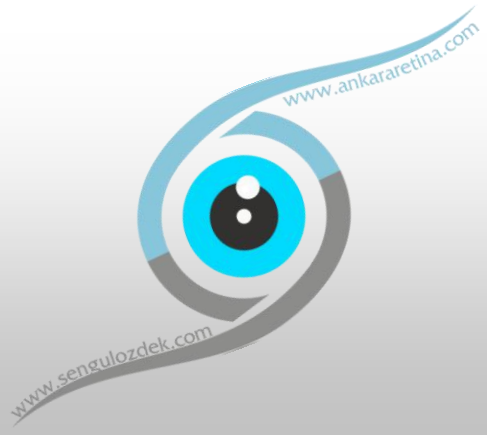


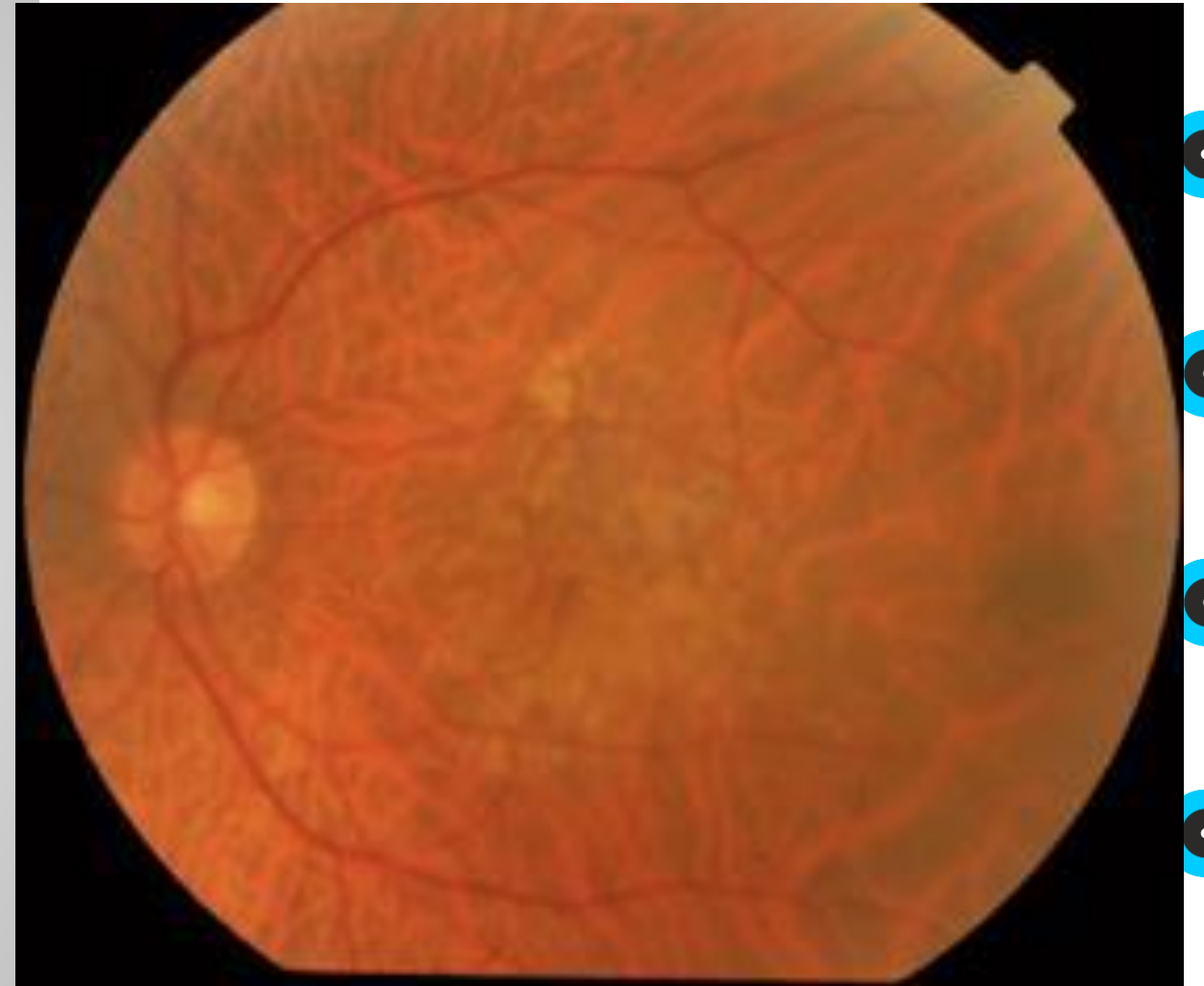
KURU TİP YBMD DE TANI

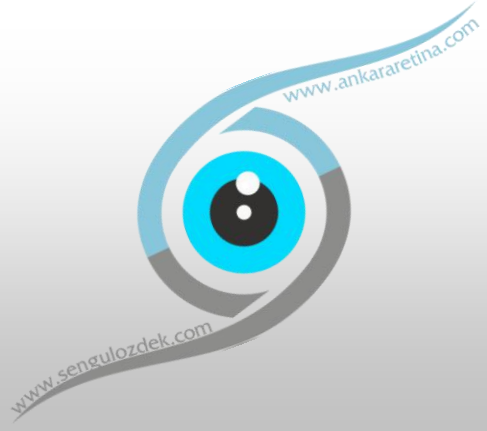
Gazi Üniversitesi Tıp Fakültesi
sengulozdek@gmail.com
sozdek@gazi.edu.tr



YBMD-TANI

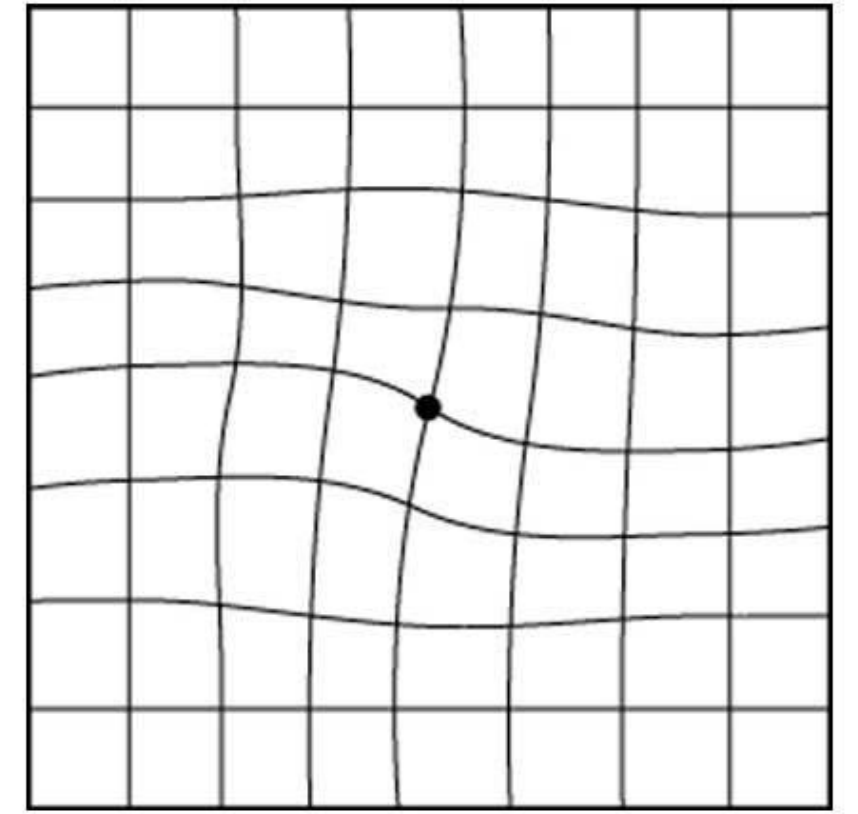
- Semptomlar
- Bulgular
- Tetkikler: OCT, FOF,
OCTA, FA





SEMPATOMLAR

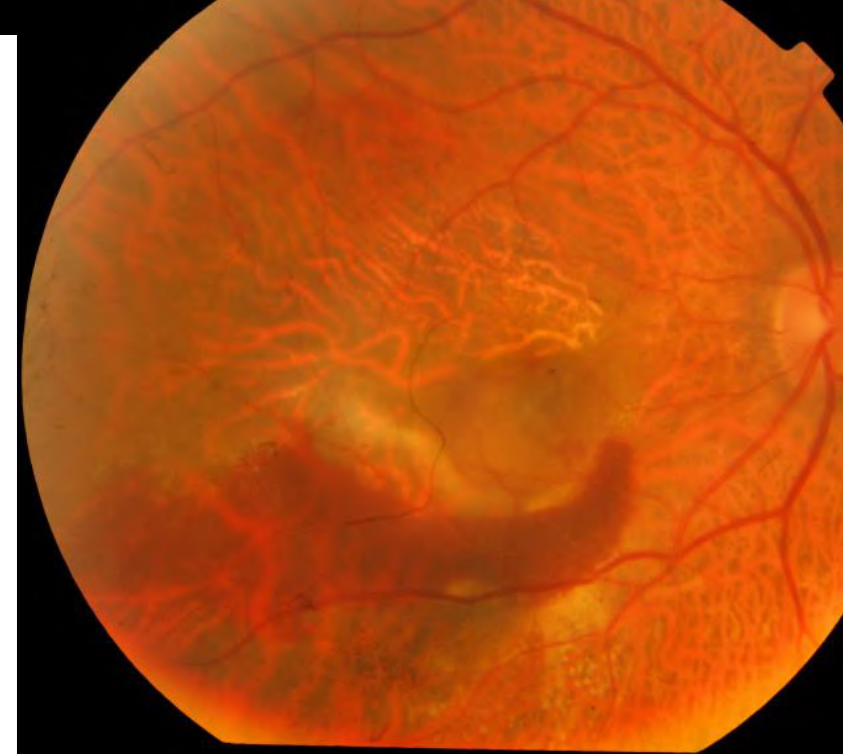
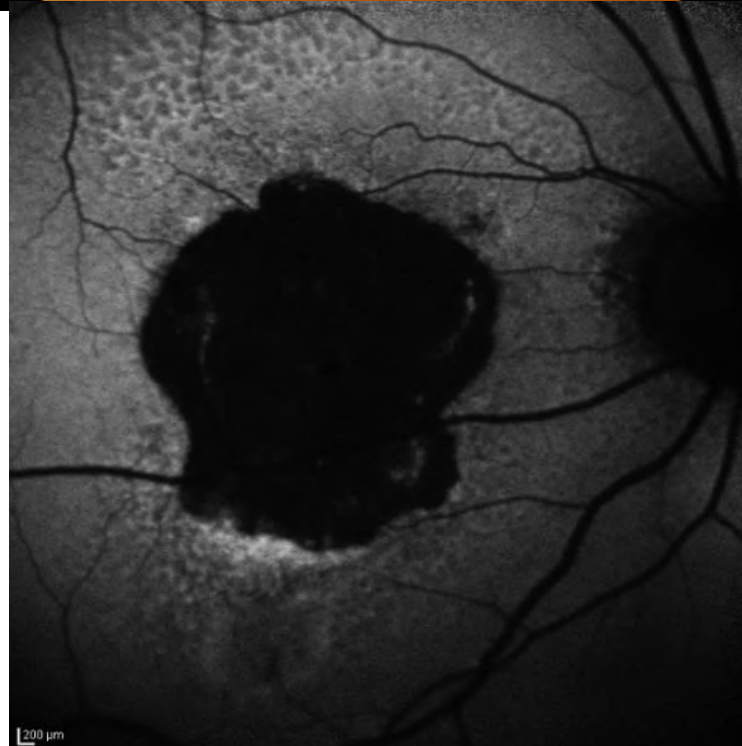
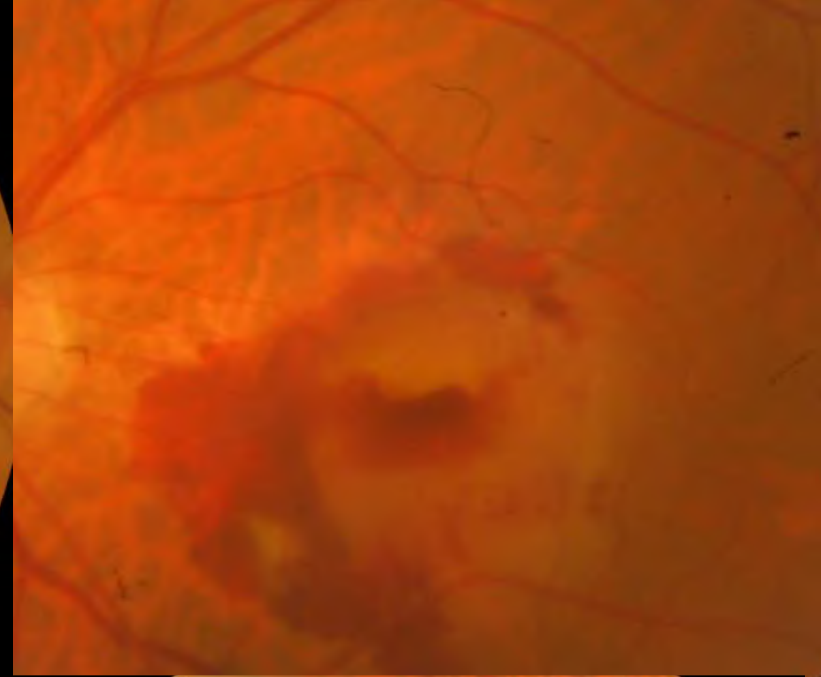
- Yavaş süreçte görmeye hafif zayıflama
- Çoğunlukla gözlük muayenesi sırasında tesadüfen
- Görmeye dalgalanmalar
- Okumakta zorlanma
- Daha çok ışığa ihtiyaç duyma
- Yüzleri tanıma zorluk,
- Metamorfopsi



