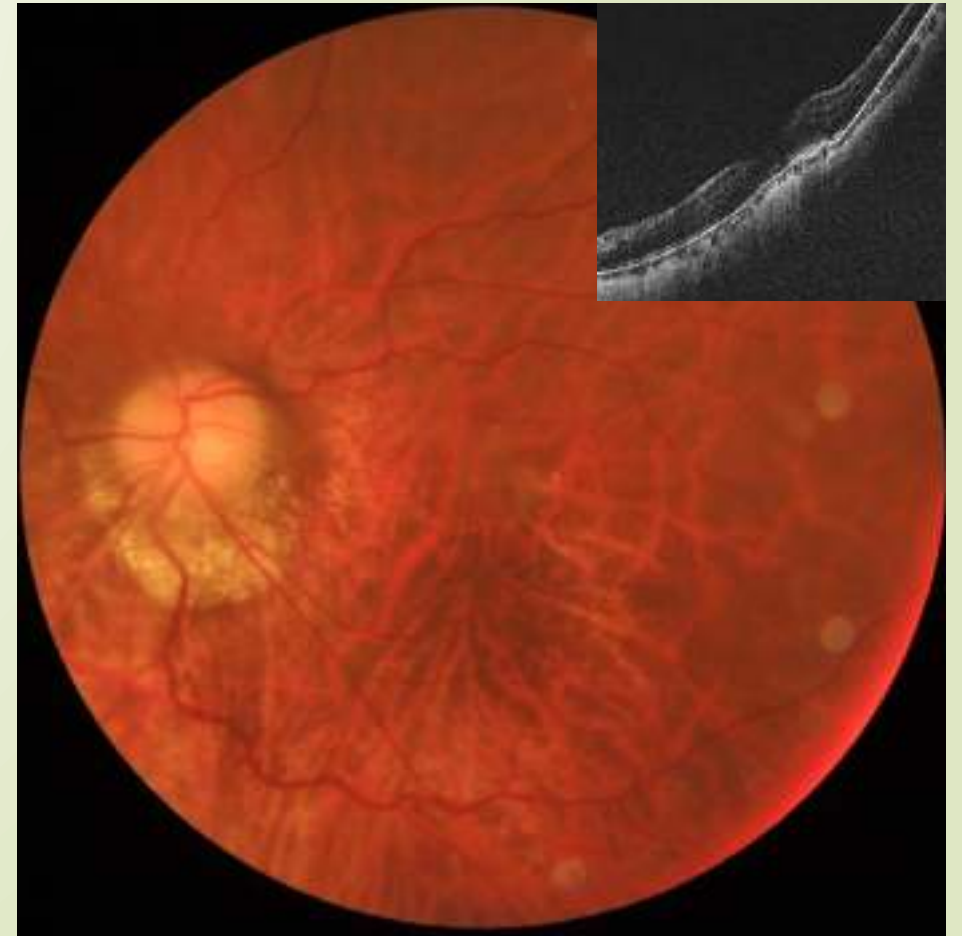
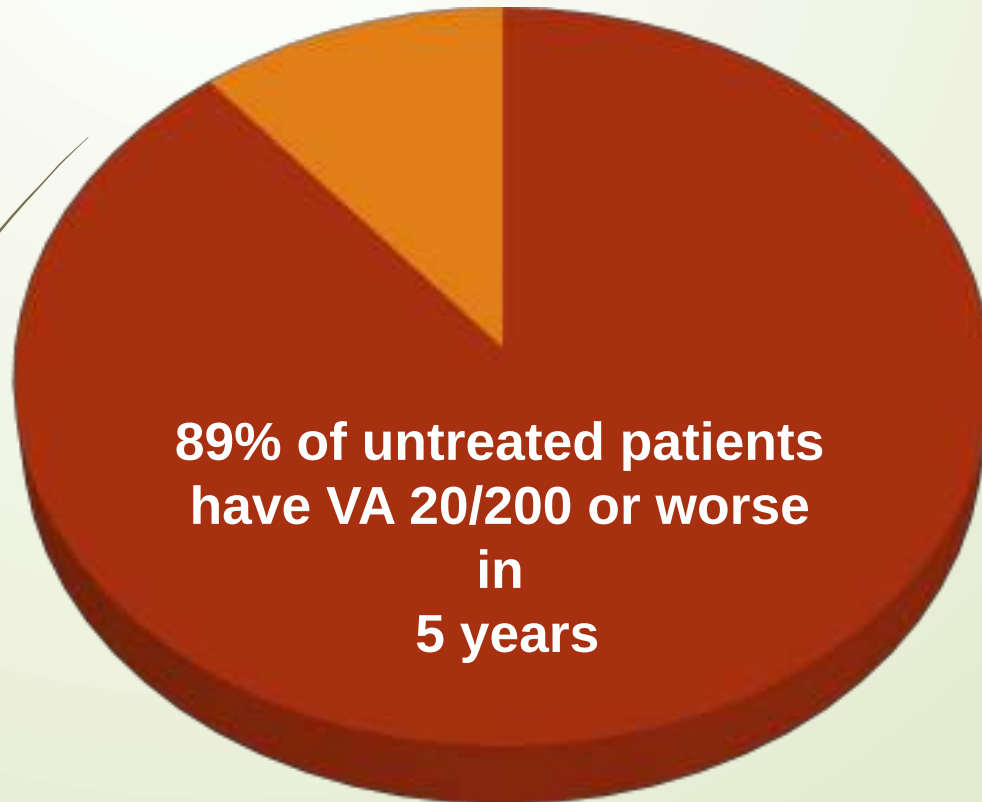
Rapid decrease in vision, central scotoma and/or metamorphopsia.



Myopic Choroidal Neovascular Membranes (CNVMs)

Diagnosis: Symptoms

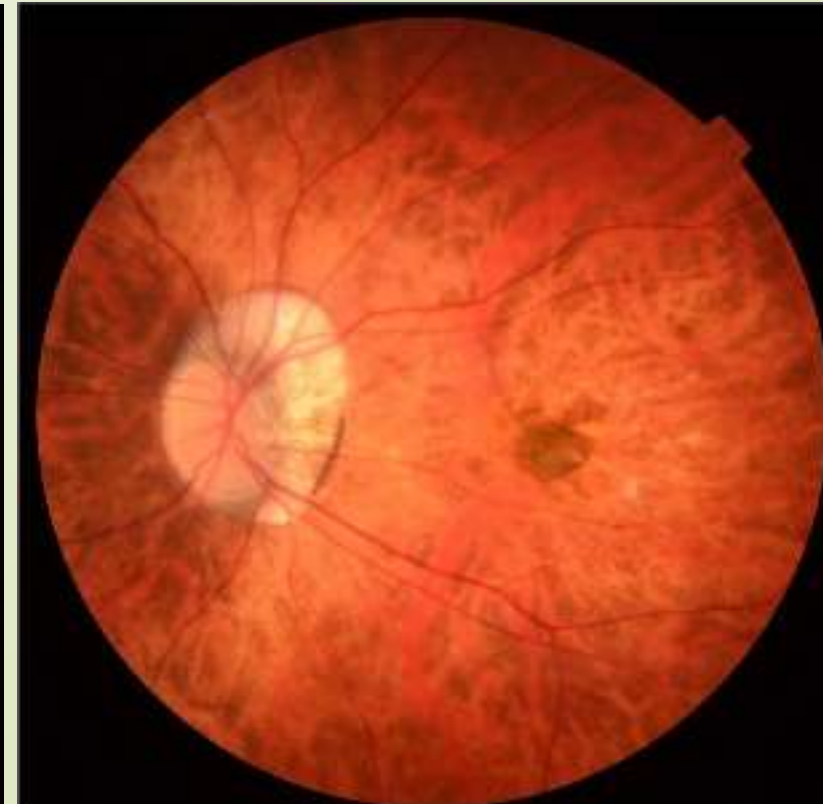
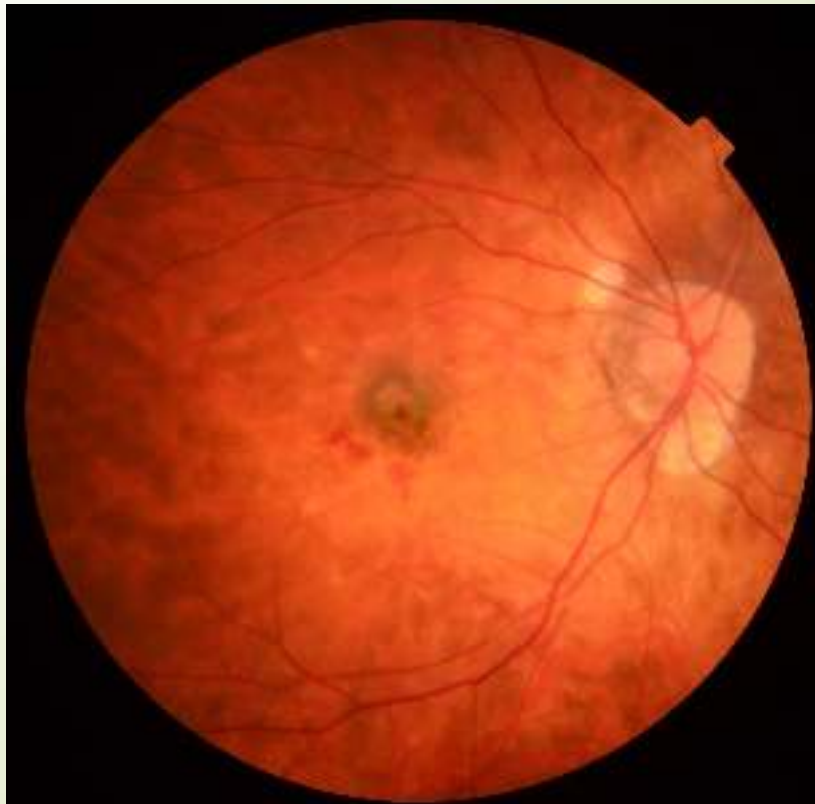
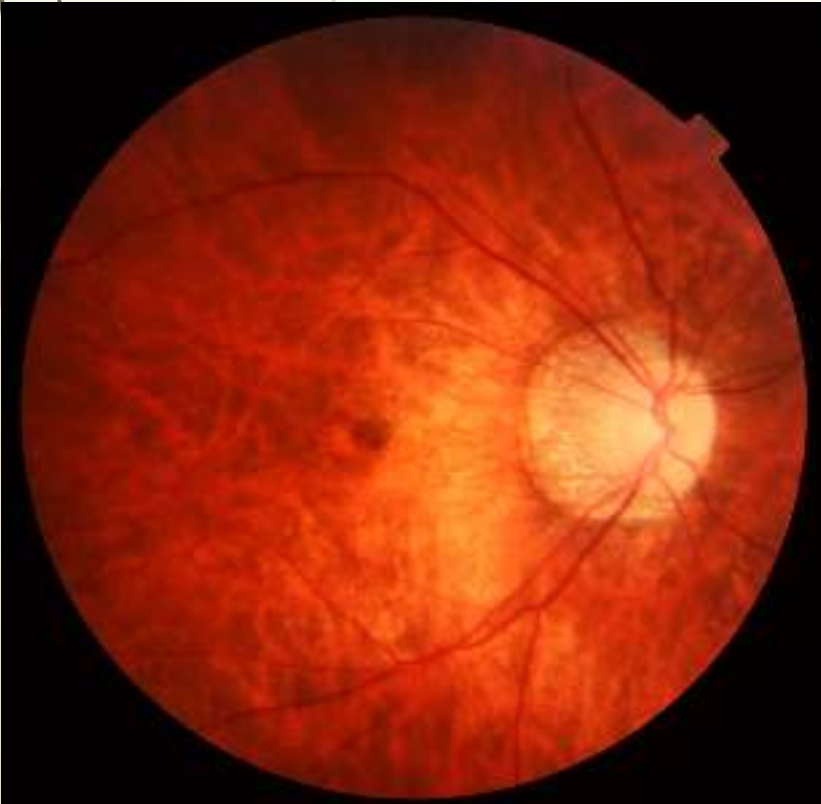
Rapid decrease in vision, central scotoma and/or metamorphopsia.



Myopic Choroidal Neovascular Membranes (CNVMs)

Diagnosis: Imaging

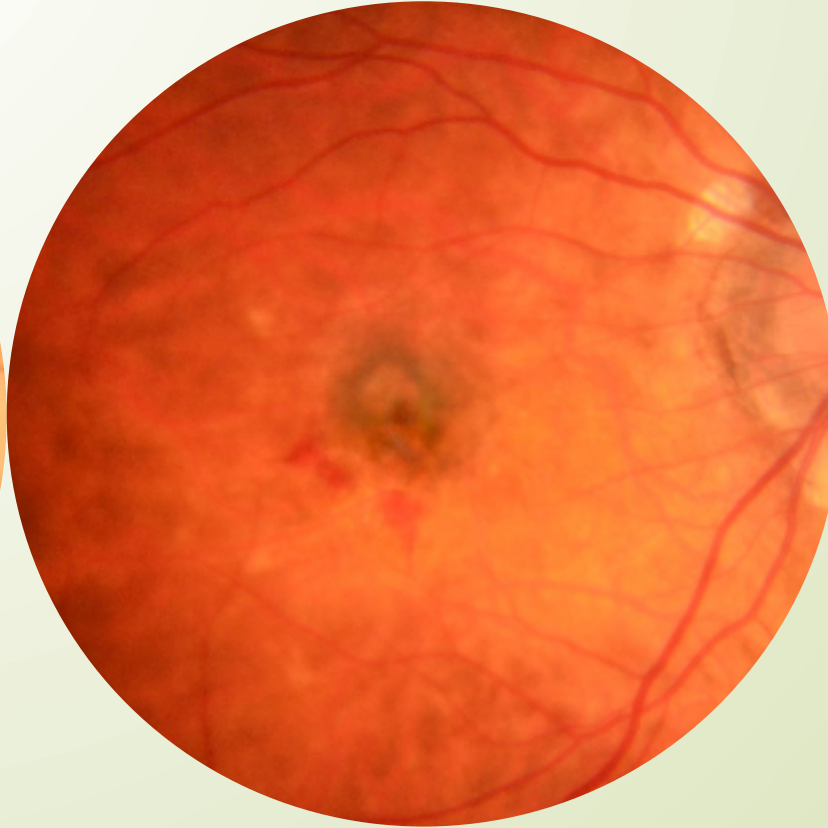
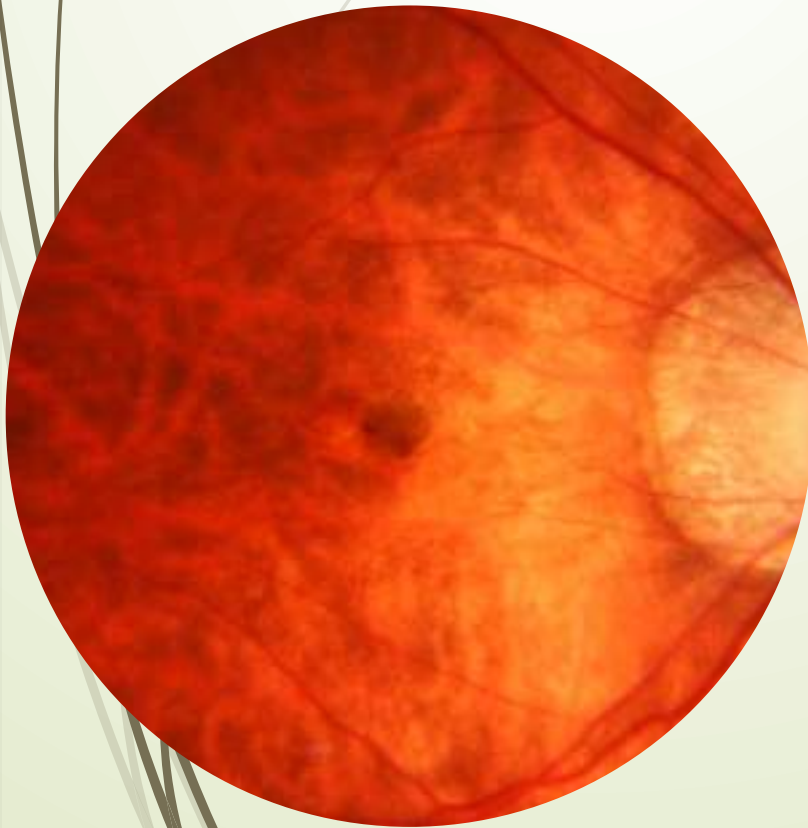
SL/ Color photo features of myopic CNV include a light-colored lesion with a dark, hyperpigmented rim, with minimal retinal bleeding and exudates



Myopic Choroidal Neovascular Membranes (CNVMs)

Diagnosis: Imaging

SL/ Color photo features of myopic CNV include a light-colored lesion with a dark, hyperpigmented rim, with minimal retinal bleeding and exudates



Myopic Choroidal Neovascular Membranes (CNVMs)