SEMPATOMLAR

Ciddi görme kaybı:

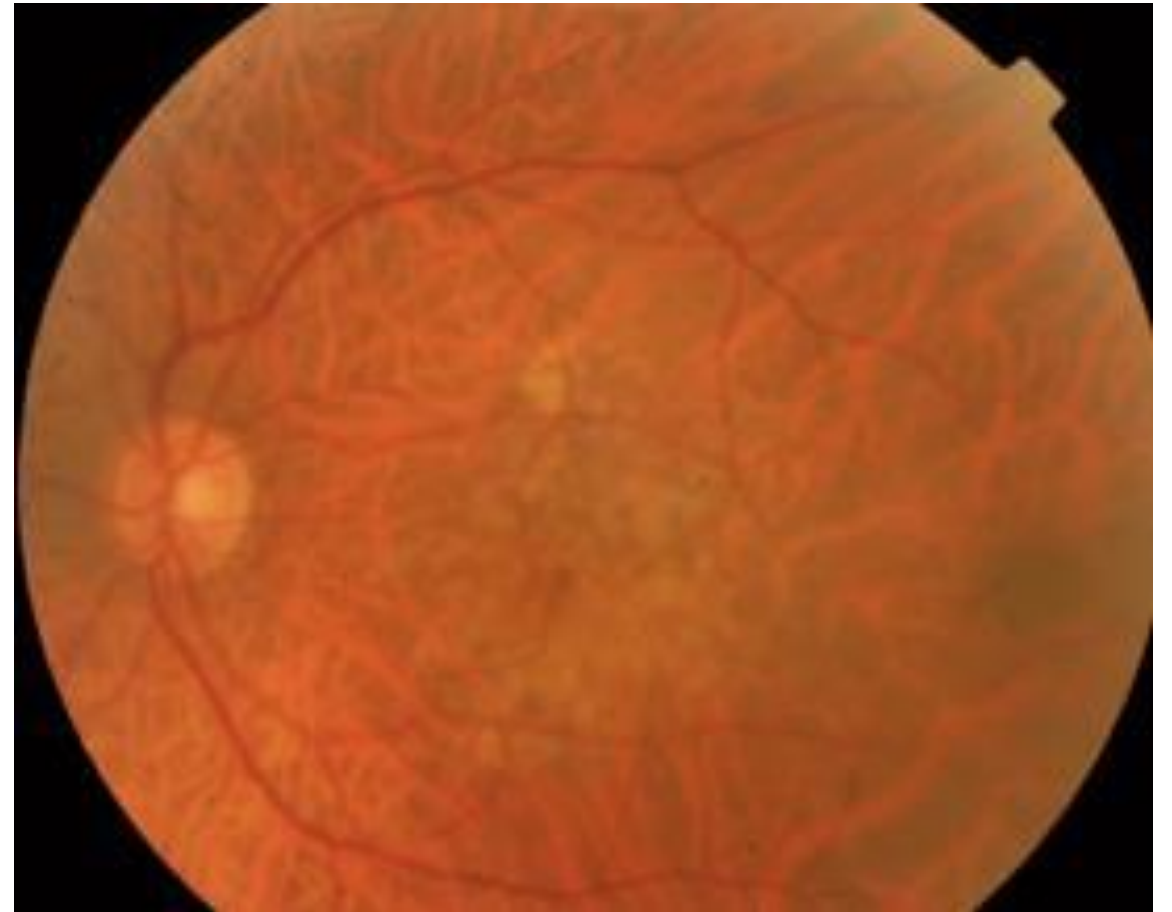
- %80 yaş tip YBMD
- %20 Coğrafi Atrofi





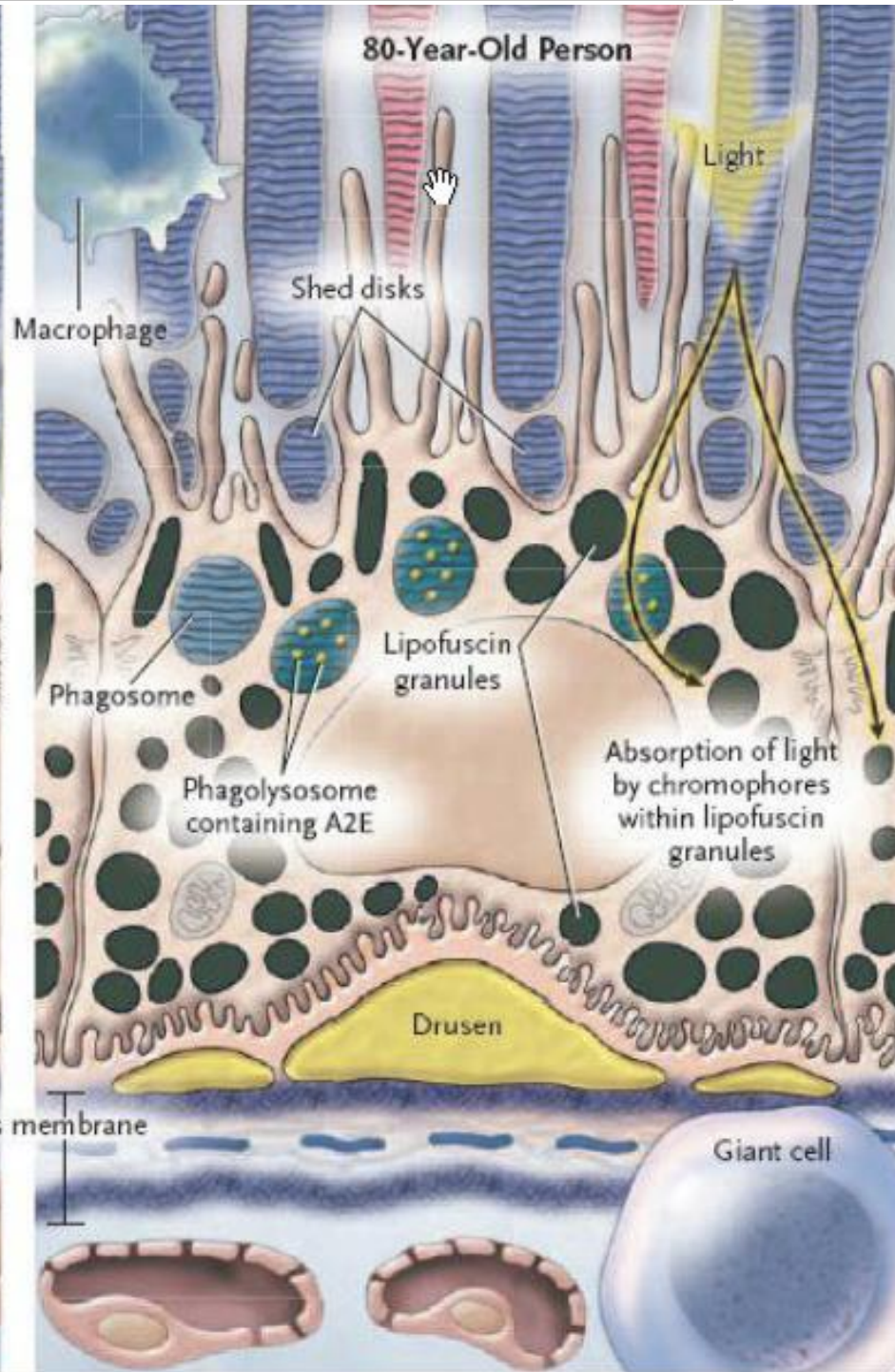
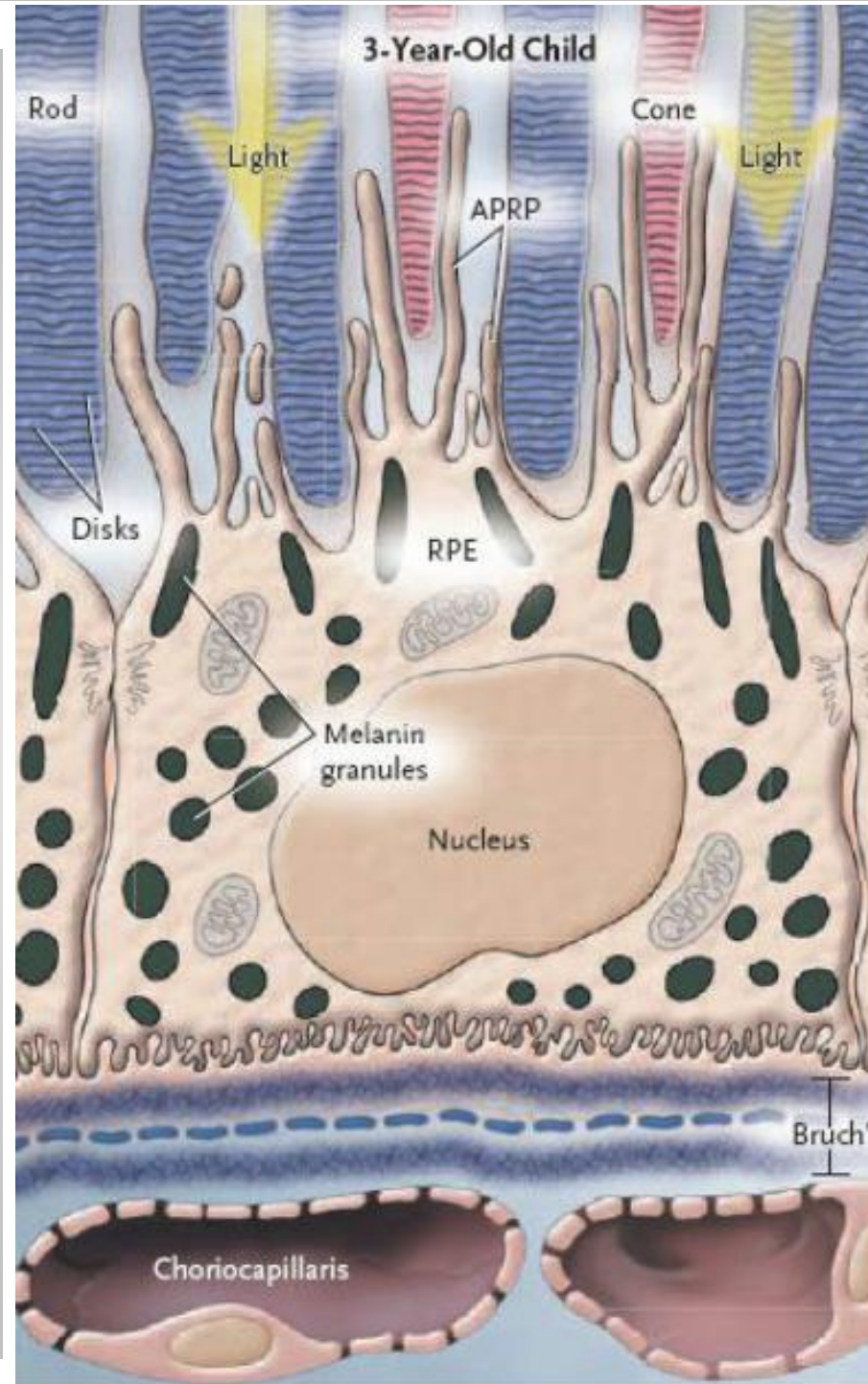
BULGULAR