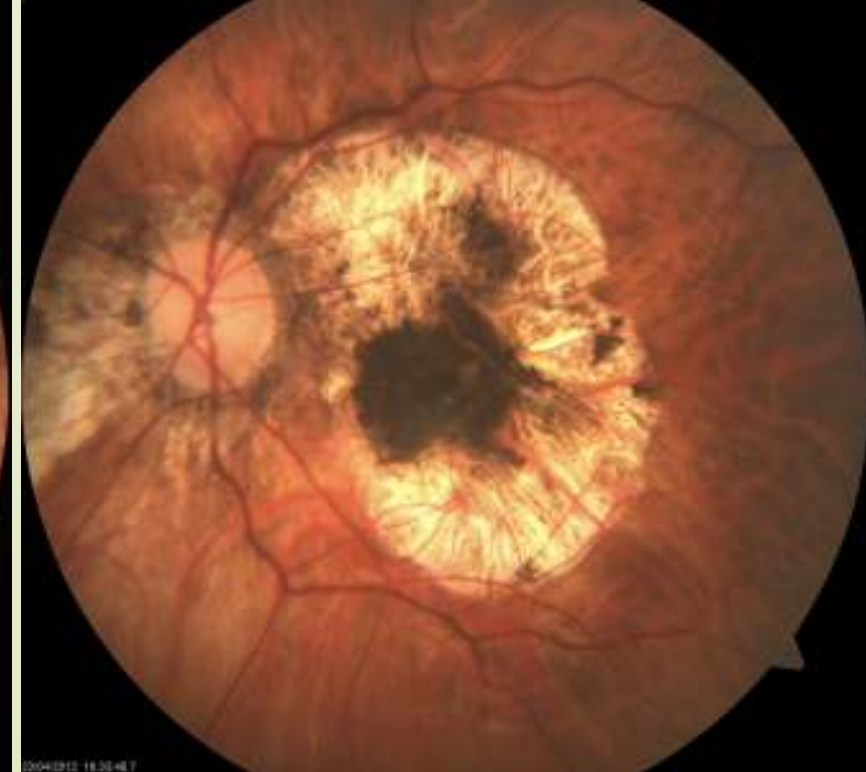
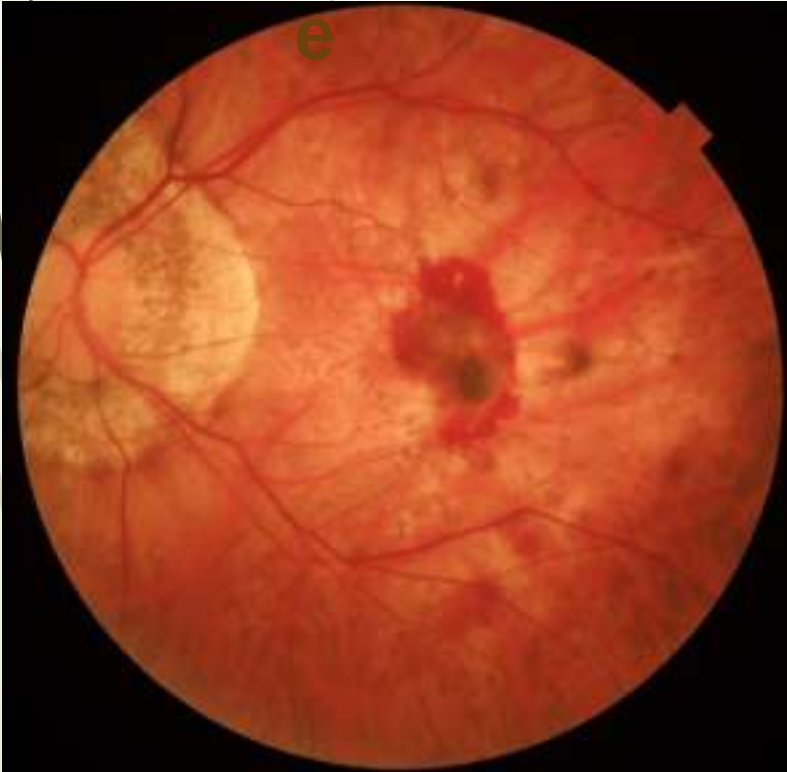
Diagnosis:
classification

Imaging

Activ

Scar

Atrophic



Myopic Choroidal Neovascular Membranes (CNVMs)

Diagnosis: **Imaging**

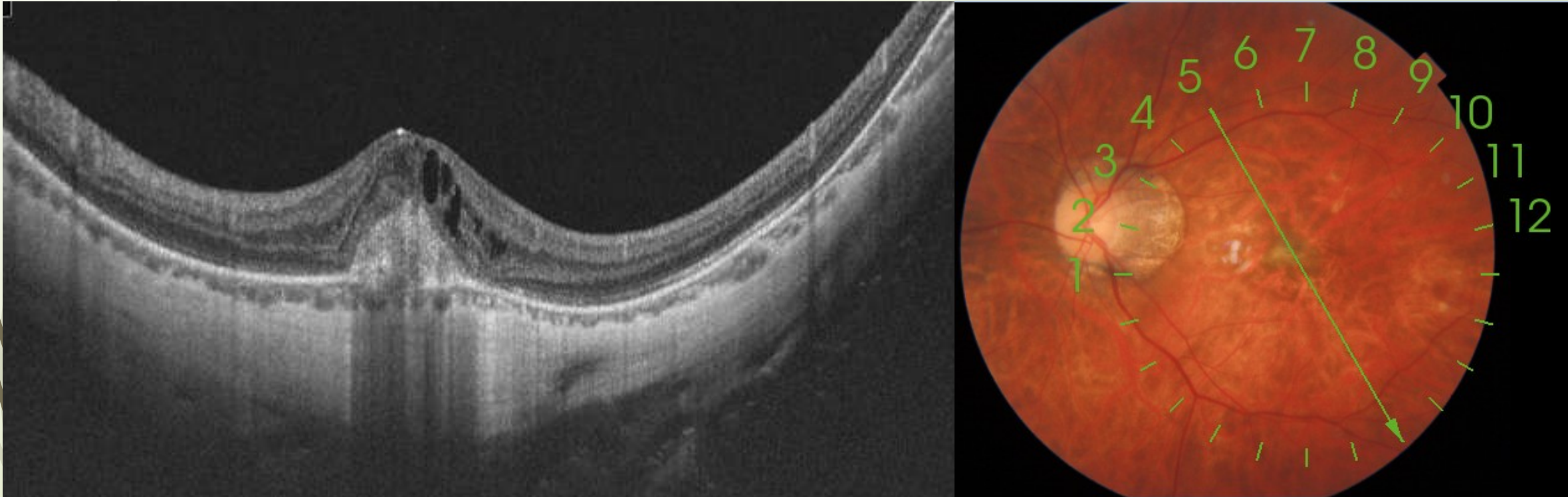
Fundus Fluorescein Angiography: well defined lesion with hyperfluorescence in the early phases and late leakage



Myopic Choroidal Neovascular Membranes (CNVMs)

Diagnosis: Imaging

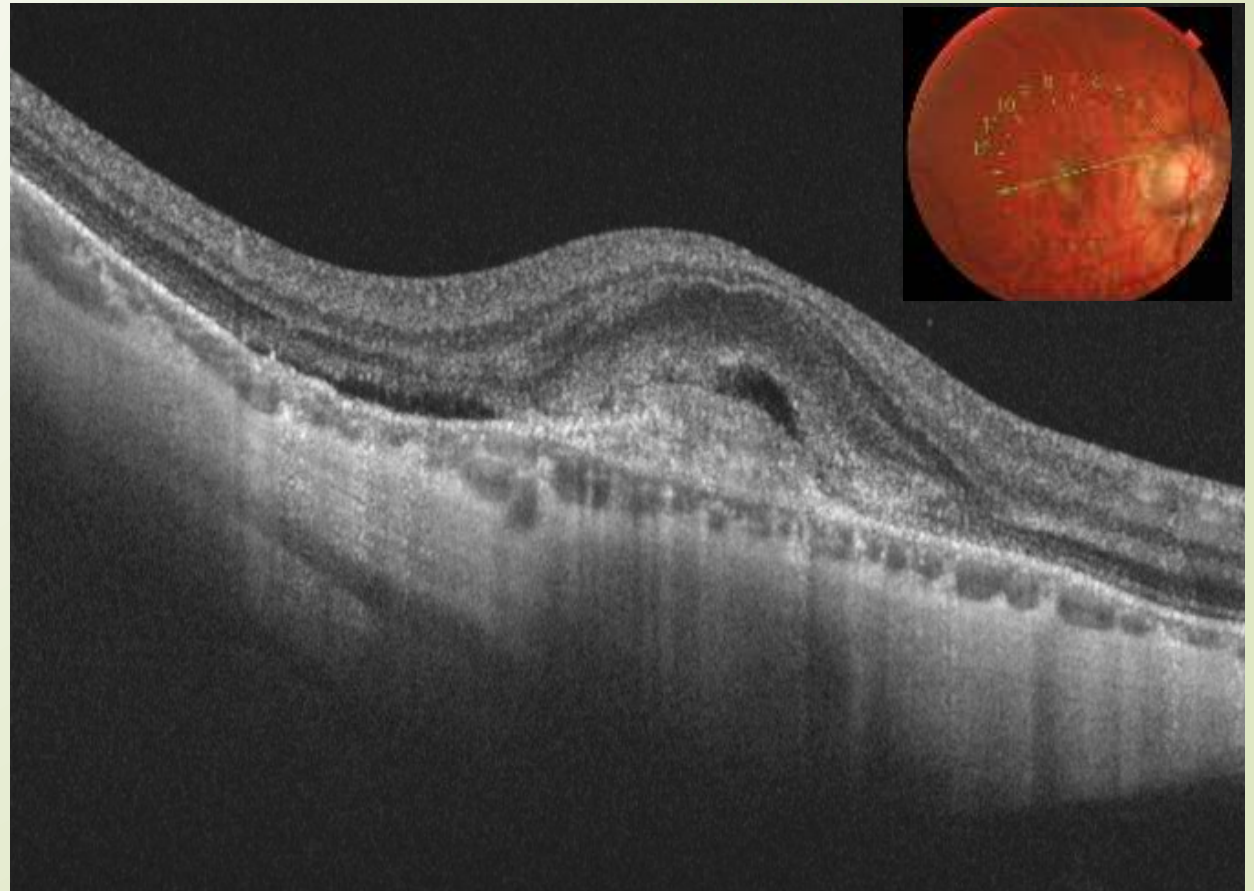
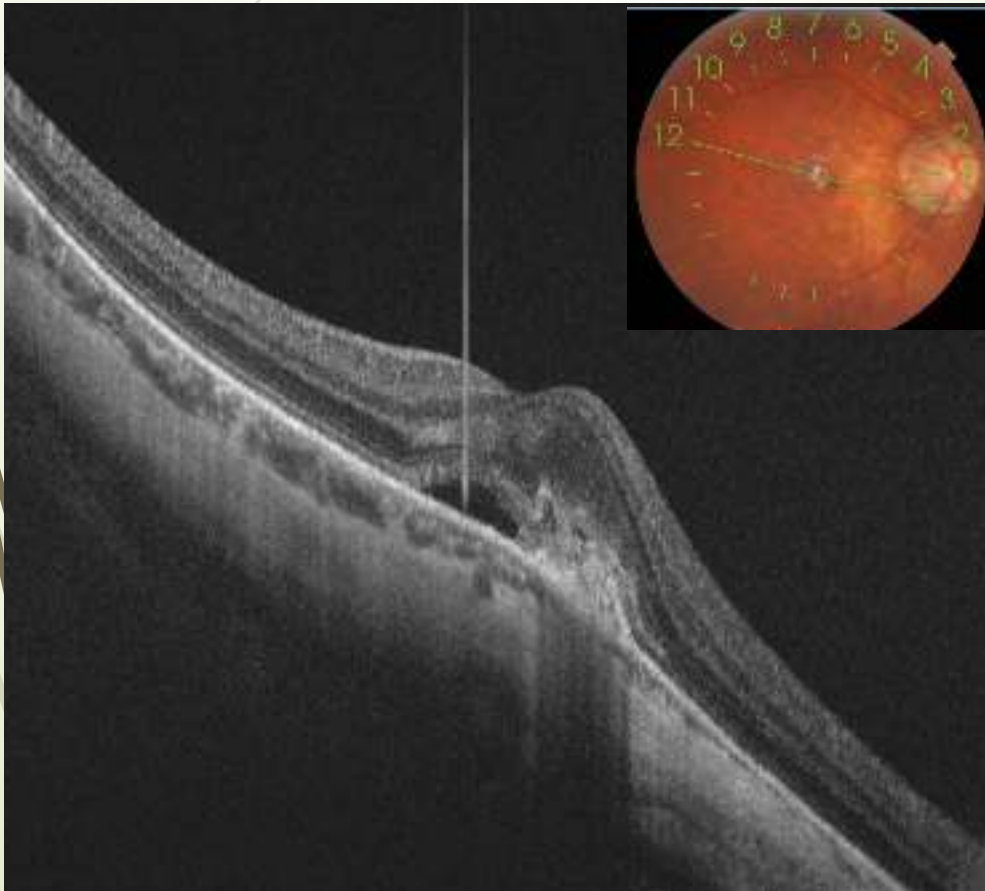
OCT : a highly reflective dome-shaped projection above the RPE (type2 CNV) is typically visible, and subretinal and intraretinal fluid may be present.



Myopic Choroidal Neovascular Membranes (CNVMs)

Diagnosis: Imaging

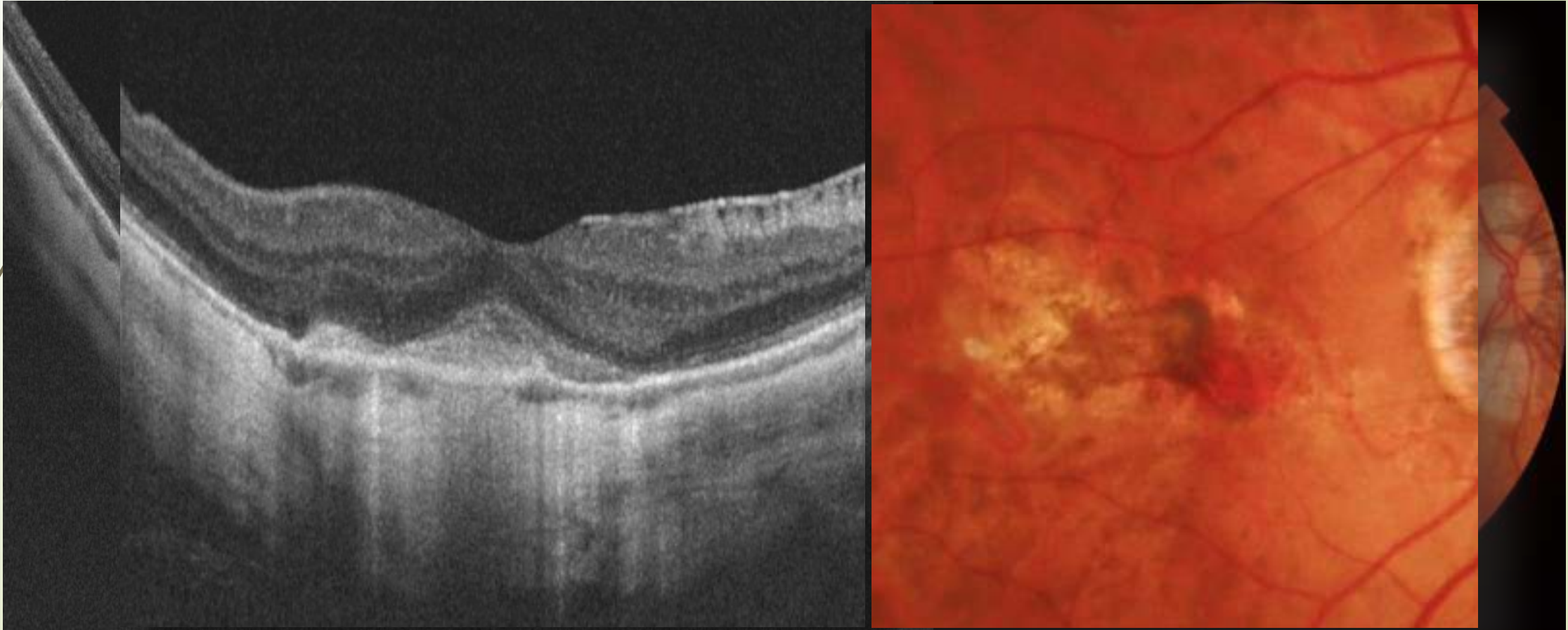
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Myopic Choroidal Neovascular Membranes (CNVMs)

Diagnosis: Imaging

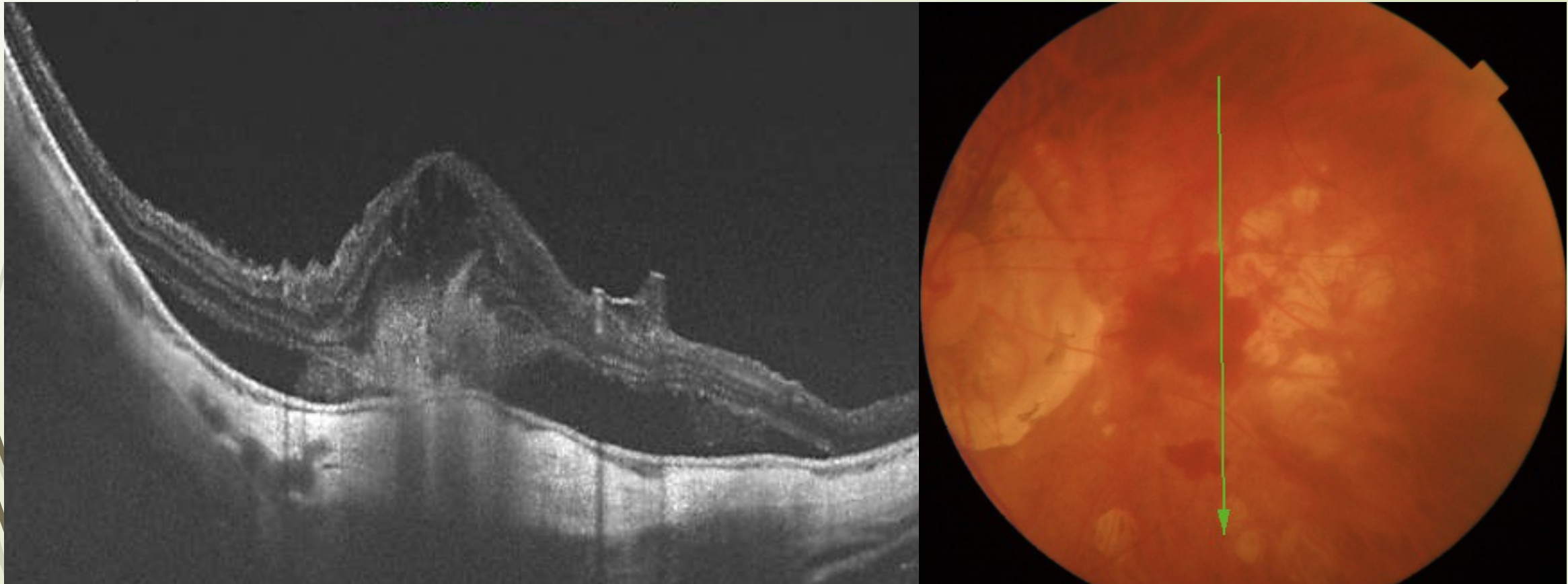
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Myopic Choroidal Neovascular Membranes (CNVMs)

Diagnosis: Imaging

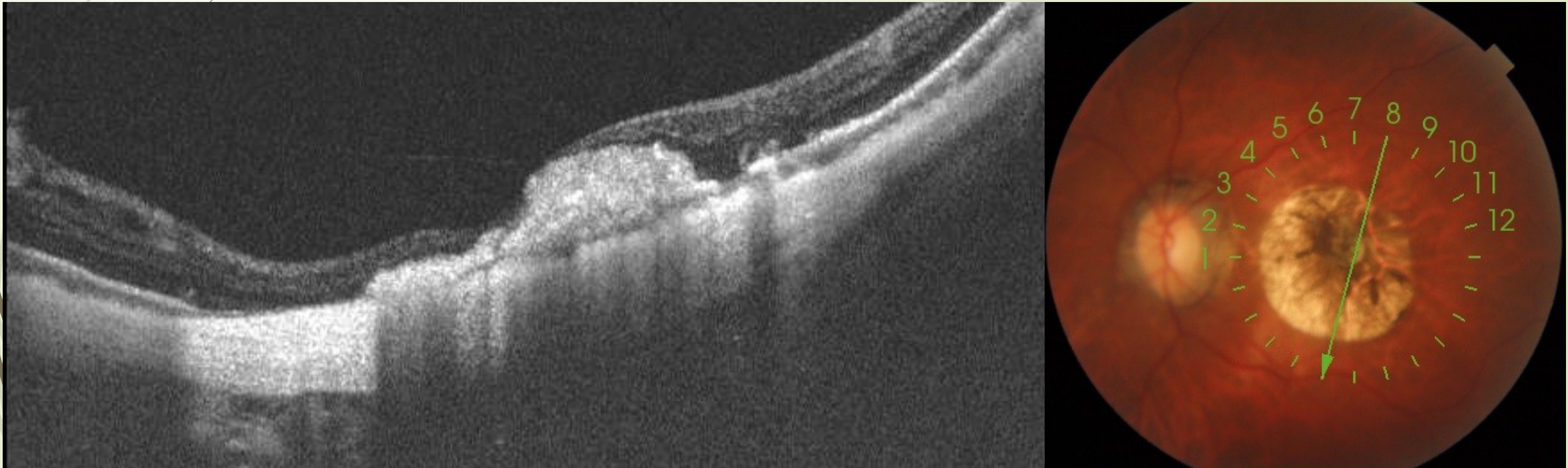
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Myopic Choroidal Neovascular Membranes (CNVMs)

Diagnosis: Imaging

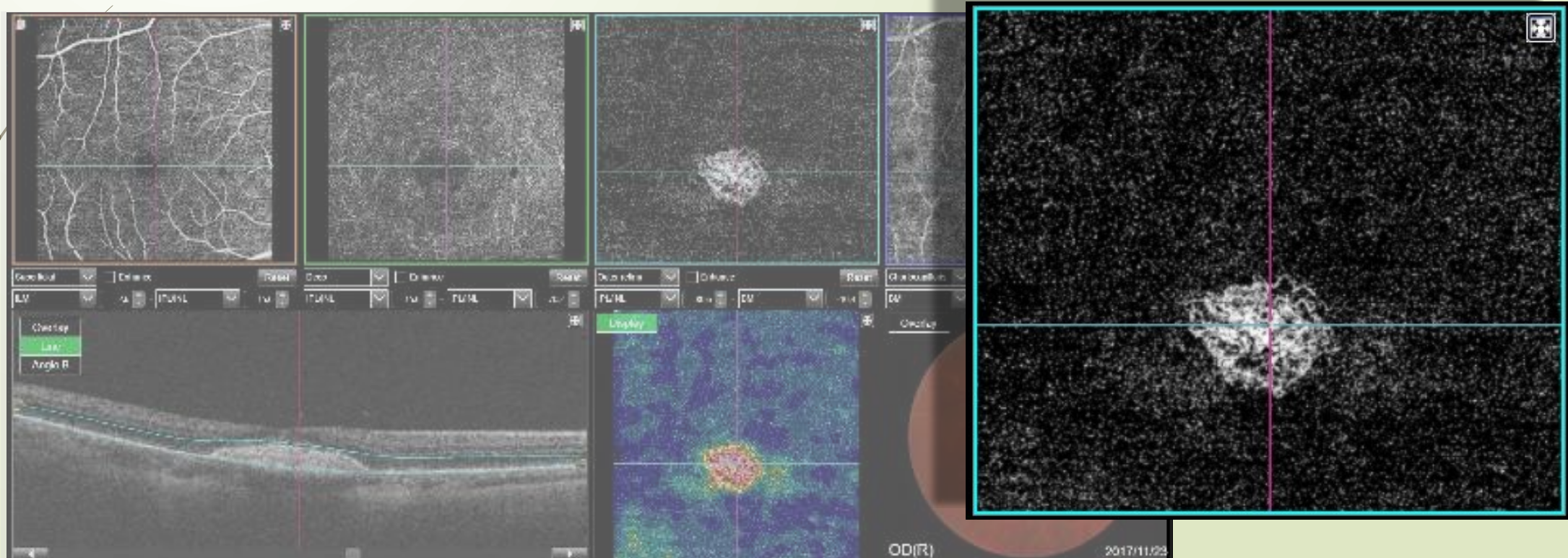
OCT : In the scar stage, only the surface of the CNV shows high reflectivity, and in the atrophic stage, the CNV flattens but an increase in surrounding choroidal reflectivity is observed due to CRA



Myopic Choroidal Neovascular Membranes (CNVMs)

Diagnosis: Imaging

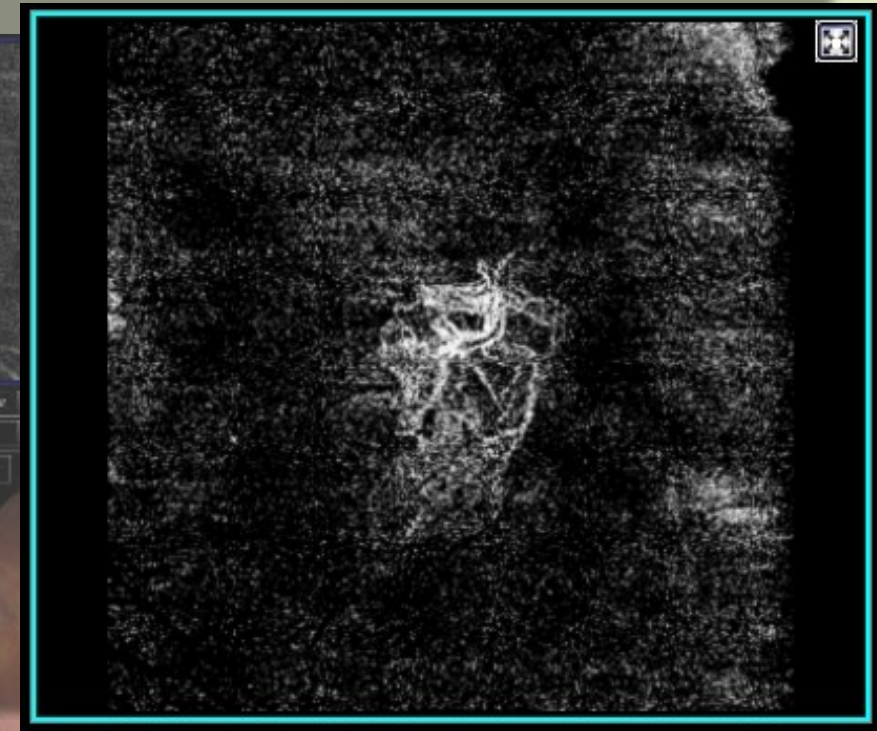
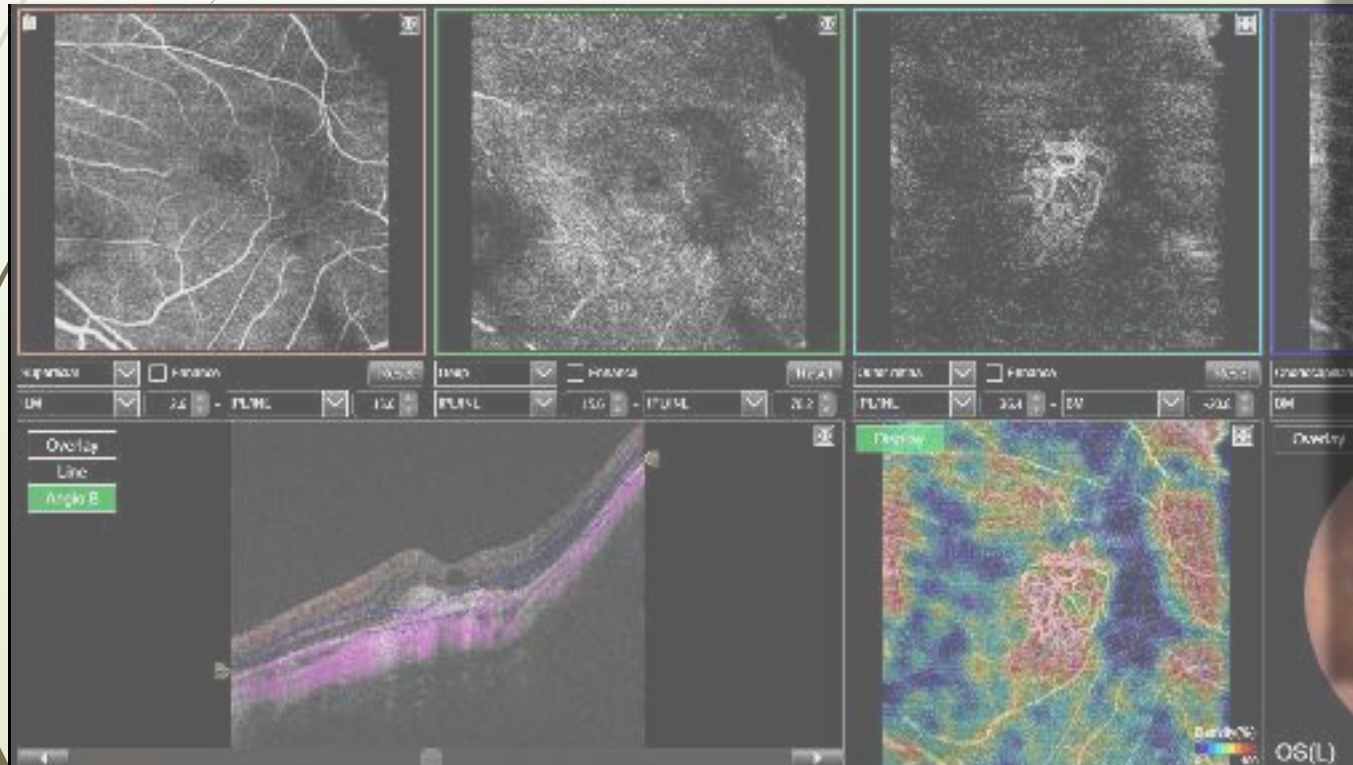
OCTA : circular or irregular, margins could be well defined or poorly defined and appearance could be *interlacing or tangled/disorganized vascular loops*, active lesions are primarily interlacing, while inactive networks appear primarily tangled



Myopic Choroidal Neovascular Membranes (CNVMs)

Diagnosis: Imaging

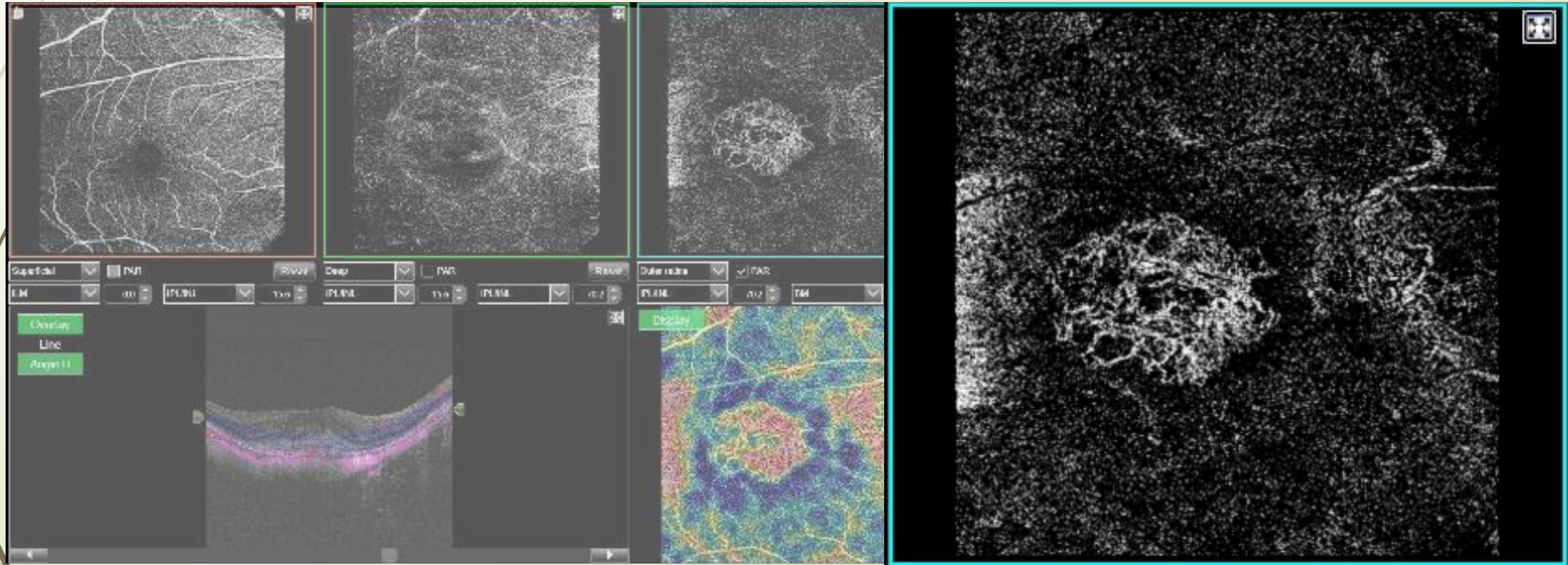
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Myopic Choroidal Neovascular Membranes (CNVMs)

Diagnosis: Imaging

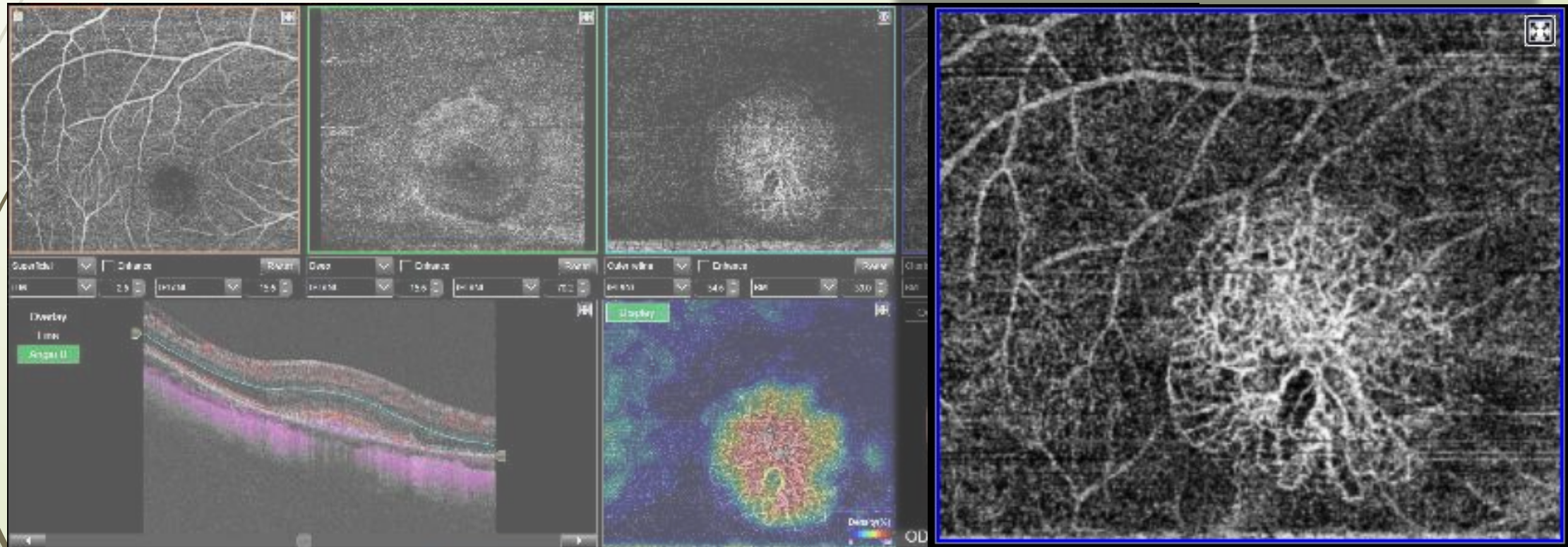
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Myopic Choroidal Neovascular Membranes (CNVMs)