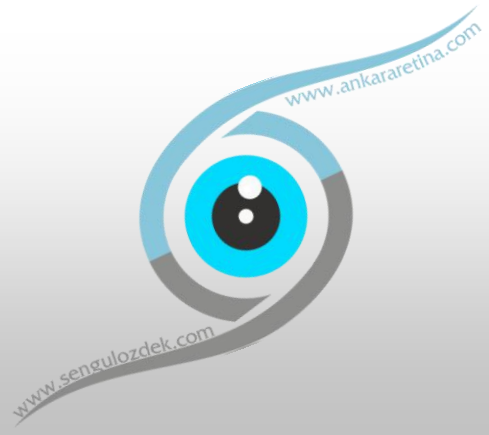
- RPE atrofisi,
- Pigment birikimleri
- Drusen (periferik de olabilir)



Druse-Drusen

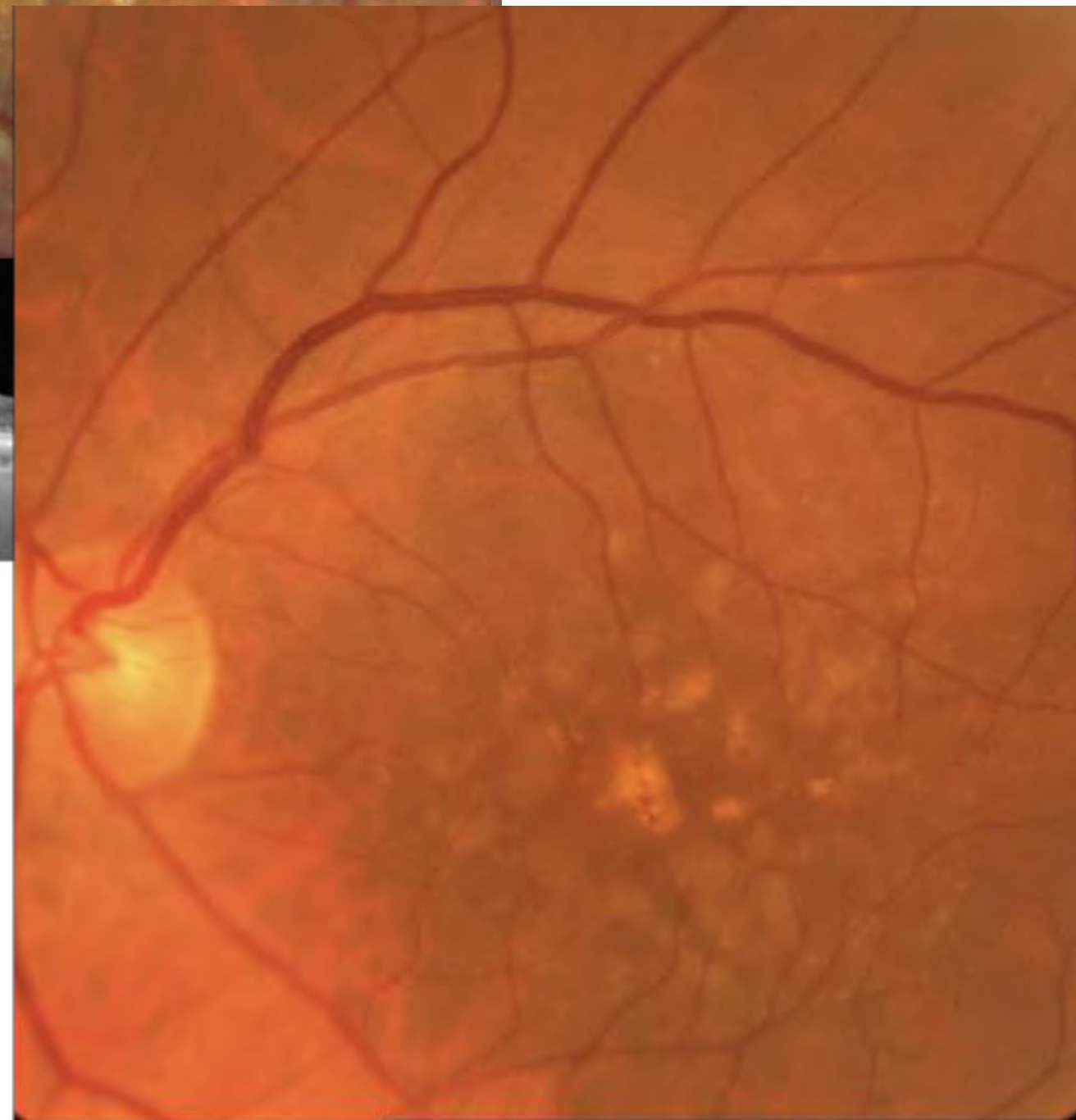
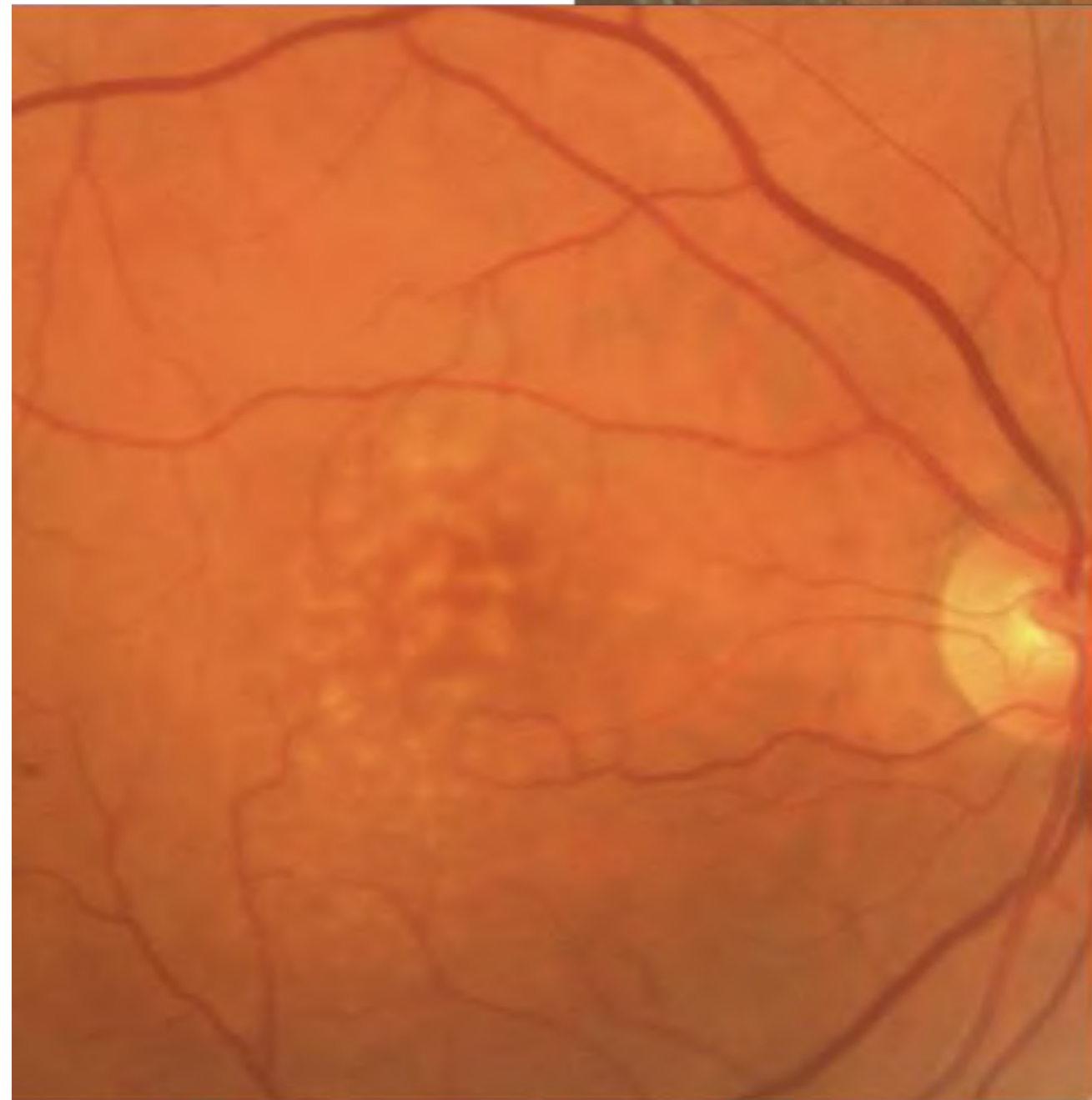
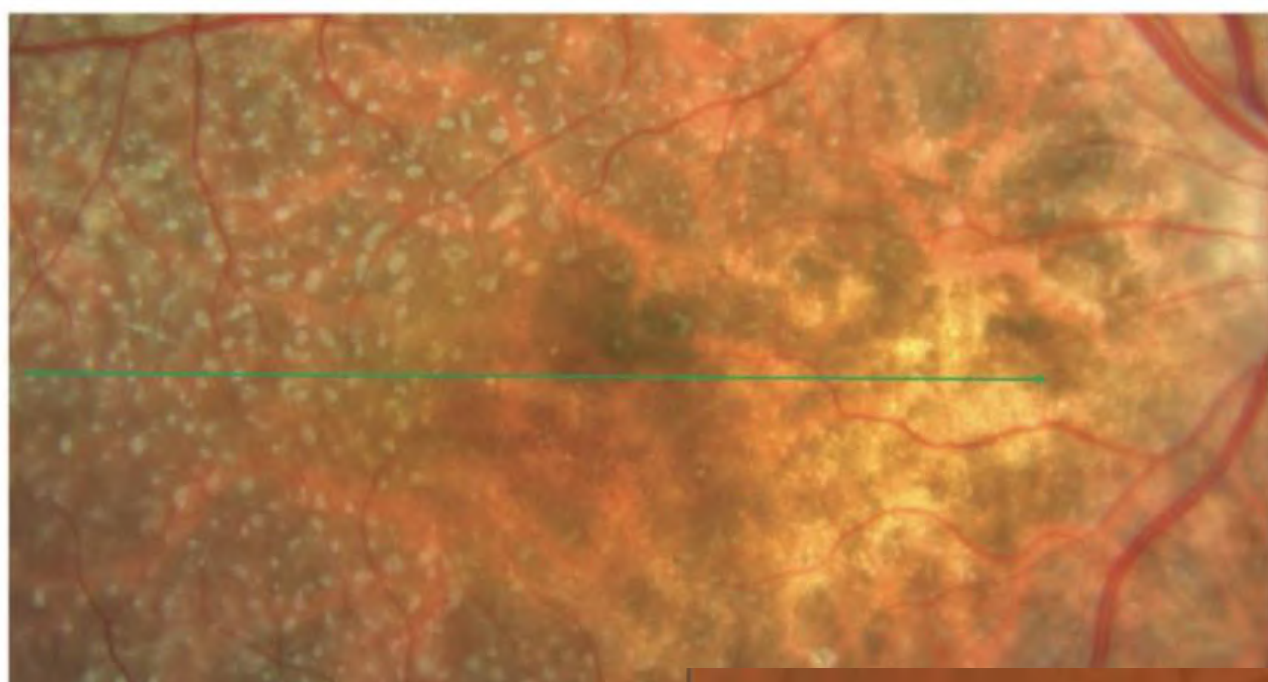
- RPE altında devam eden materyal birikimi
- İçeriği değişken extraselüler membranöz debris