Diagnosis: Imaging

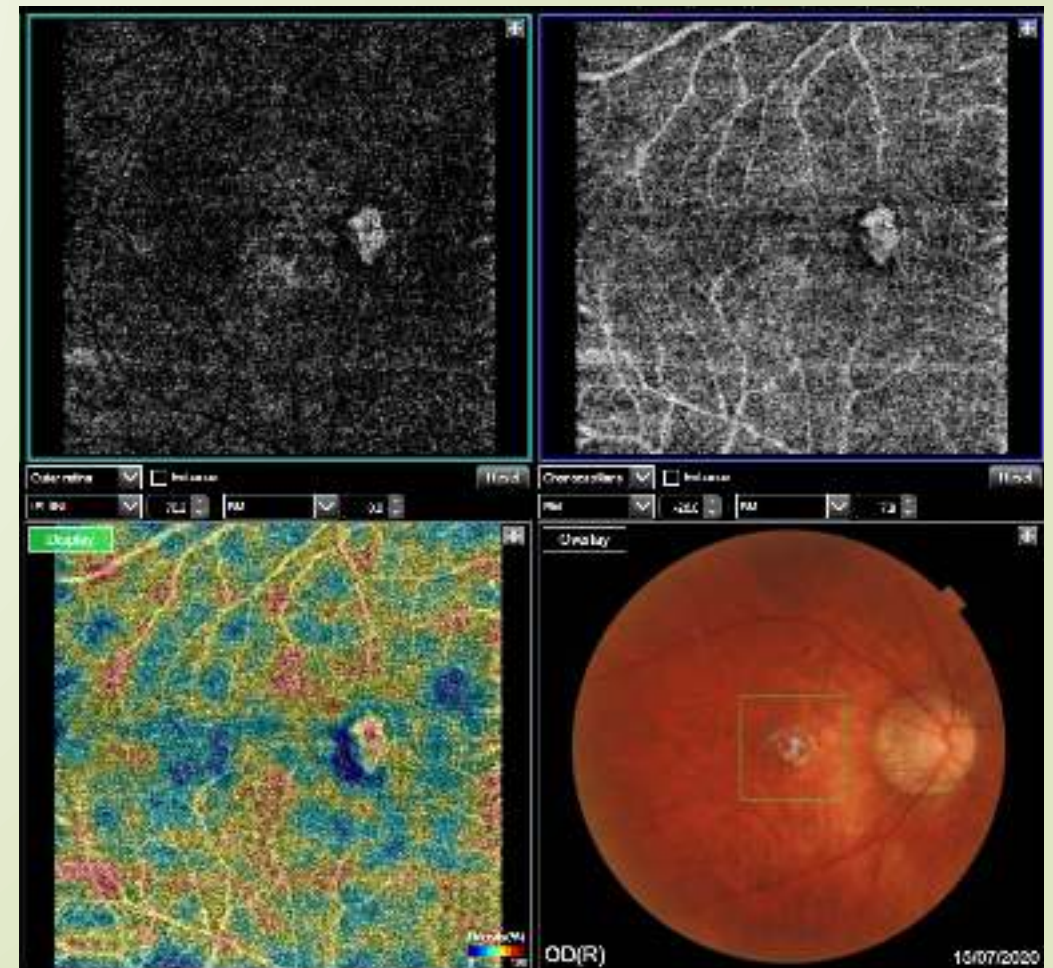
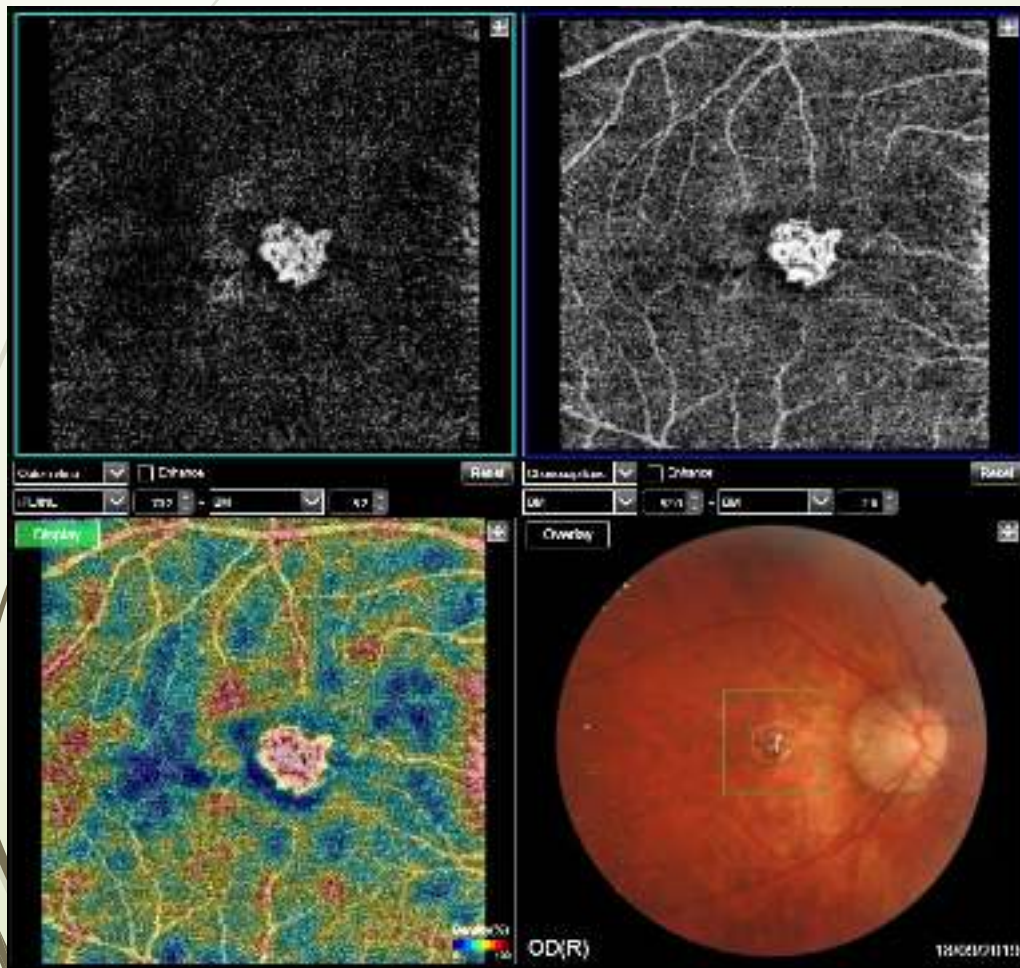
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Myopic Choroidal Neovascular Membranes (CNVMs)

Diagnosis: **Imaging**

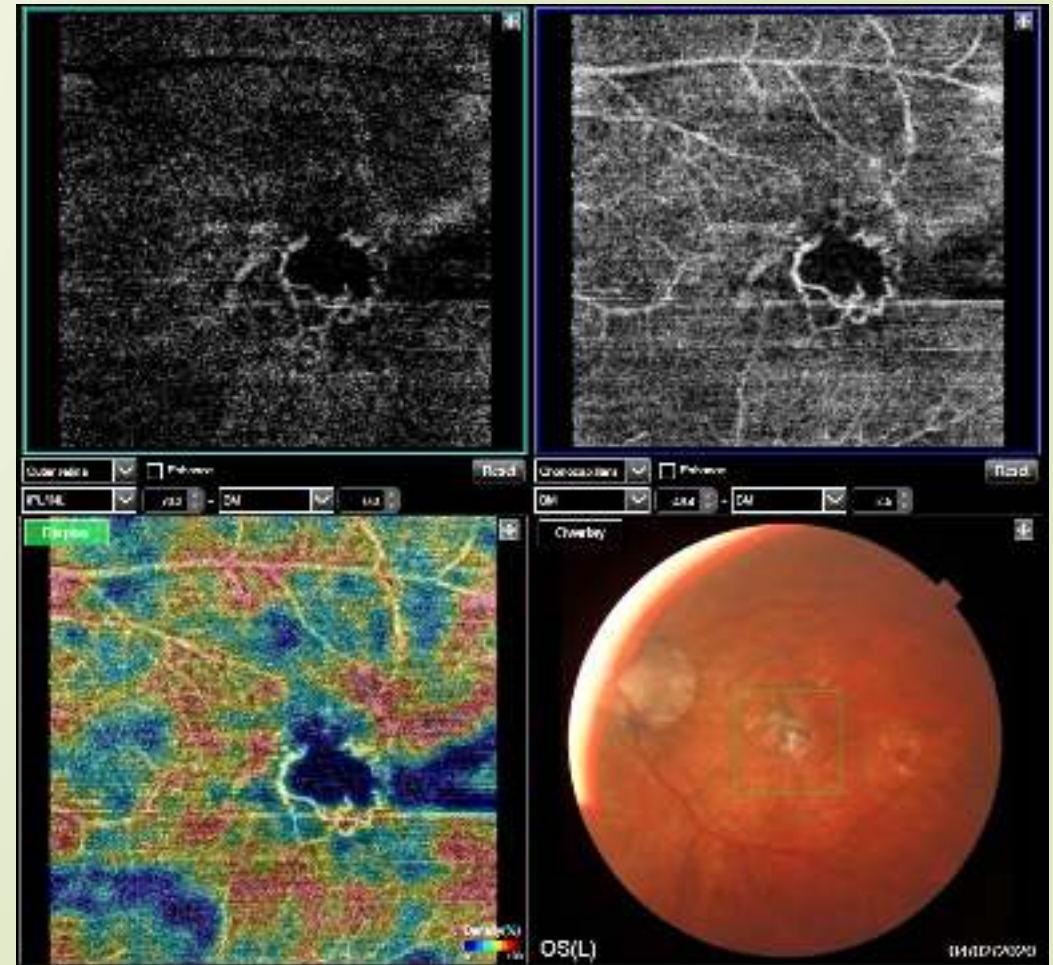
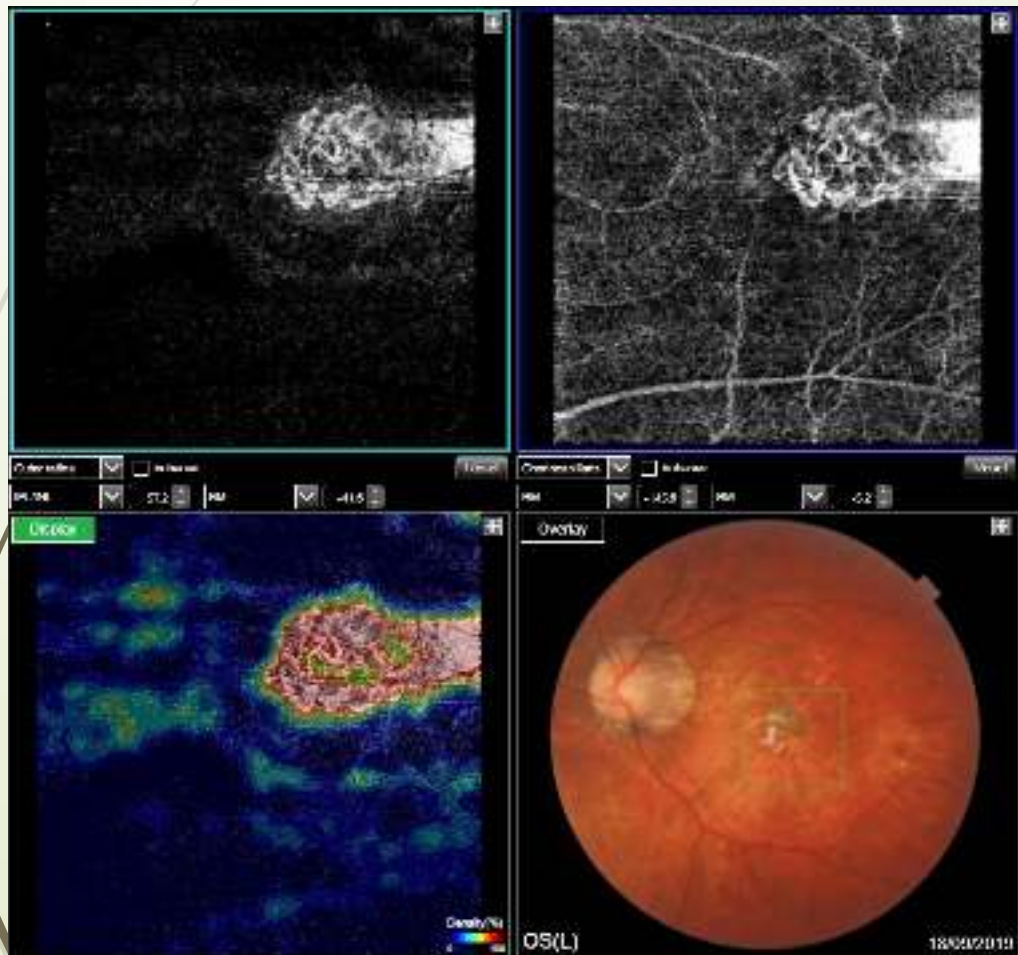
OCTA : follow up changes with treatment



Myopic Choroidal Neovascular Membranes (CNVMs)

Diagnosis: **Imaging**

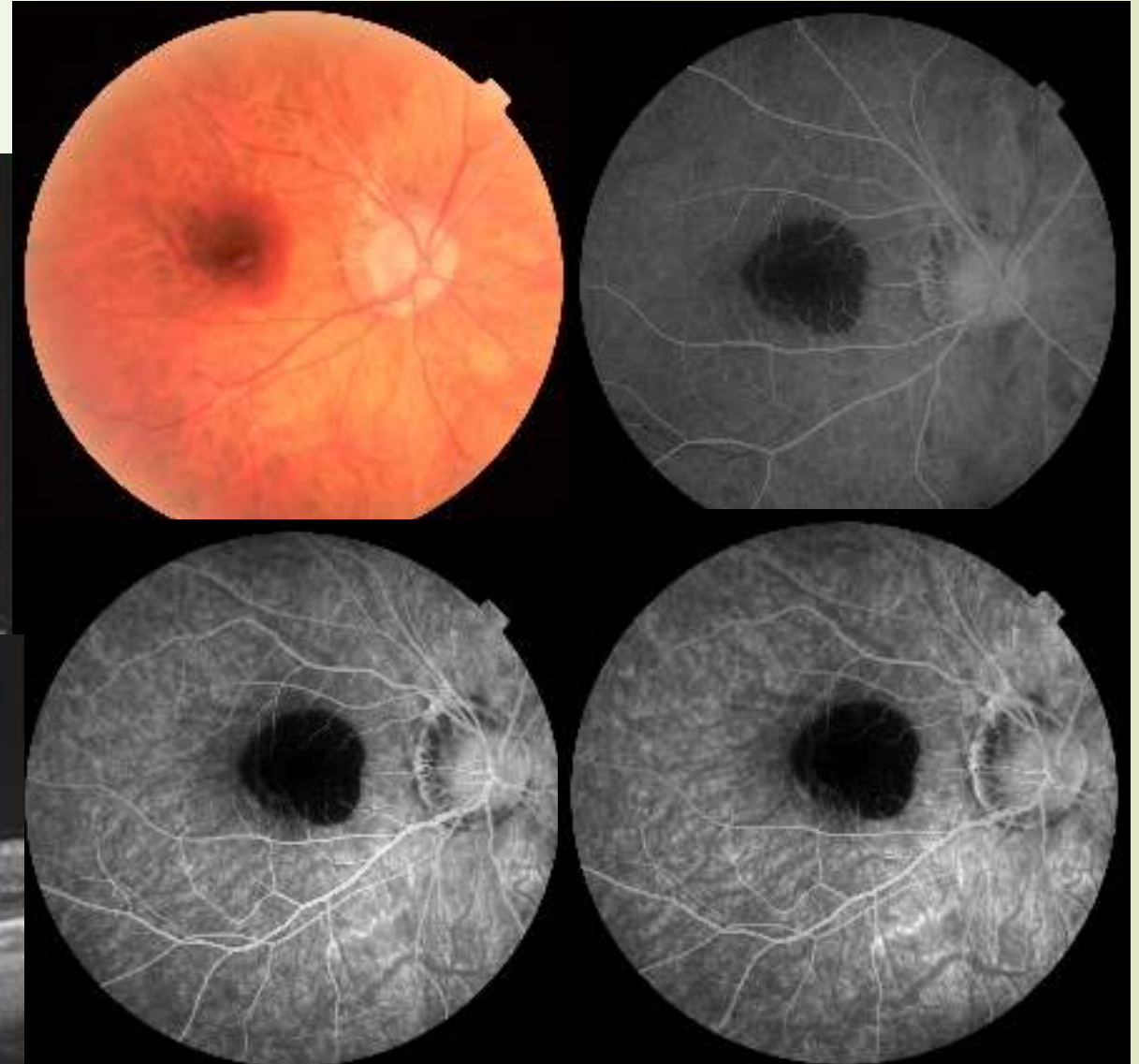
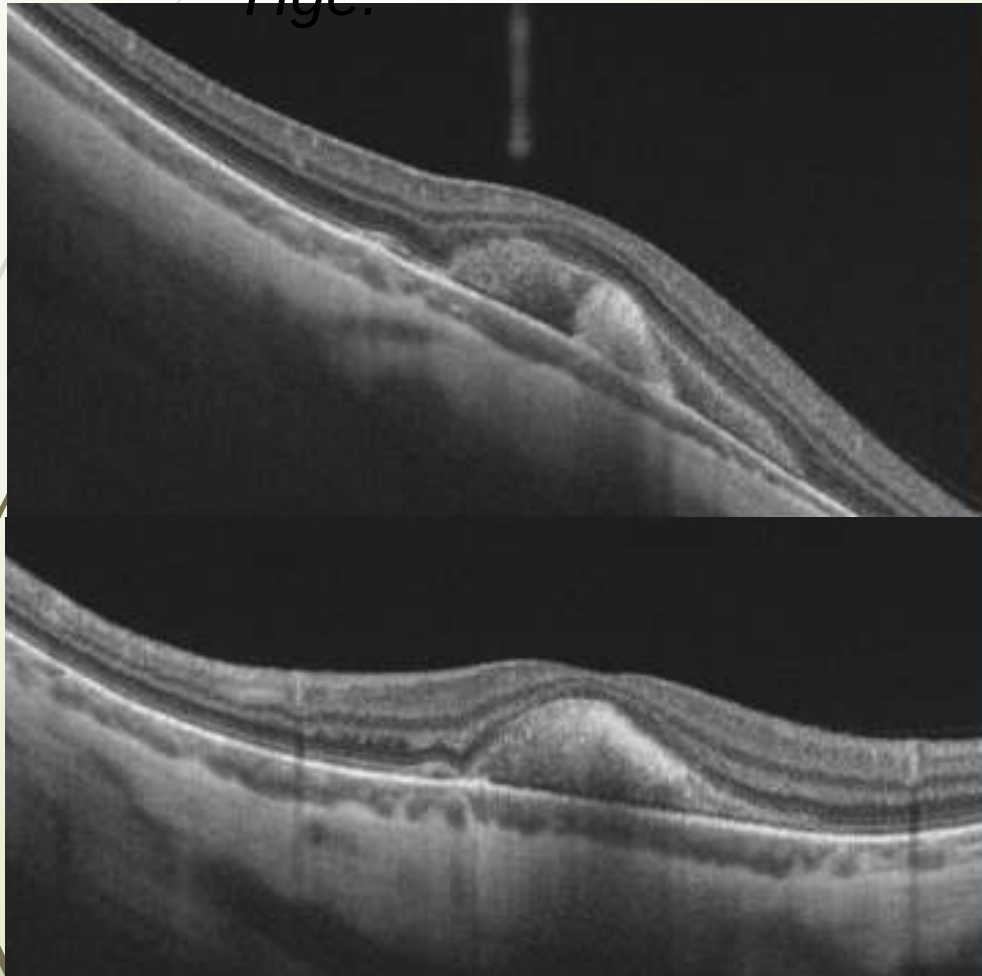
OCTA : follow up changes with treatment



Myopic Choroidal Neovascular Membranes (CNVMs)

Differential Diagnosis:

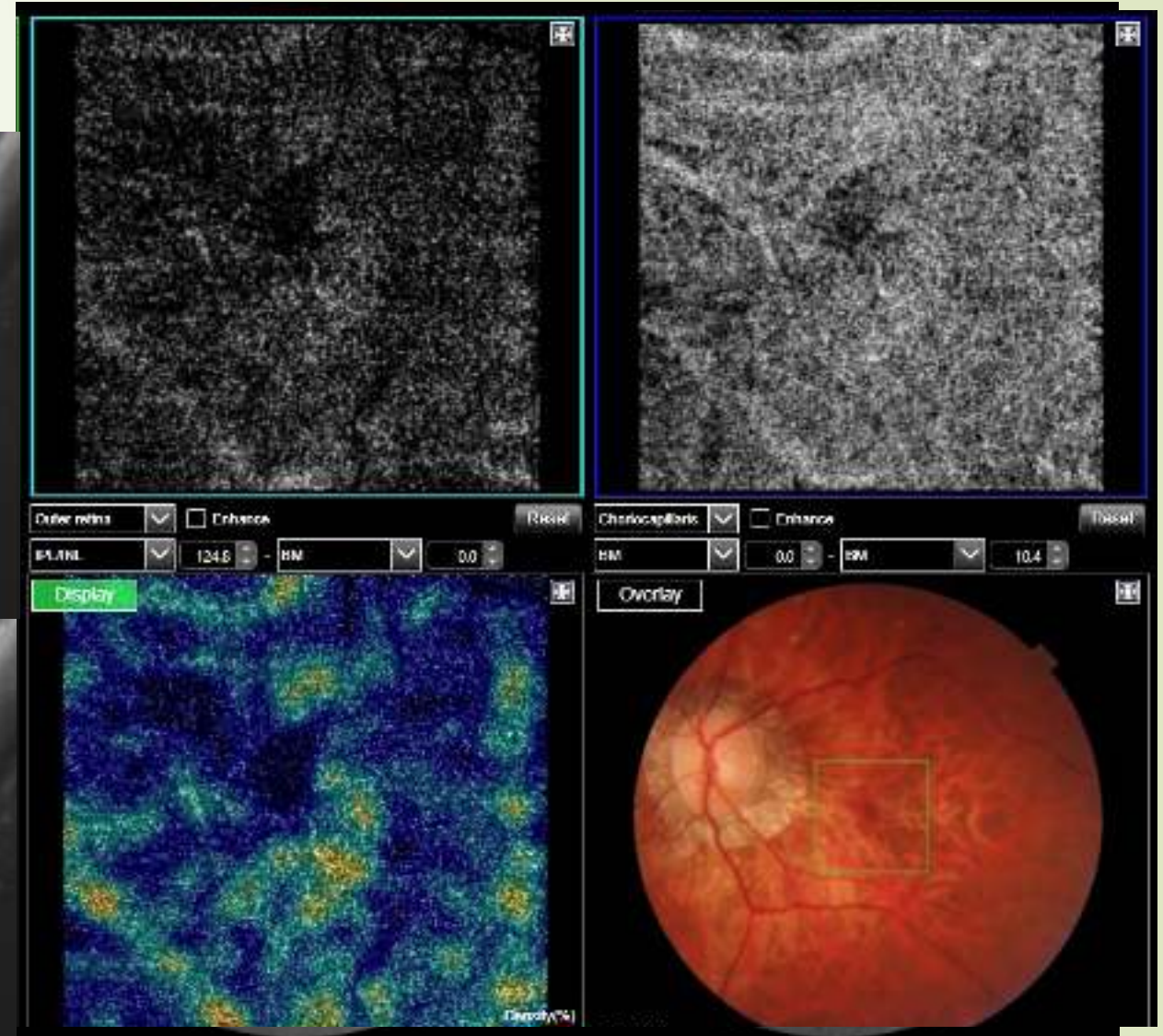
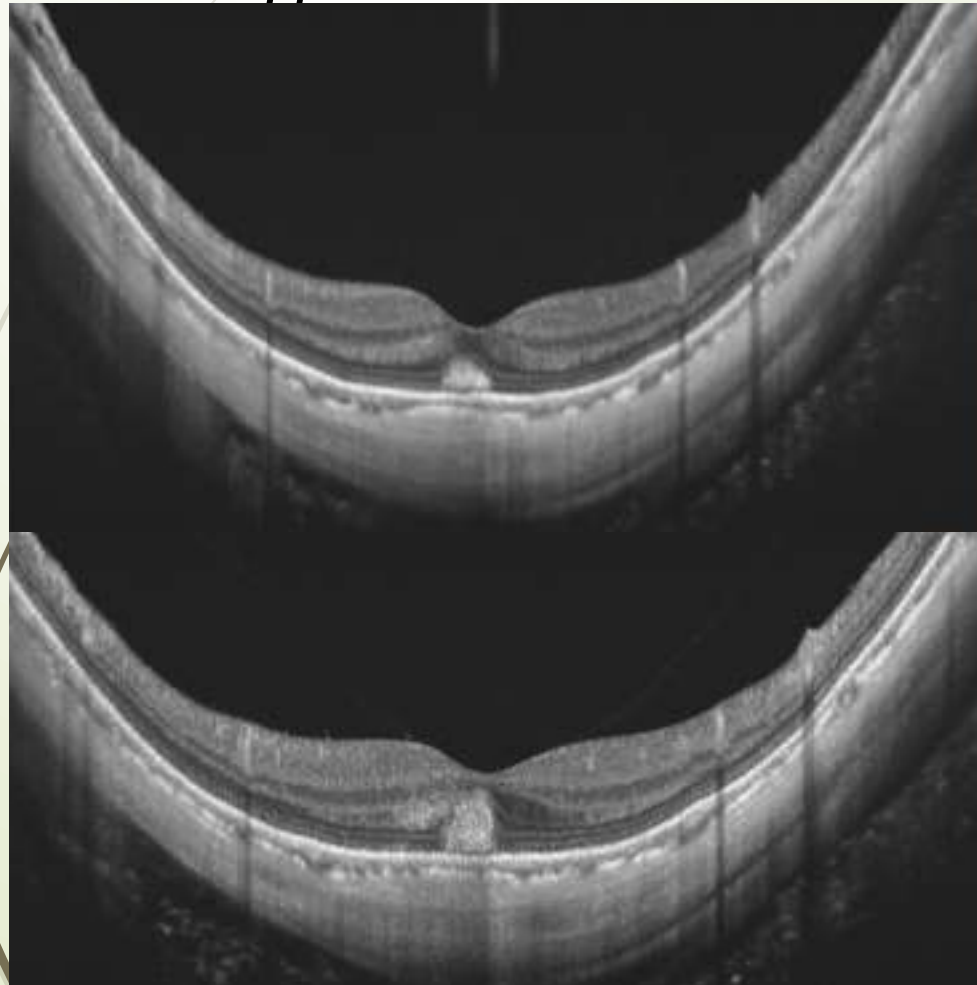
Myopic Macular
Hge.



Myopic CNVM

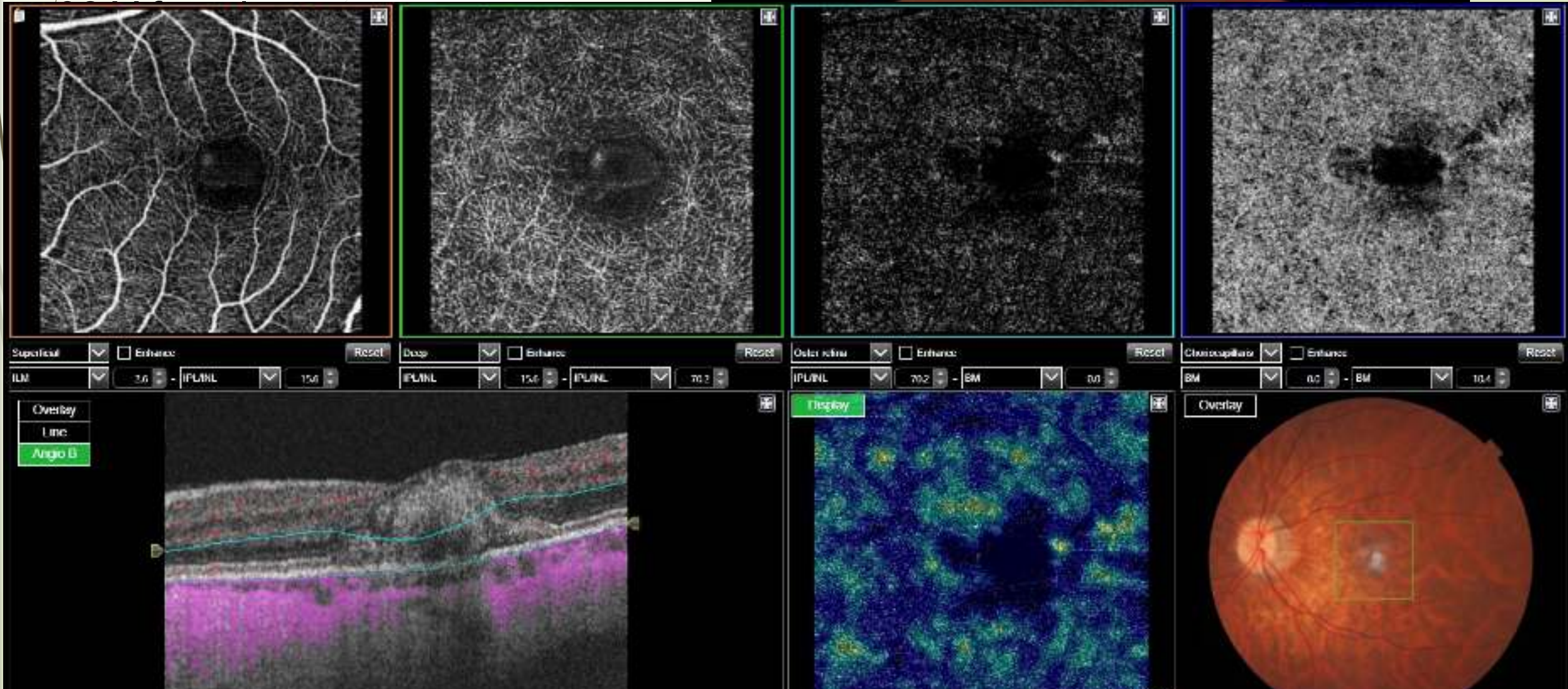
Myopic Choroidal Neovascular Membranes (CNVMs)

**Differential
Diagnosis:**
Myopic Macular
Holes



Myopic Choroidal Neovascular Membranes (CNVMs)

Myopic CNVM

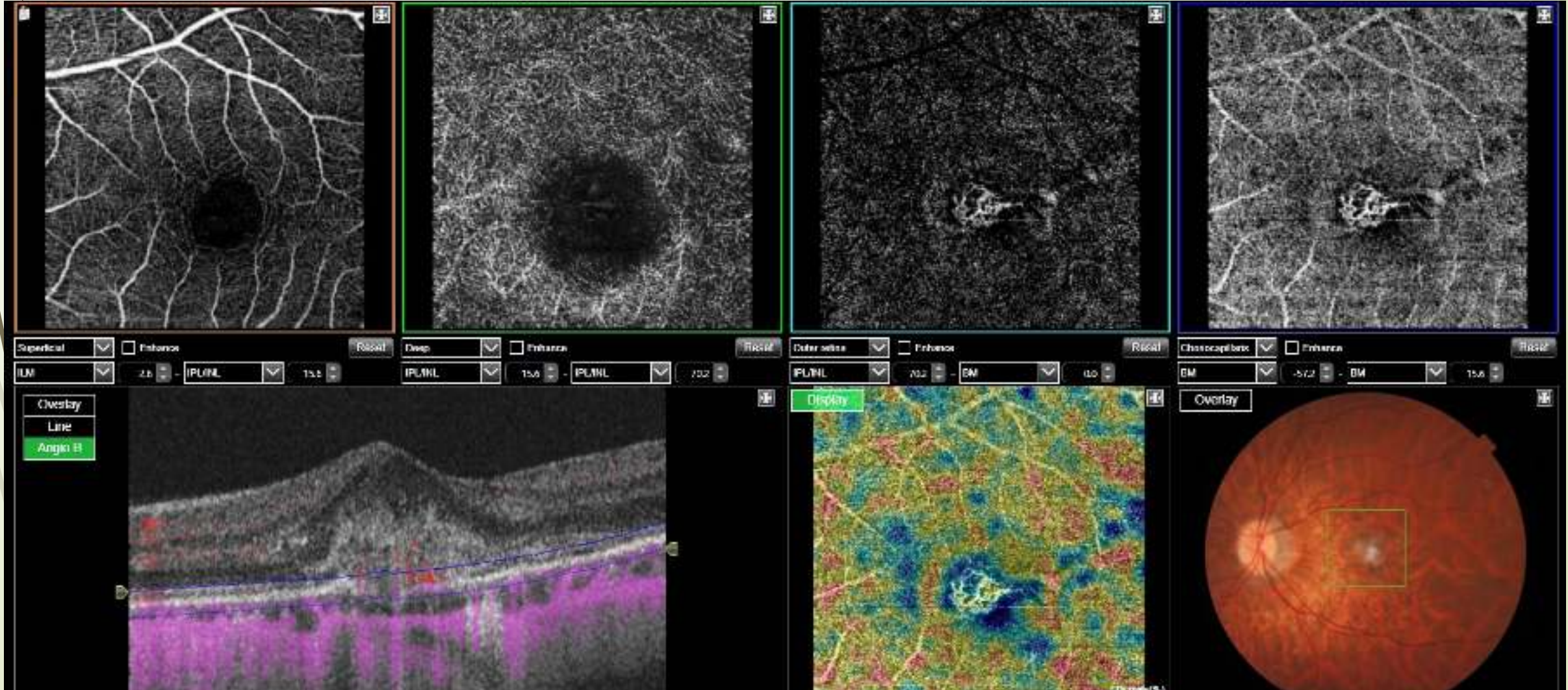


Myopic Choroidal Neovascular Membranes

Myopic CNVM

(CNVMs)