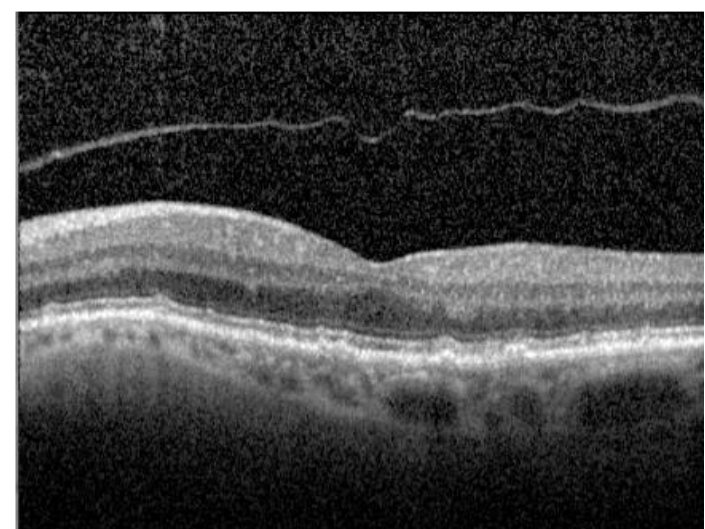
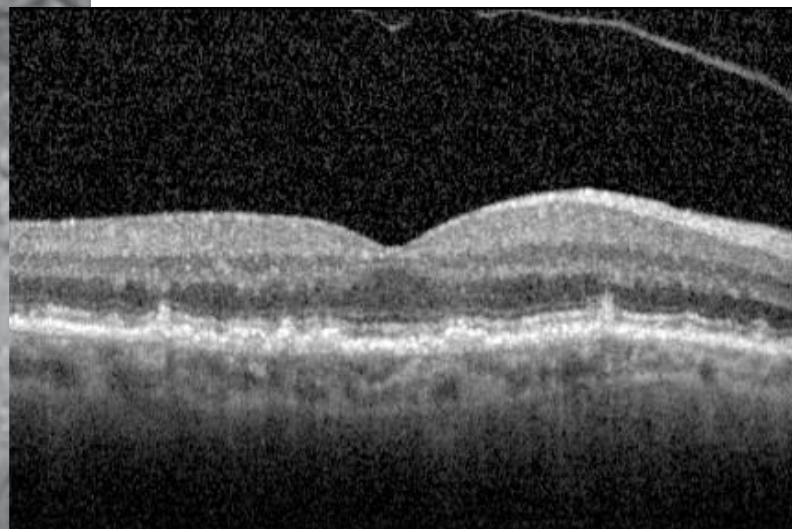
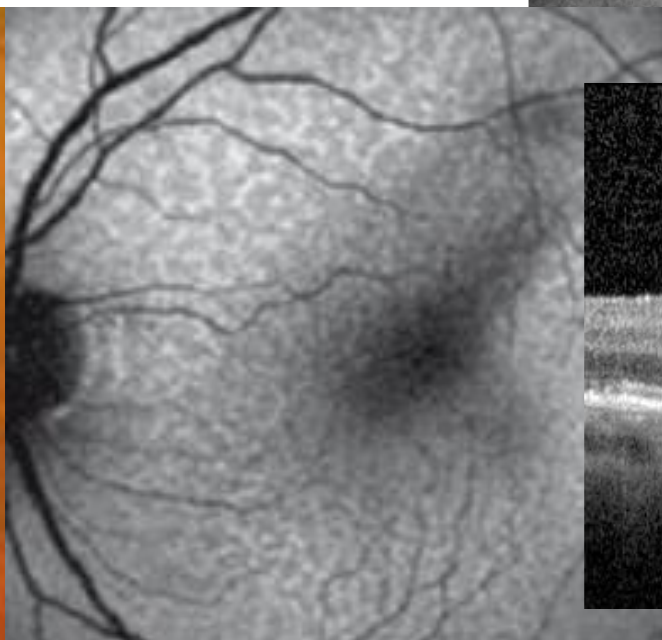
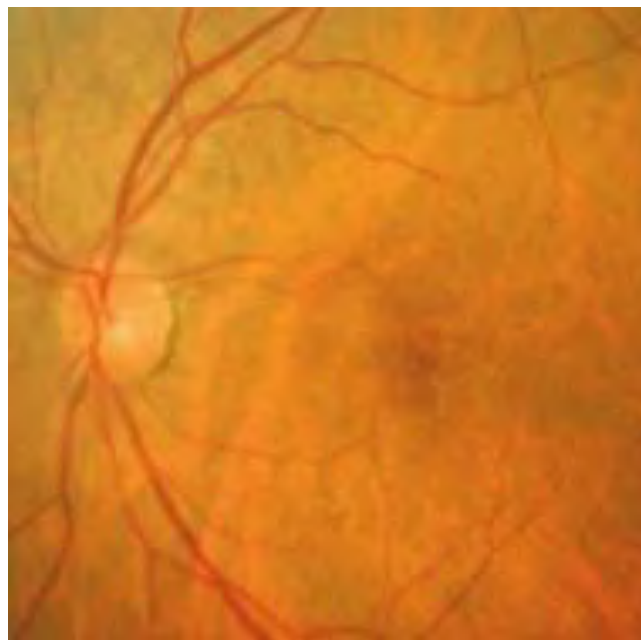
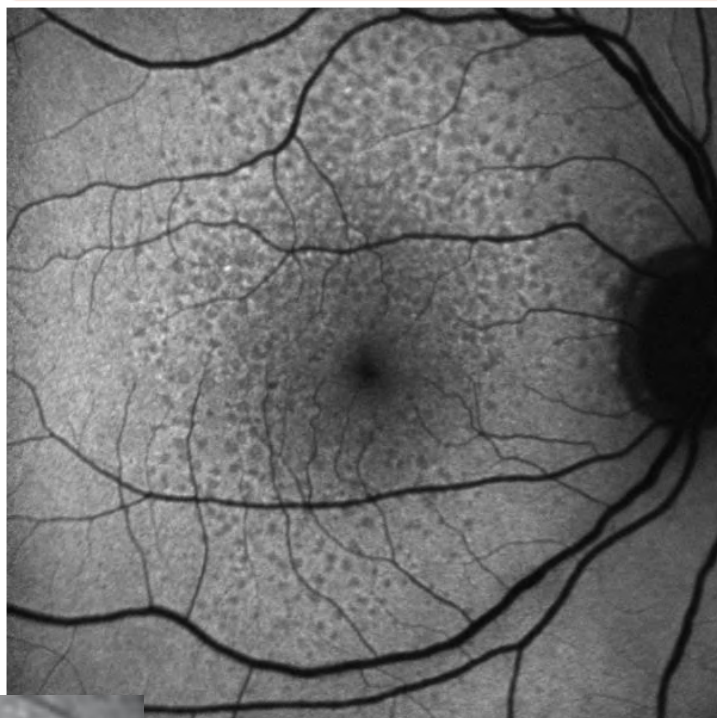
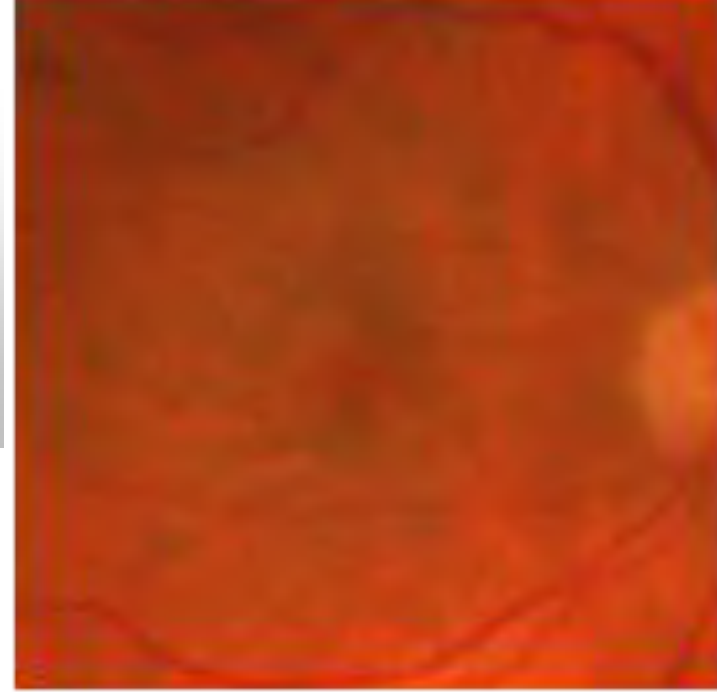
Drusen tipleri

- **Sert** (basal laminar drusen-kutiküler drusen, $<63\text{M}$)
- **Yumuşak** (RPE bazal membran dışındaki LP kaynaklı membranöz atıklar, $>63\text{M}$)
- **Subretinal Drusenoid Birikintiler** (Retiküler psödodrusen) (sensorial retina altı)