Two weeks later

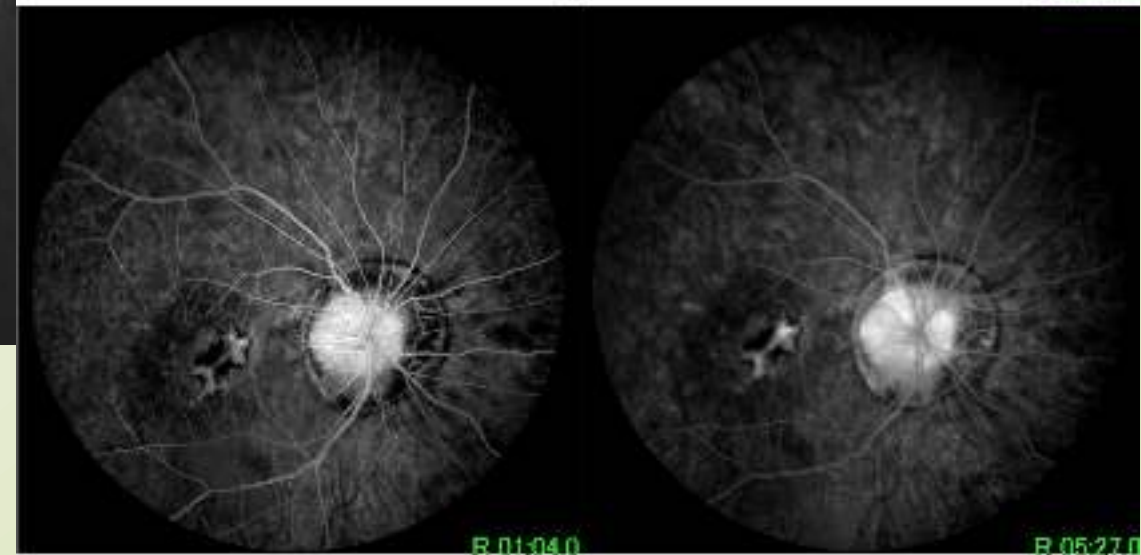
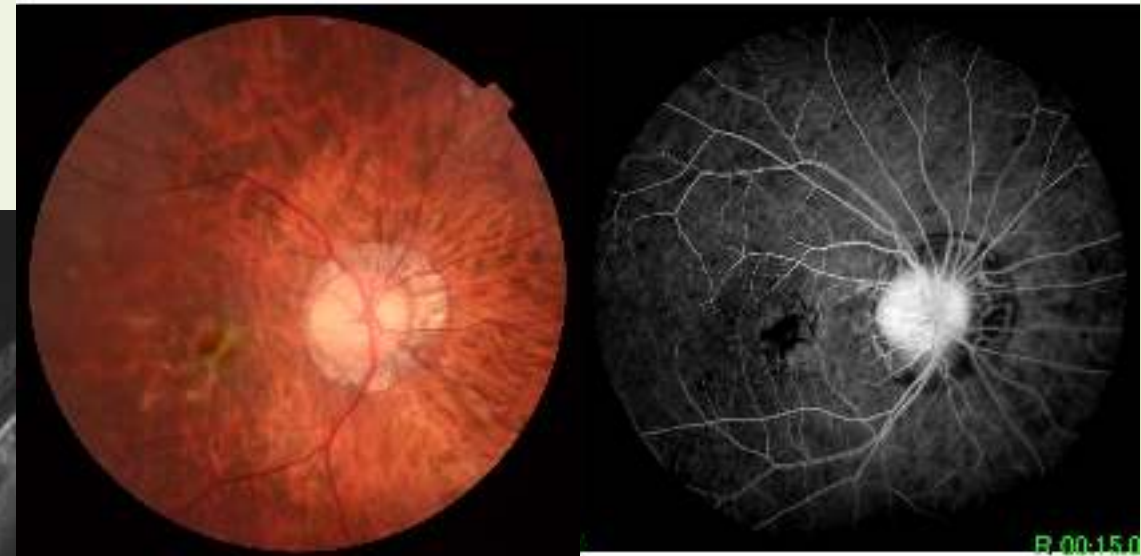
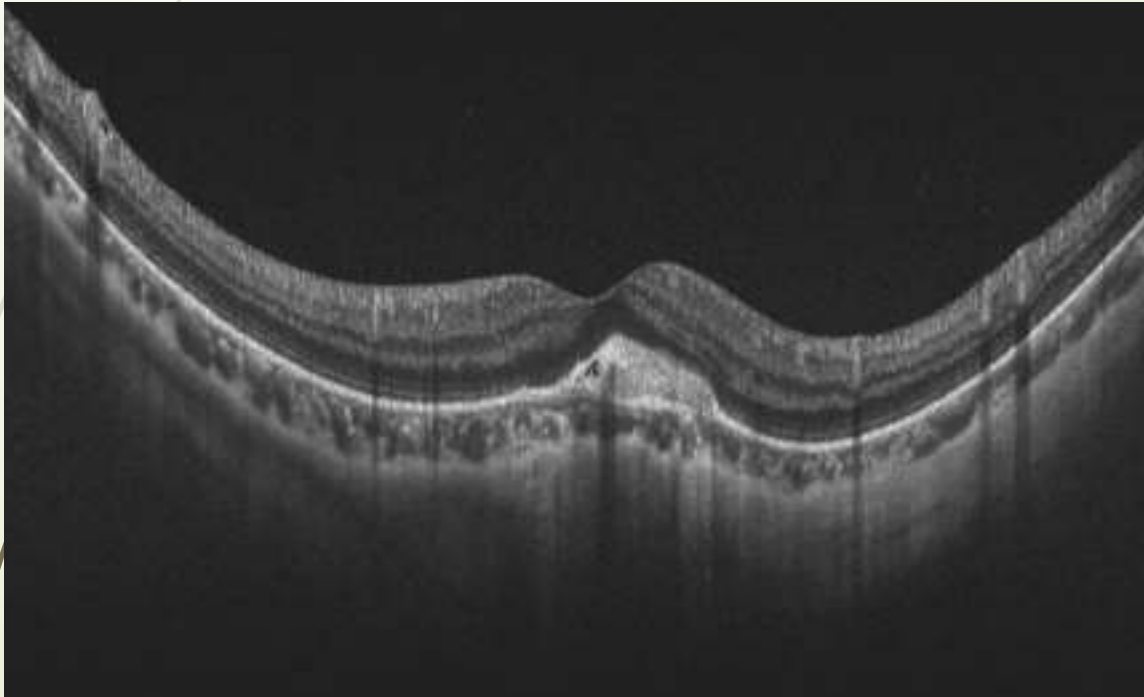


Myopic Choroidal Neovascular Membranes (CNVMs)

Differential

Diagnosis:

Punctate Inner Choroidopathy
(PIC)

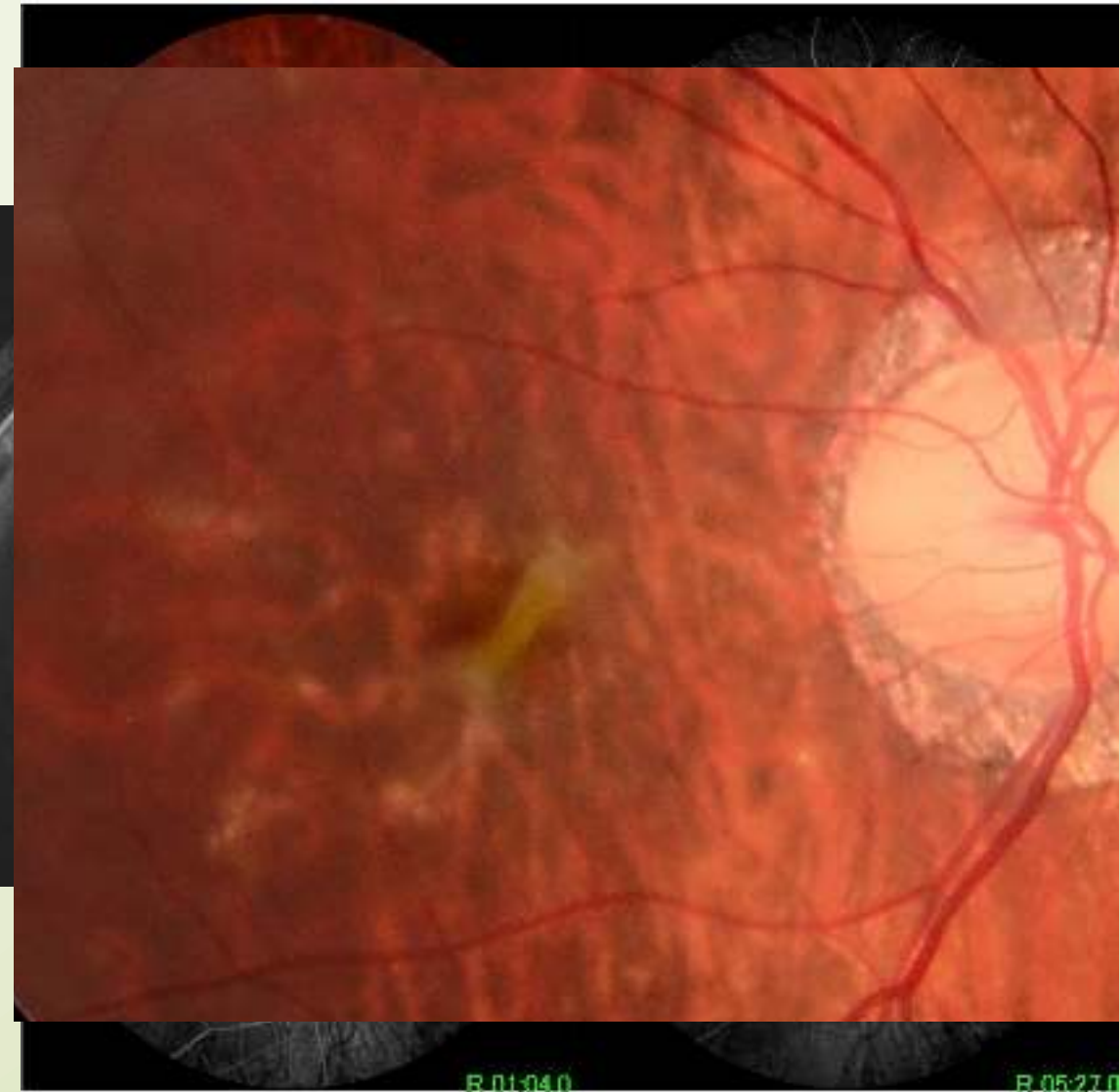
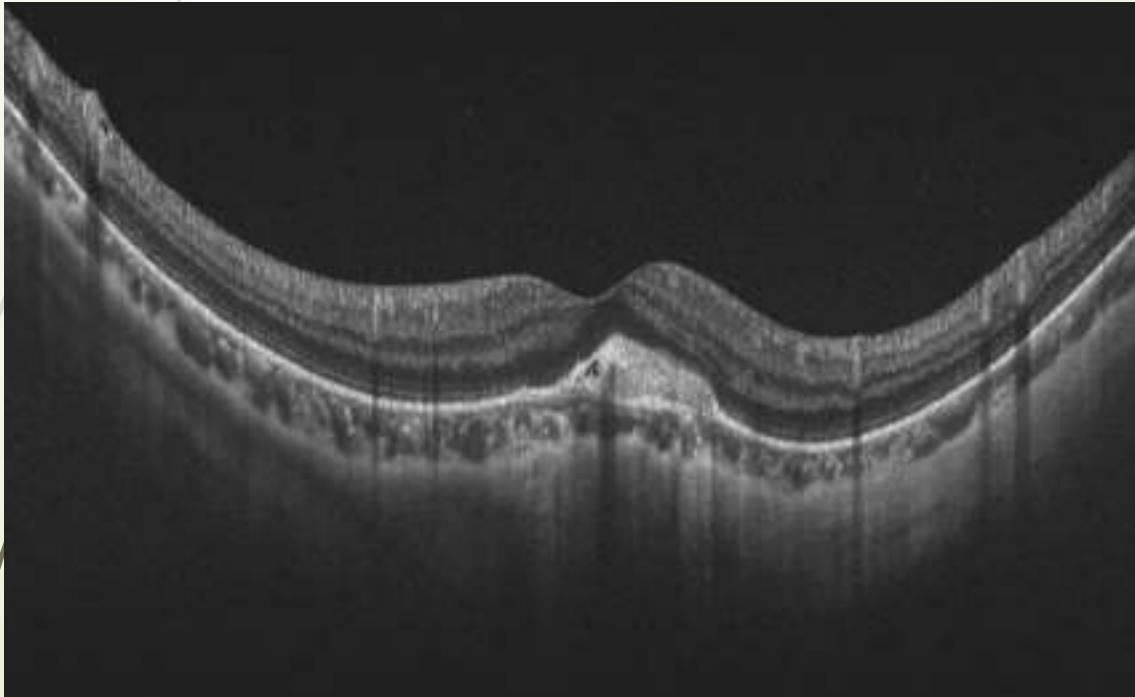


Myopic Choroidal Neovascular Membranes (CNVMs)

Differential

Diagnosis:

Punctate Inner Choroidopathy
(PIC)

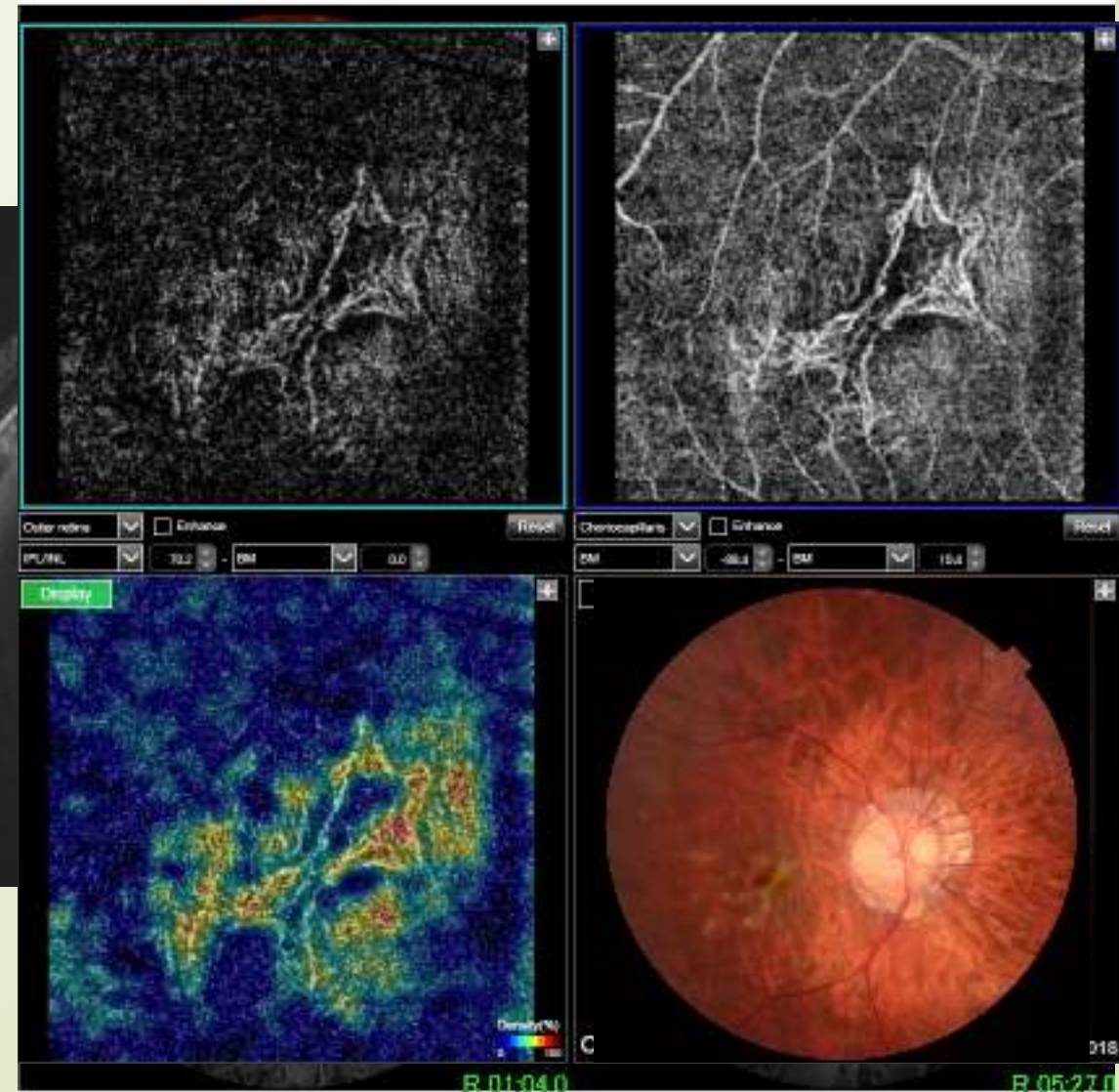
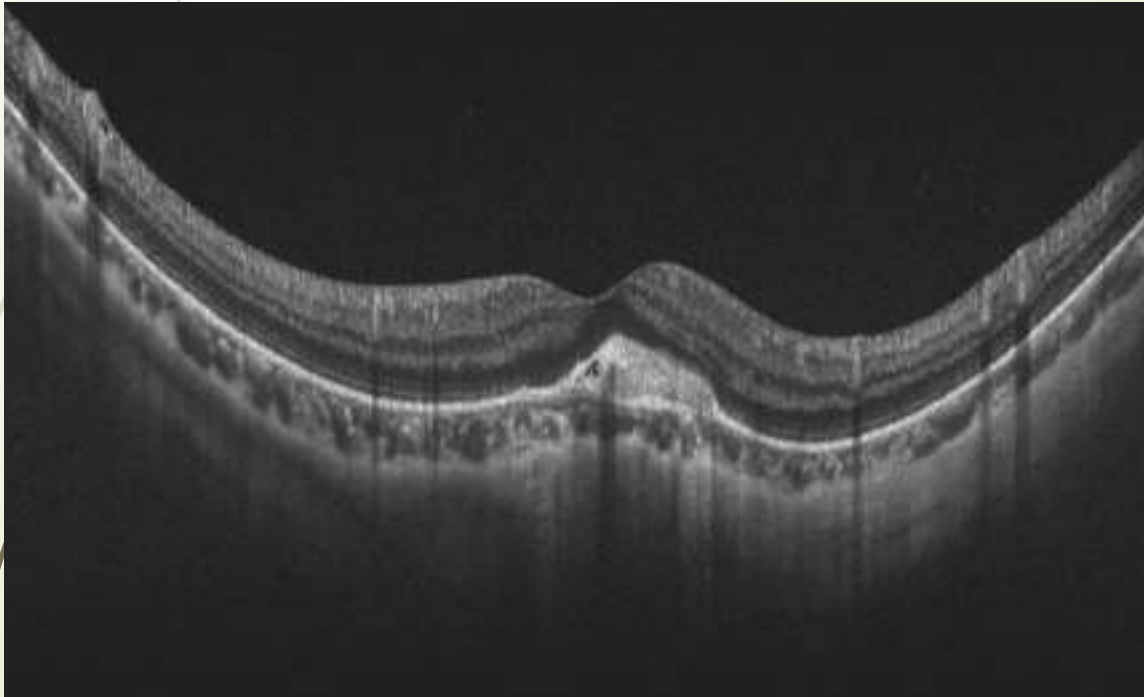


Myopic Choroidal Neovascular Membranes (CNVMs)

Differential

Diagnosis:

*Punctate Inner Choroidopathy
(PIC)*

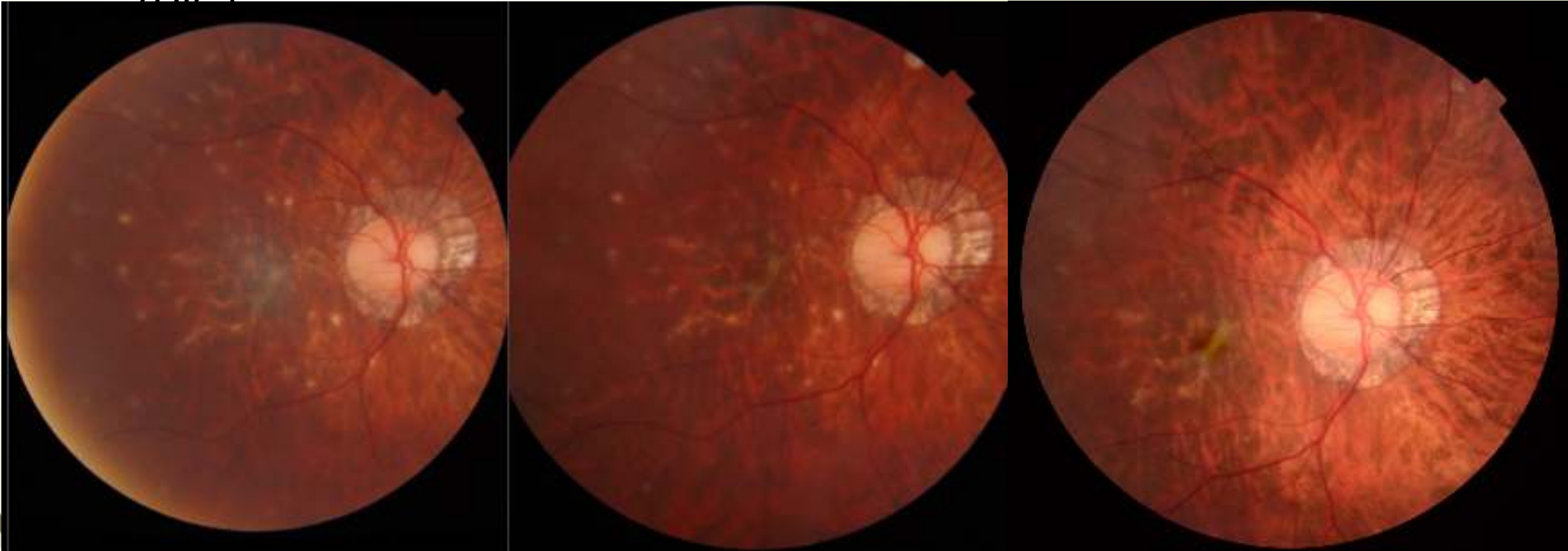


Myopic Choroidal Neovascular Membranes (CNVMs)

Differential

Diagnosis:

*Punctate Inner Choroidopathy
(PIC)*

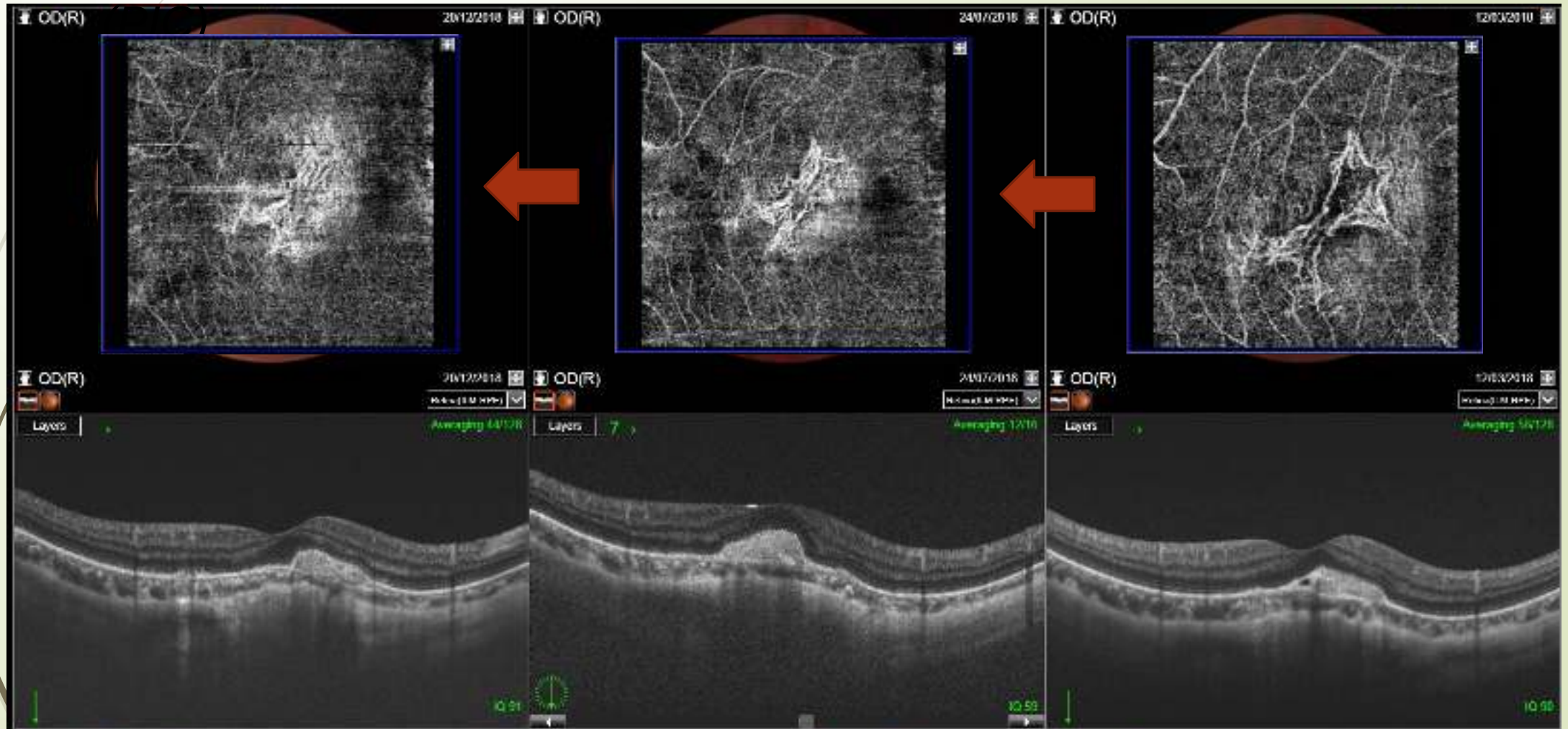


Myopic Choroidal Neovascular Membranes (CNVMs)

Differential

Diagnosis:

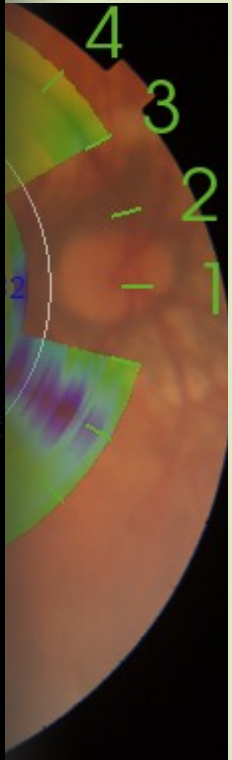
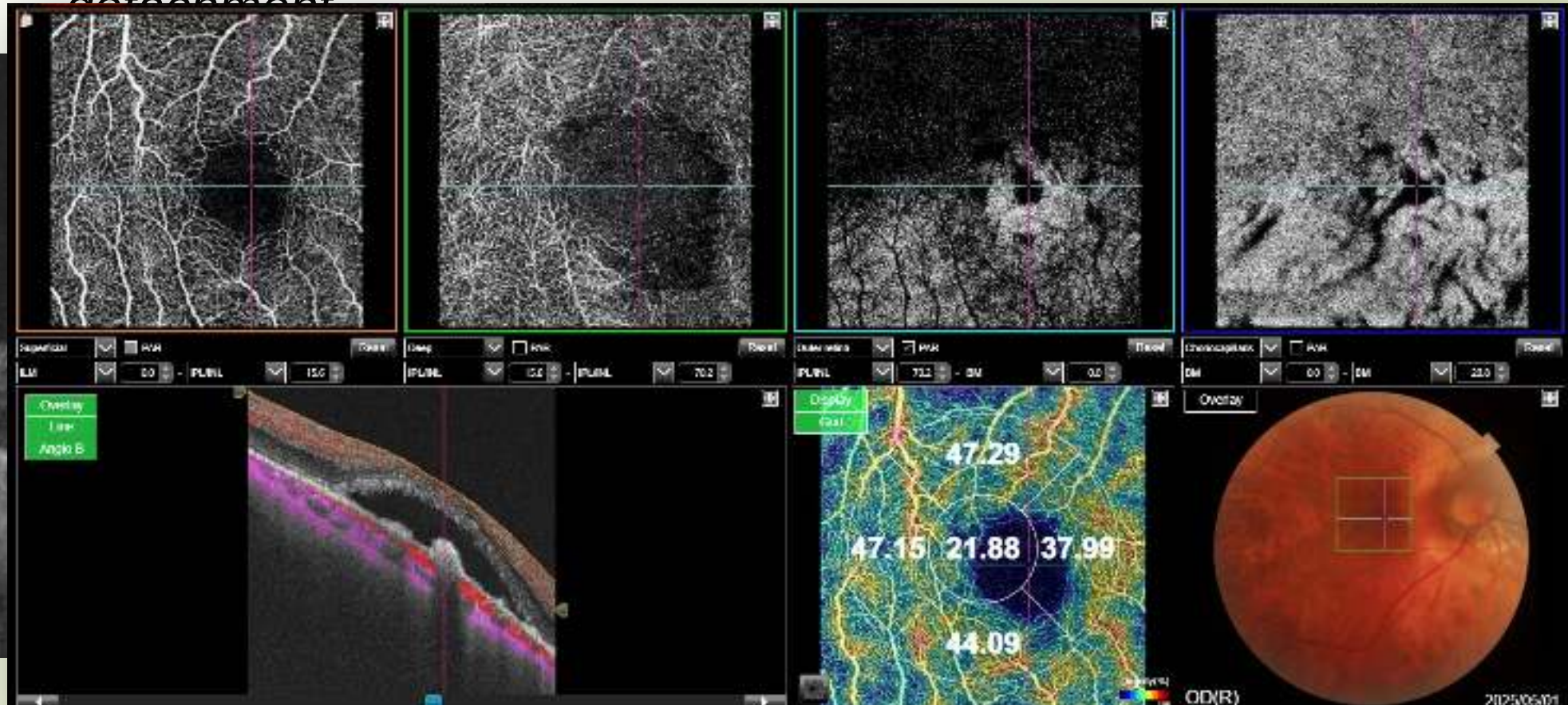
Punctate Inner Choroidopathy



Myopic Choroidal Neovascular Membranes (CNVMs)

Differential Diagnosis:

*Dome-shaped Macula (DSM) serous macular
detachment*



Myopic Choroidal Neovascular Membranes (CNVMs)

Treatment

Intravitreal AntiVGEF *standard of care*

Bevacizumab (1.25 mg / 0.05 ml) case series studies

Ranibizumab (0.5mg / 0.05 ml) RCT

REPAIR & RADIANCE & BRILLIANCE

*study
Aflibercept (2 mg / 0.05 ml)*

RCT

MYRROR study

PRN (as needed)

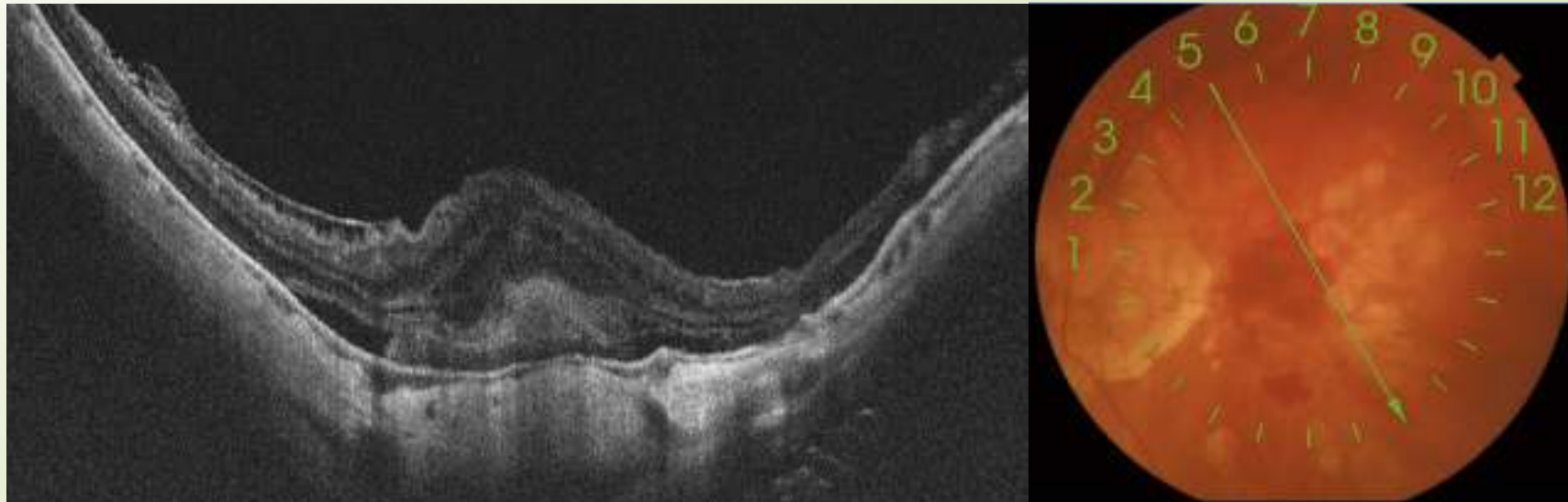
Follow up with OCT , VA/ visual symptoms, ?OCTA

Myopic Choroidal Neovascular Membranes (CNVMs)

Prognosis

Older age, subfoveal location of CNV, larger lesion size and poorer presenting VA are poor prognostic factors for myopic CNV