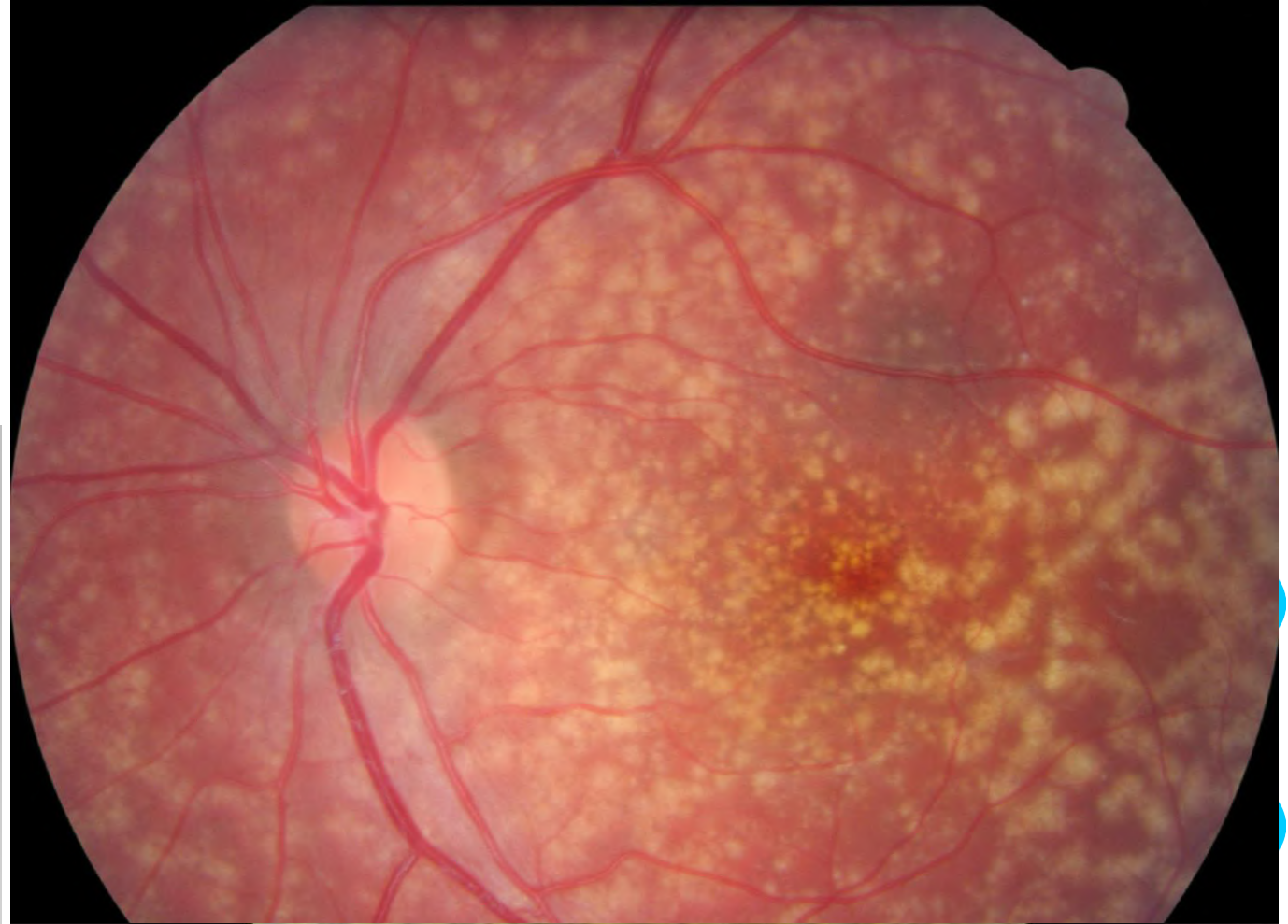
Retiküler Psödodrusen

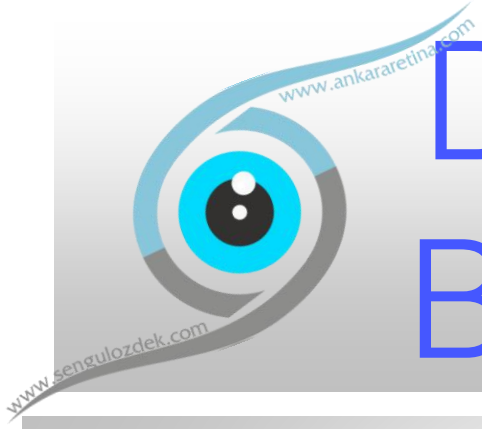
- Subretinal Drusenoid Birikintiler
- Atrofi ve KNV riski %20



Dominant Drusen

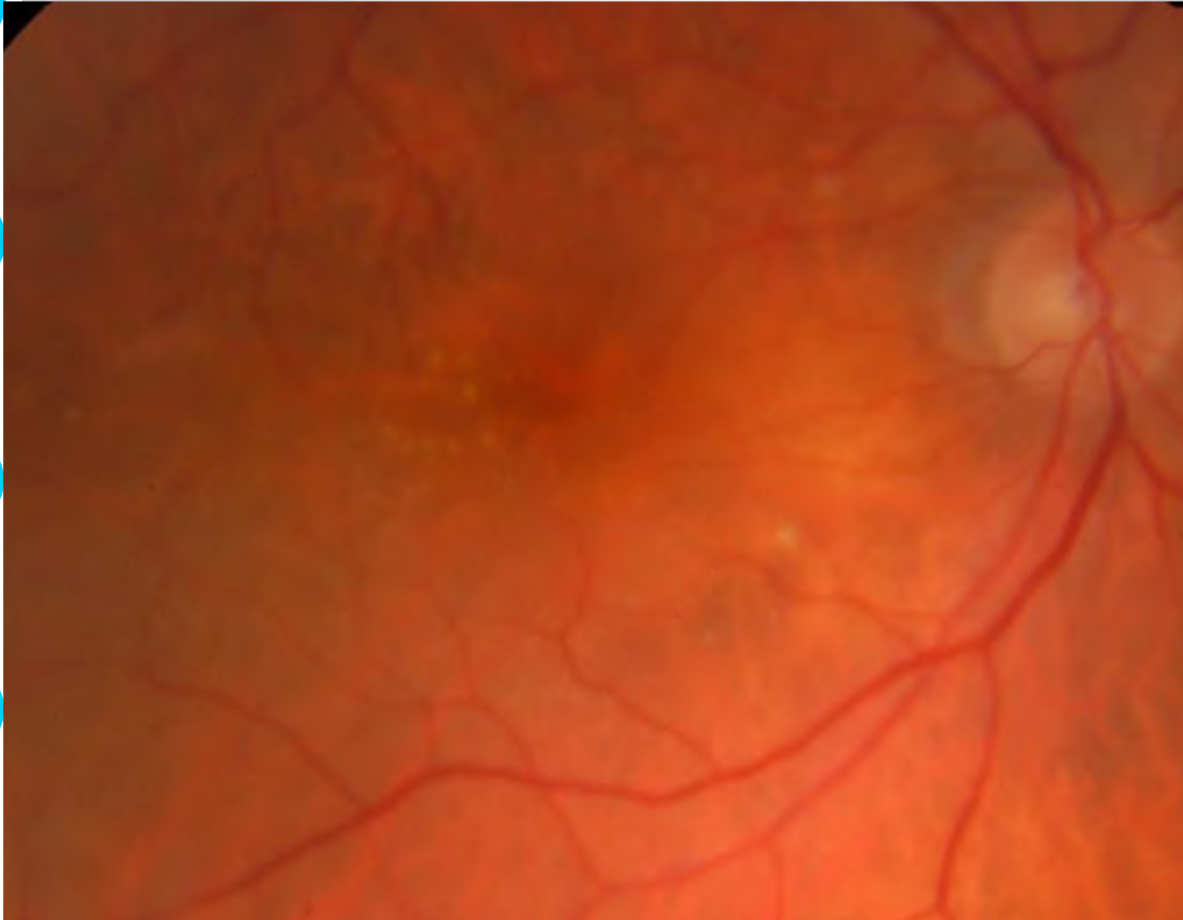
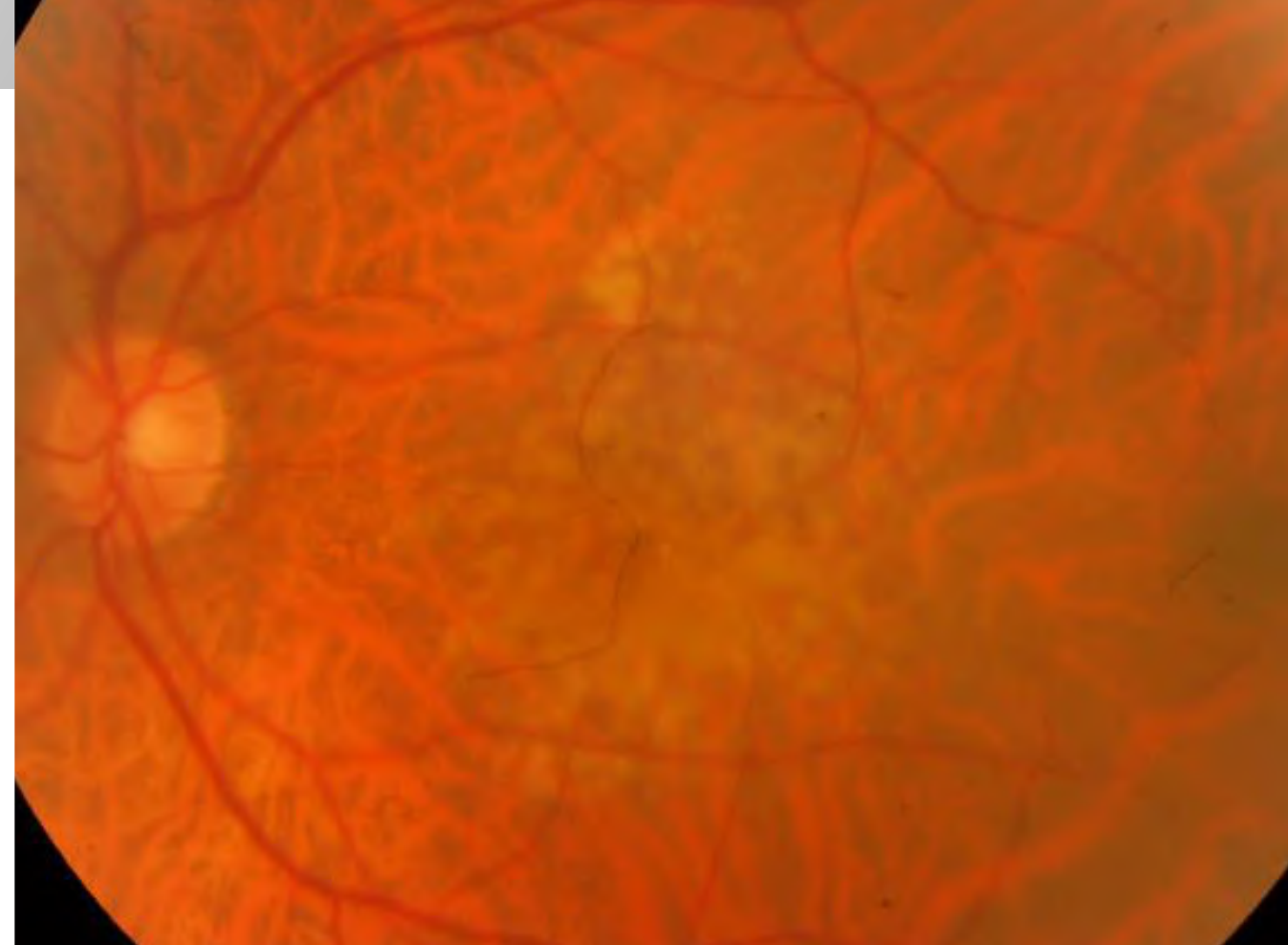
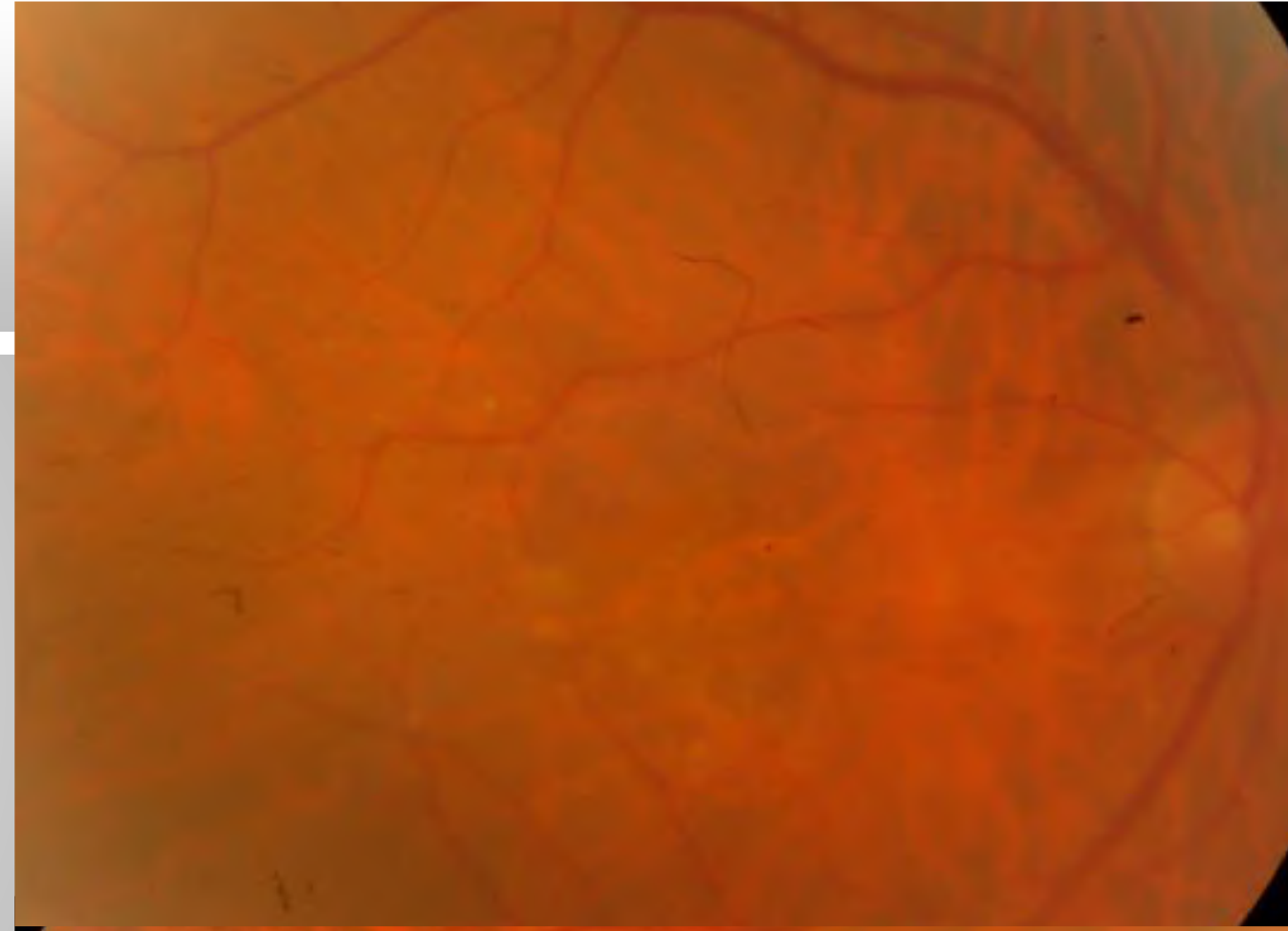
- Distrofik veya Familial
- Otozomal Dominant
- OSB nazalinde de var
- Genç yařlarda
- Aseptomatik
- İleri yařlarda sorunlar





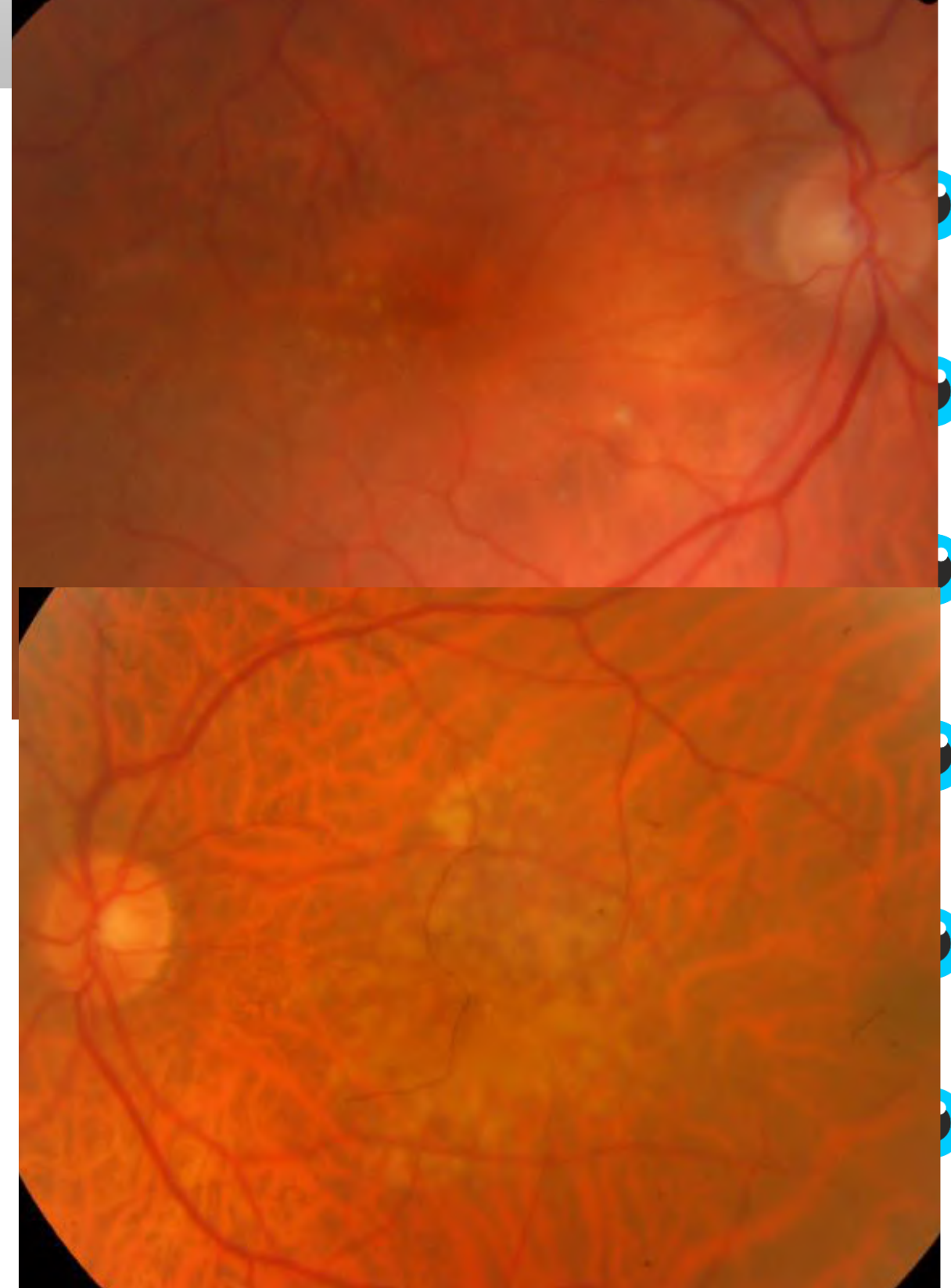
Drusen Boyutu

- Küçük ($<63\mu\text{m}$)
- Orta ($>63- <125\mu\text{m}$)
- Büyük ($>125\mu\text{m}$)



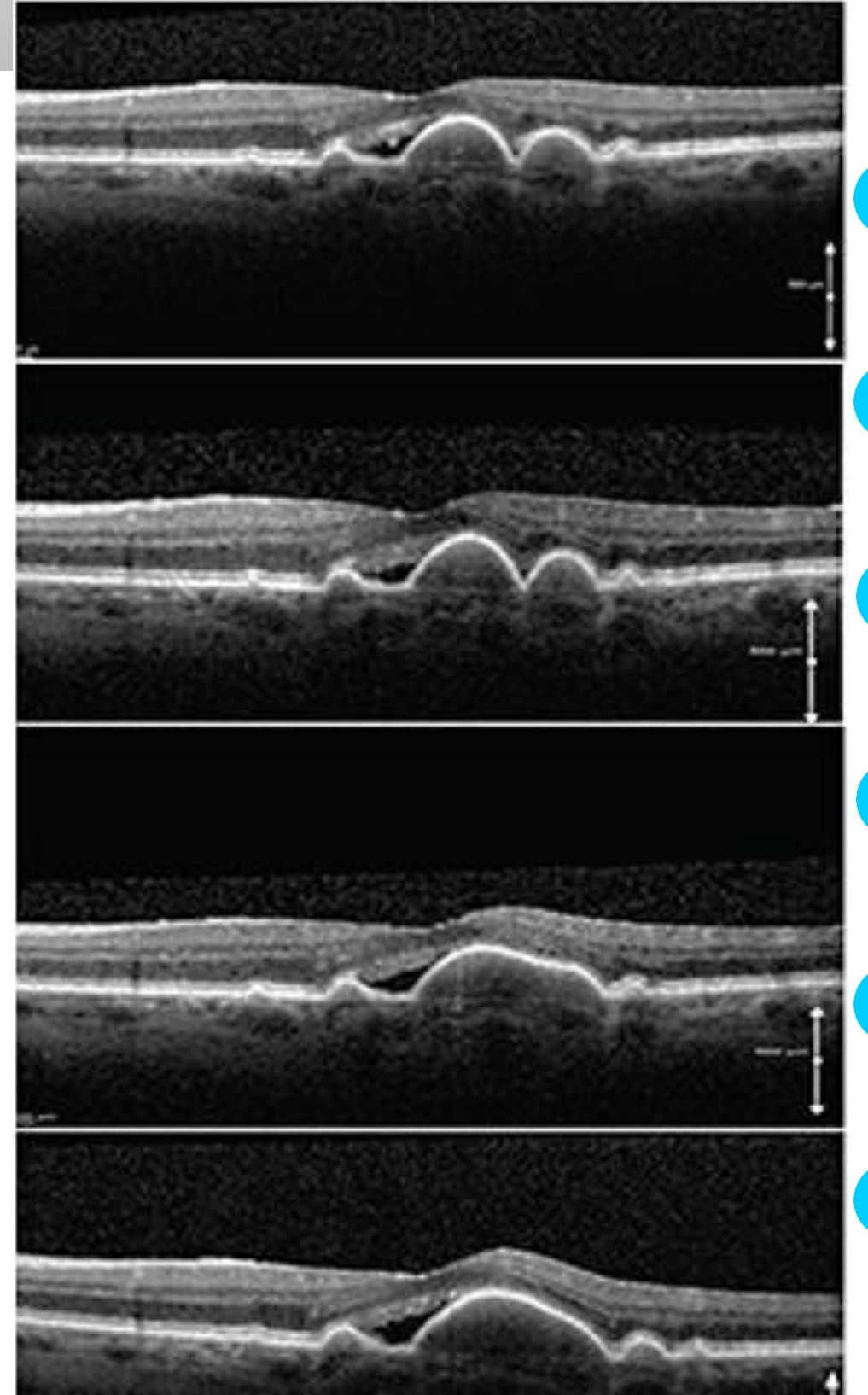
YBMD Şiddeti

- **Hafif (başlangıç):** Birkaç küçük orta boy drusen, hiper-hipo-pigmentasyonlar
- **Orta:** En az 1 büyük boy drusen, çok sayıda orta boy drusen
- **İleri (şiddetli):** GA veya KNV