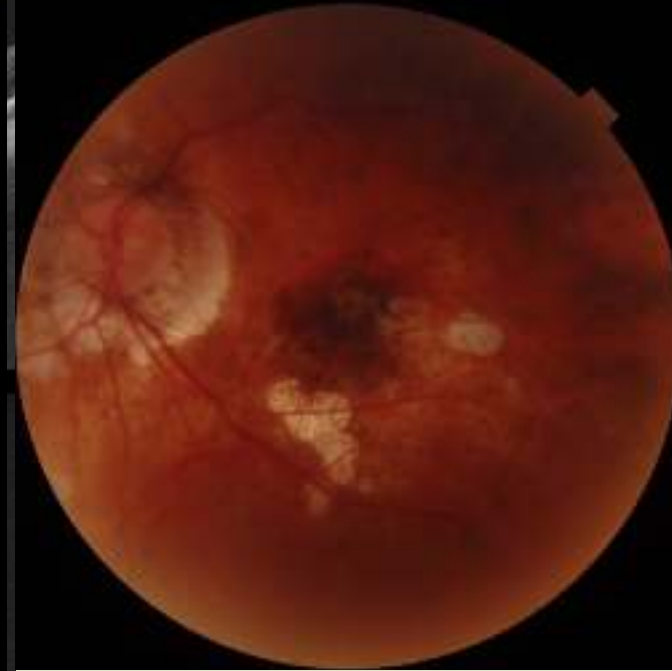
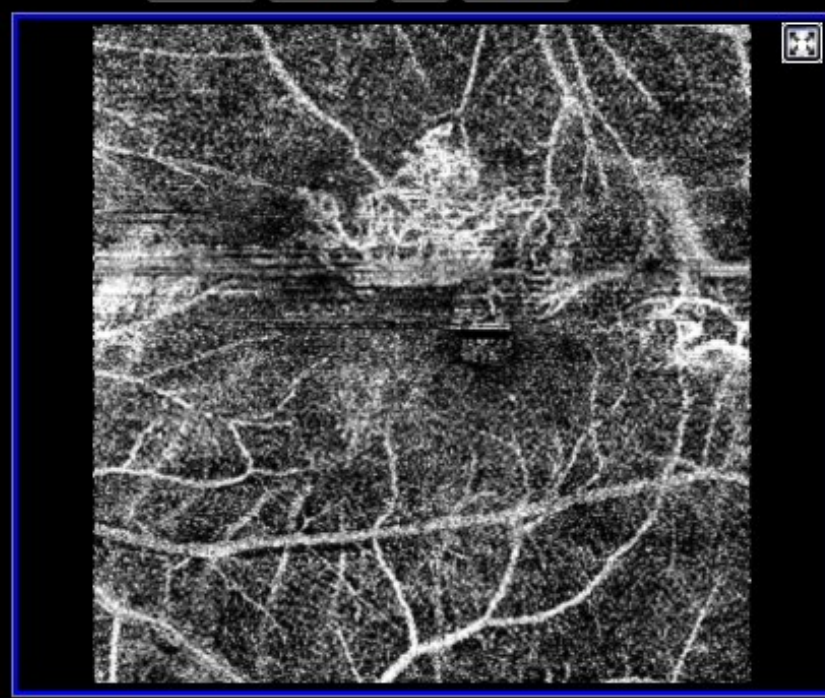
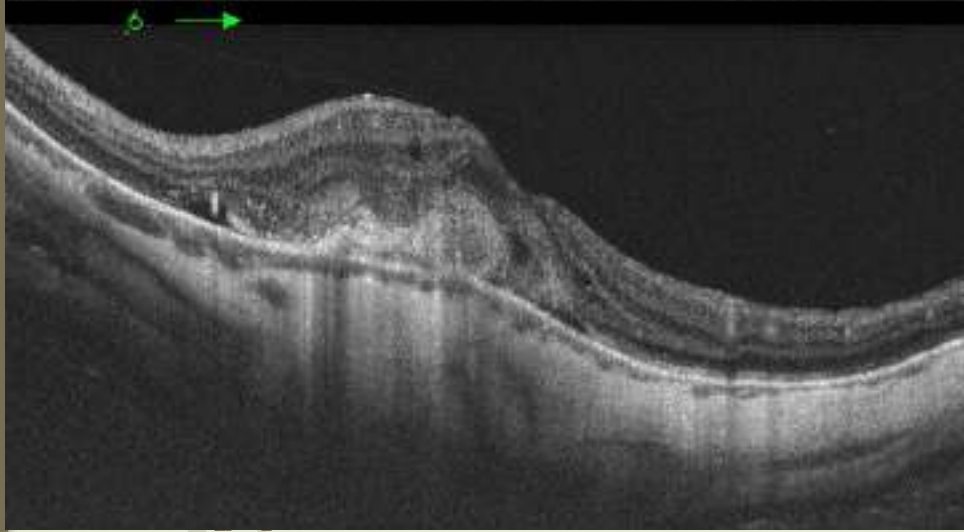
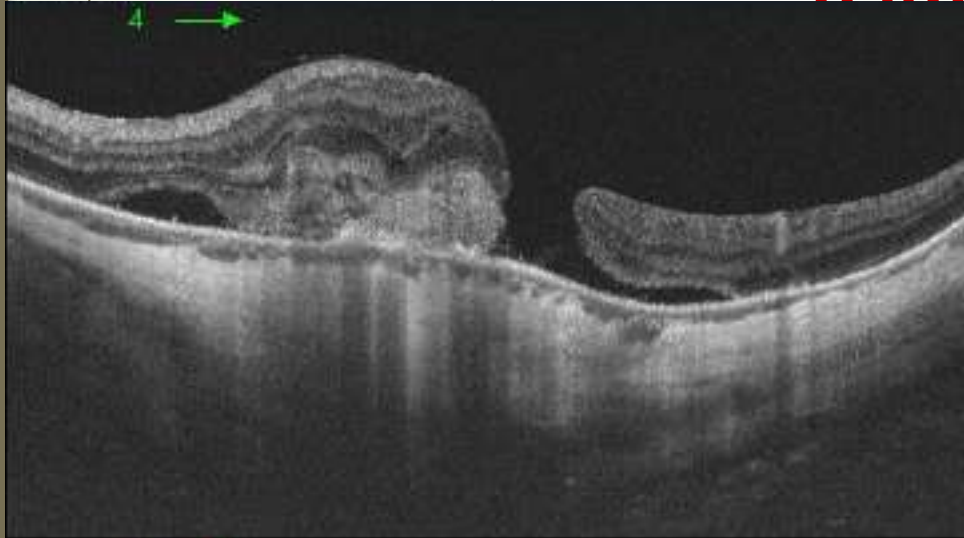
Thinner choroid and lacquer cracks were associated with the need for a higher number of intravitreal injections



Myopic CNVM

Myopic Choroidal Neovascular Membranes (CNVMs)

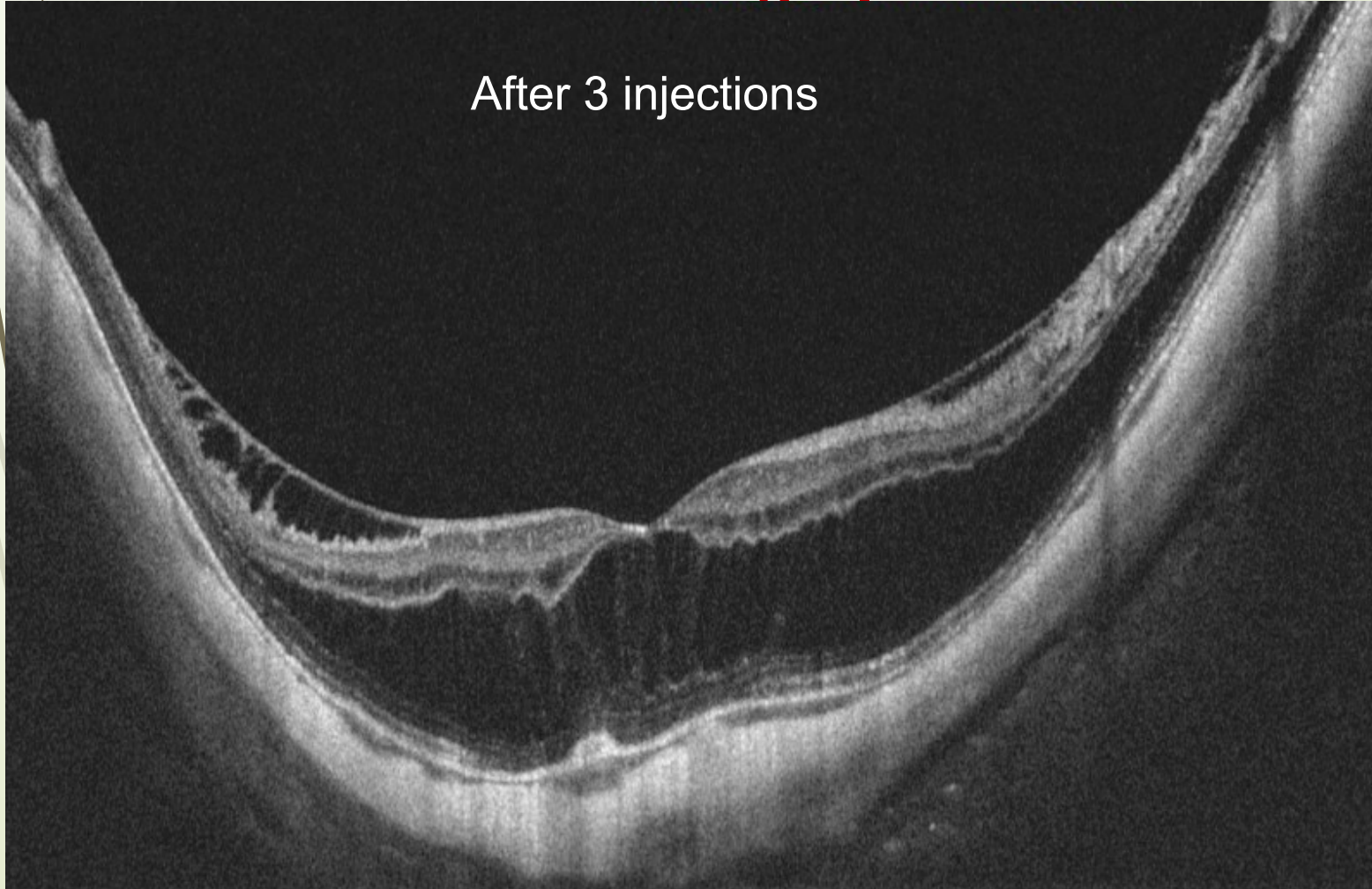
Don't forget other pathologies



Myopic Choroidal Neovascular Membranes (CNVMs)

Don't forget other

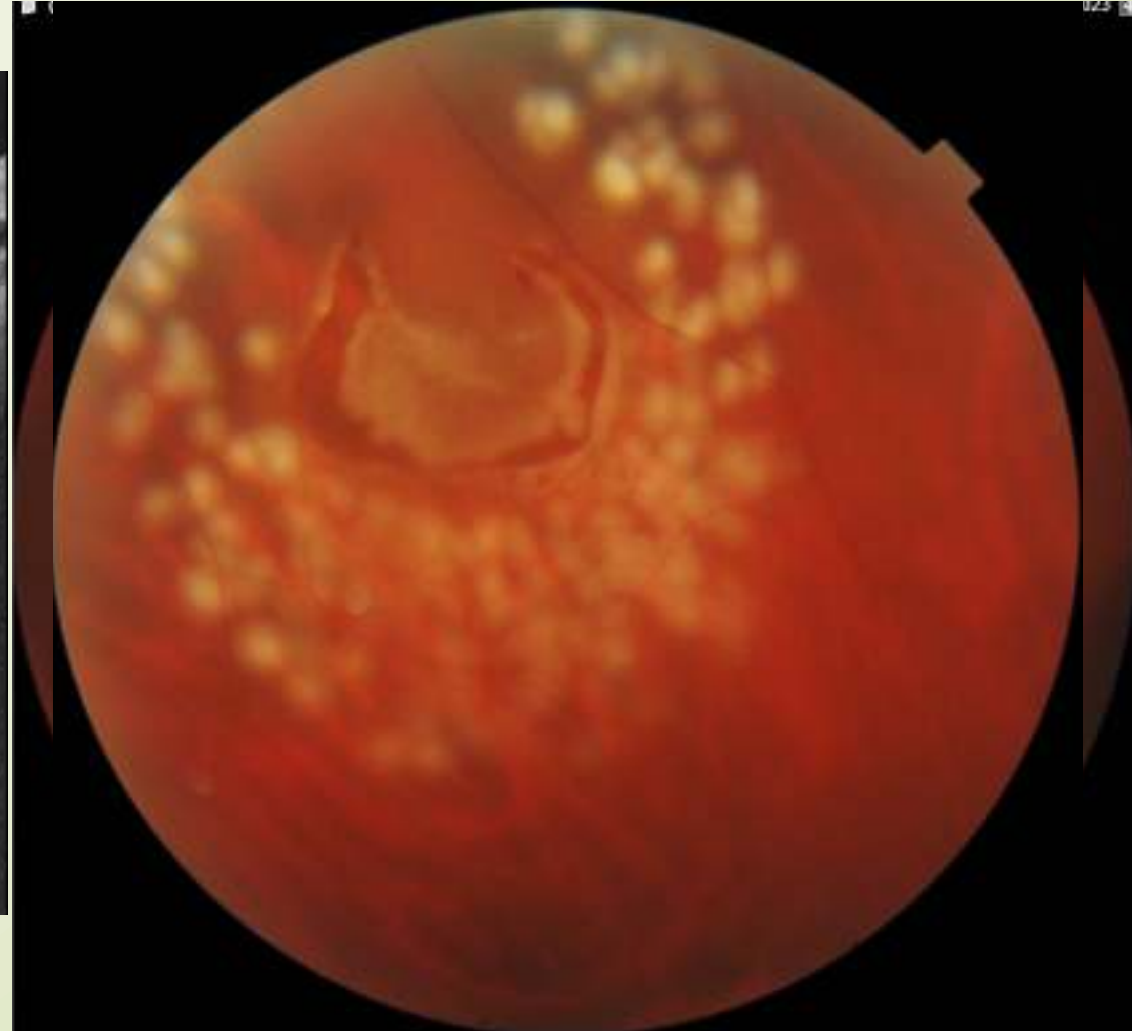
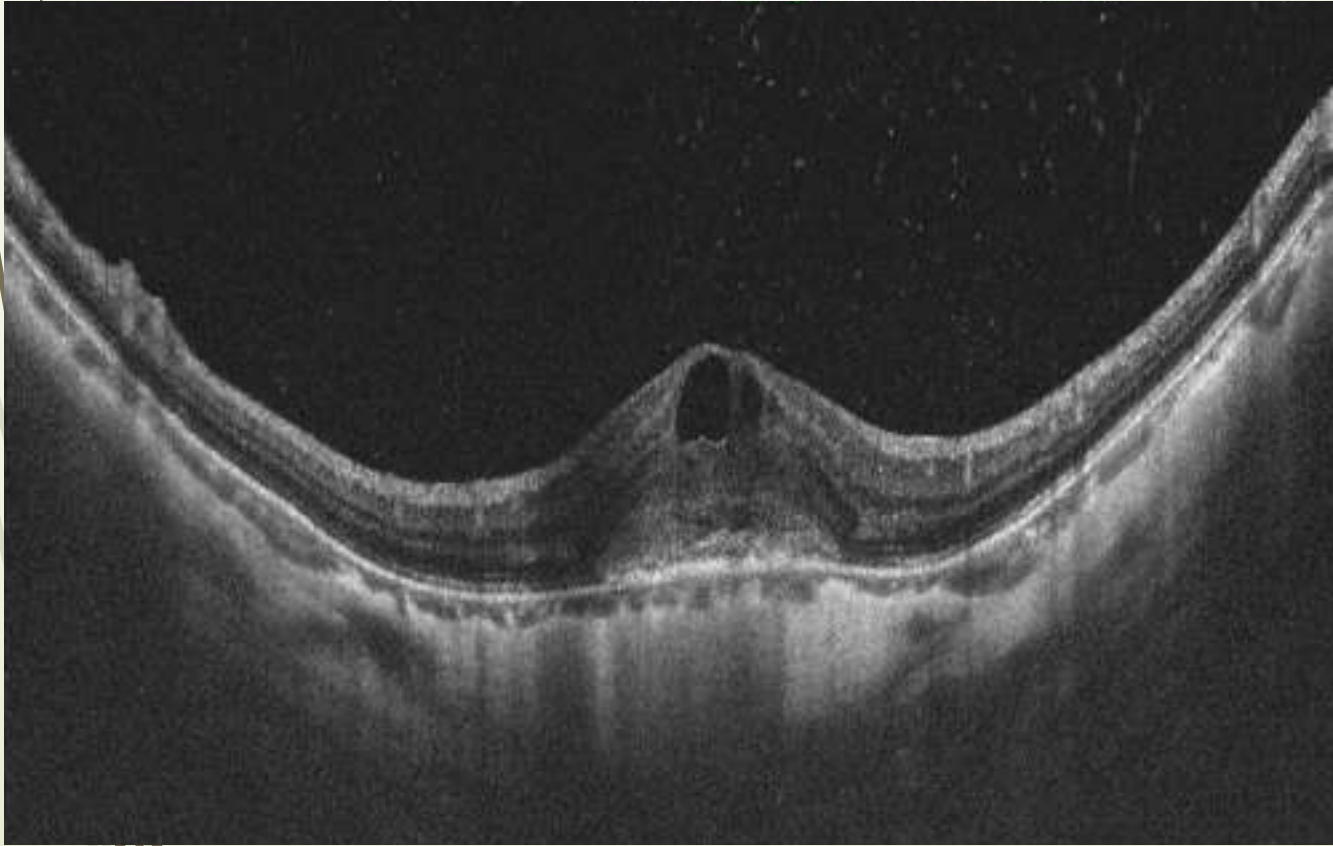
After 3 injections



Myopic CNVM

Myopic Choroidal Neovascular Membranes (CNVMs)

Don't forget other pathologies



Myopic Choroidal Neovascular Membranes (CNVMs)

Conclusion

Myopic CNV is a sight-threatening complication of pathologic myopia

Early, accurate diagnosis with multimodal imaging, early initiation of treatment, and careful post-treatment monitoring are key to achieving good treatment outcomes.

FFA and OCT remain the gold standard for diagnosis, OCTA is helpful to screen for neovascular membranes non invasively

Anti-VEGF therapy with PRN protocol is efficient and safe with low treatment burden.

Thank You