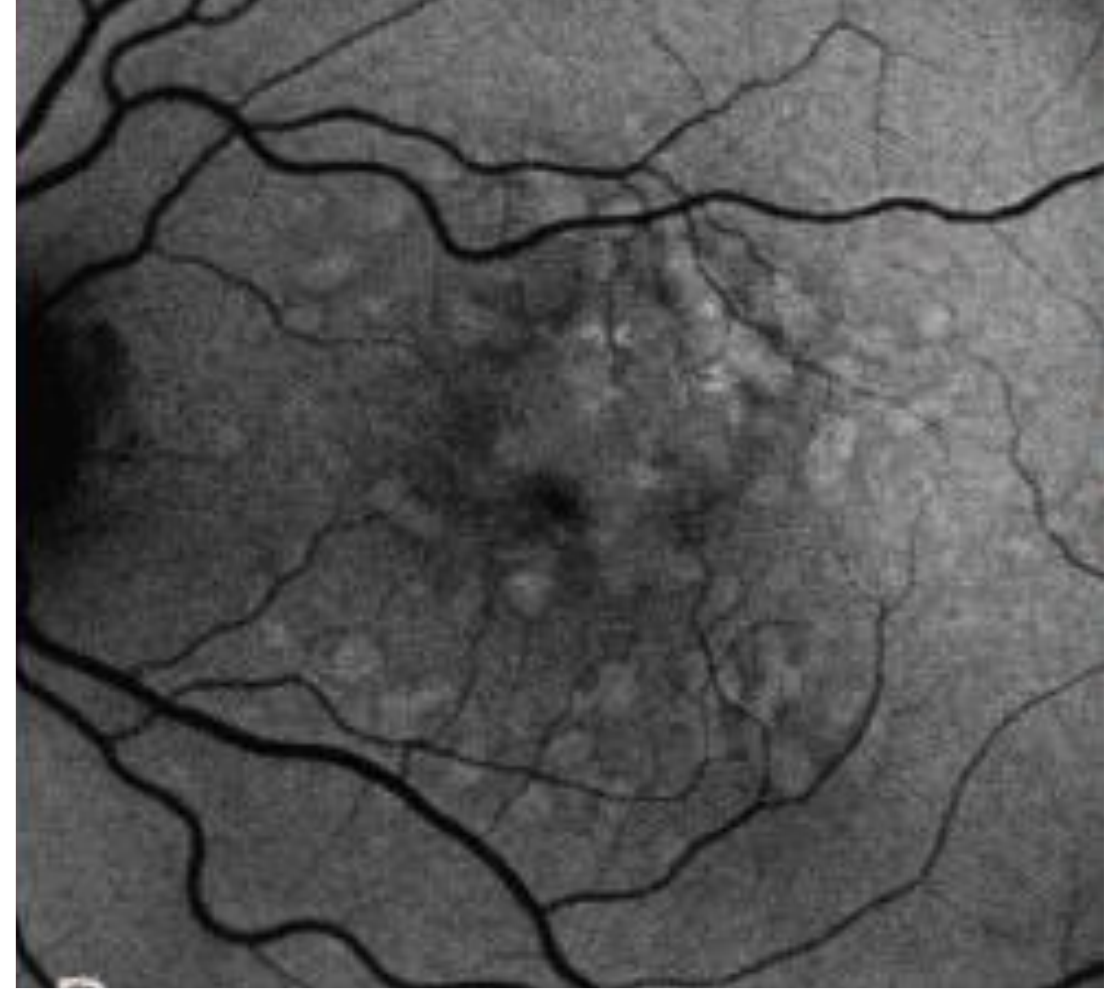
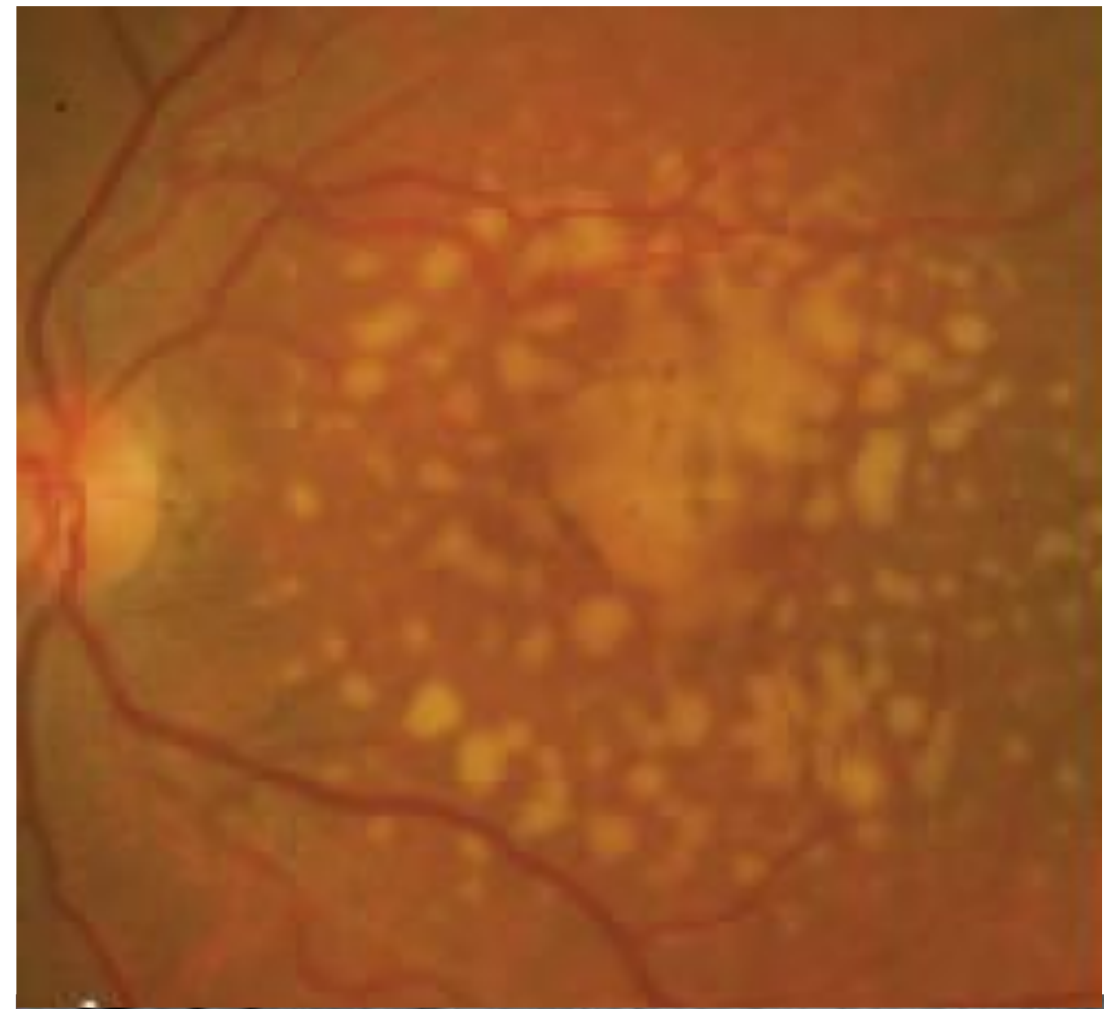
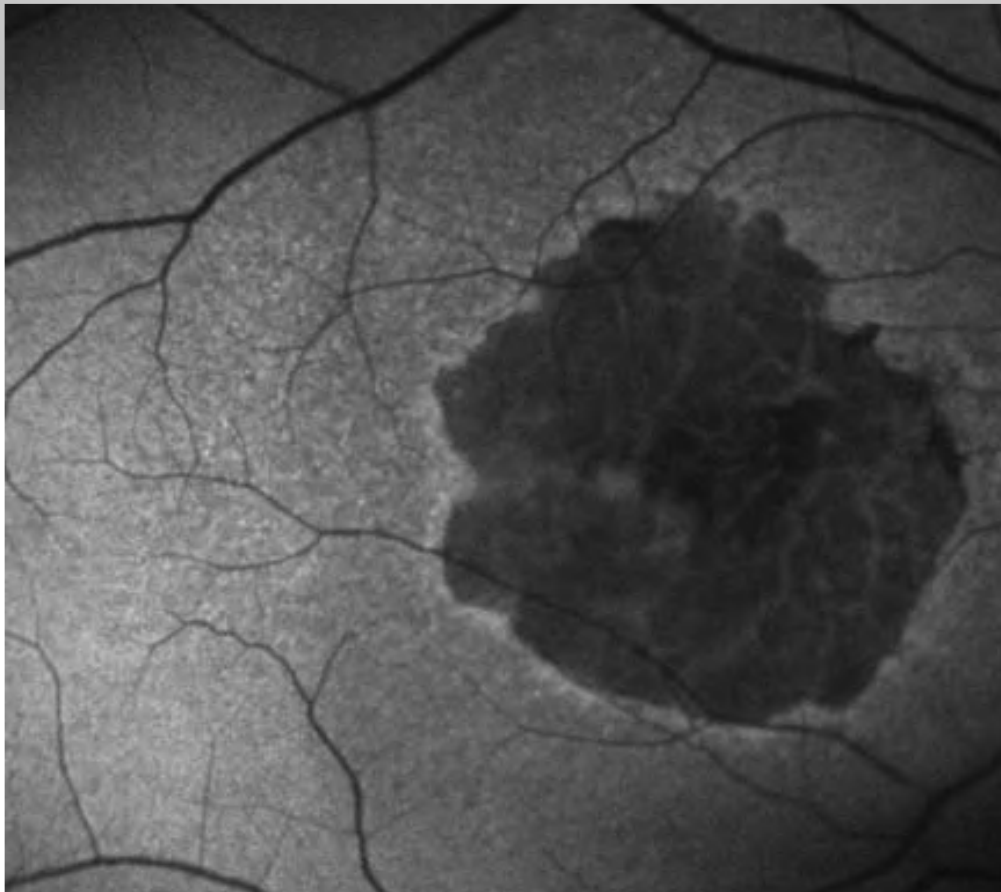
Drusen-Değişim

- Dinamik yapılar
- Büyüme, Regresyon, Yeni drusen oluşumu
- Regresyon sonrasında
 - Atrofi gelişir
 - Fagosit edilemeyenler kalsifiye olur

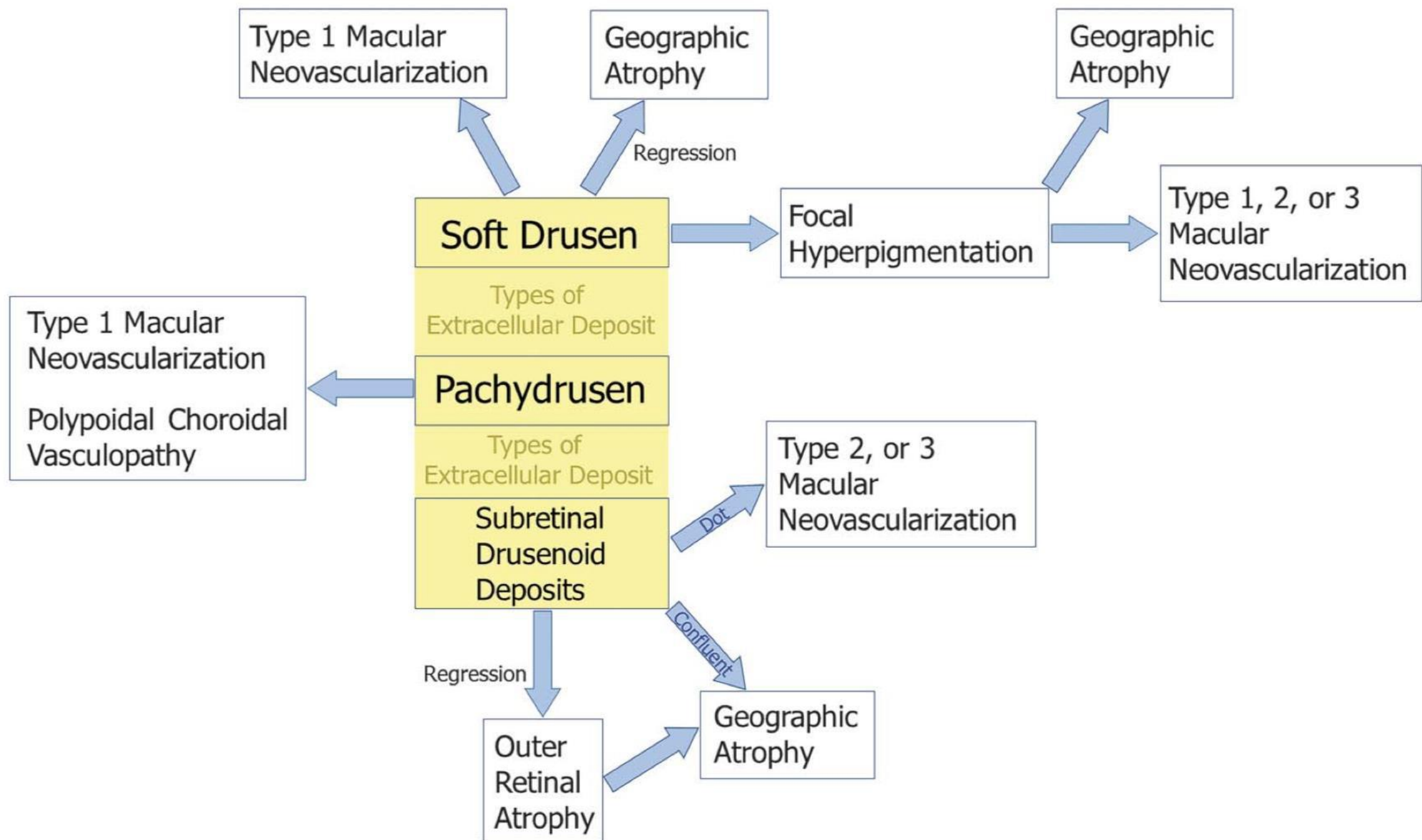


Drusen Değişim

- Drusenoid PED
- Atrofik Form
 - Coğrafik Atrofi



YBMD Yeni isimlendirme



- Spaide (Retina 2017)

Atrofinin yeniden tanımlanması

- **cRORA: complete RPE and Outer Retinal Atrophy**
 - Geographical atrophy
 - >250μ hypertransmission zone
 - >250μ RPE/BL complex attenuation
 - Photorec damage: ONL thinning, ELM, EZ/IZ loss
- **iRORA: incomplete RORA**
- Sadda S. AAO-2017

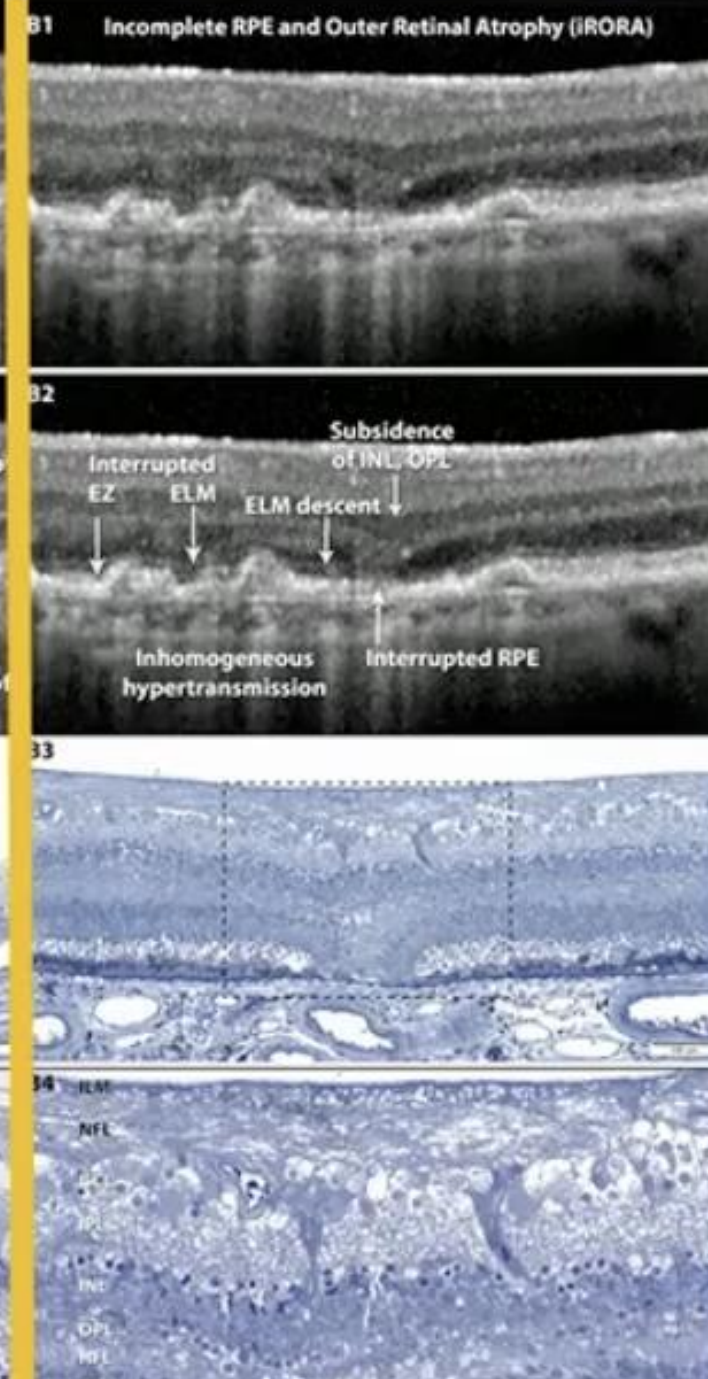
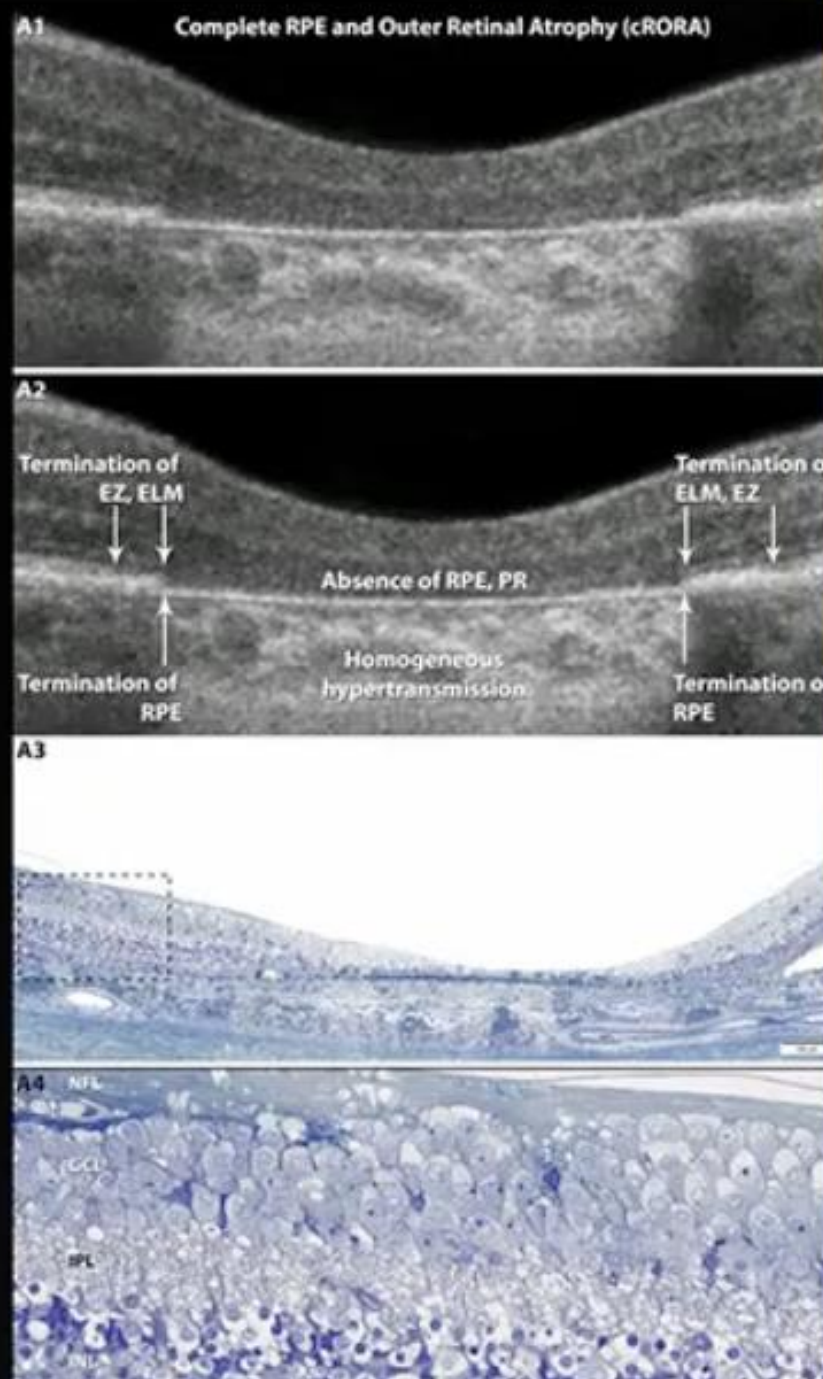
Redefining Atrophy in the Era of OCT and Multimodal Imaging

Histopathologic correlation

cRORA

complete
RPE and Outer
Retinal Atrophy

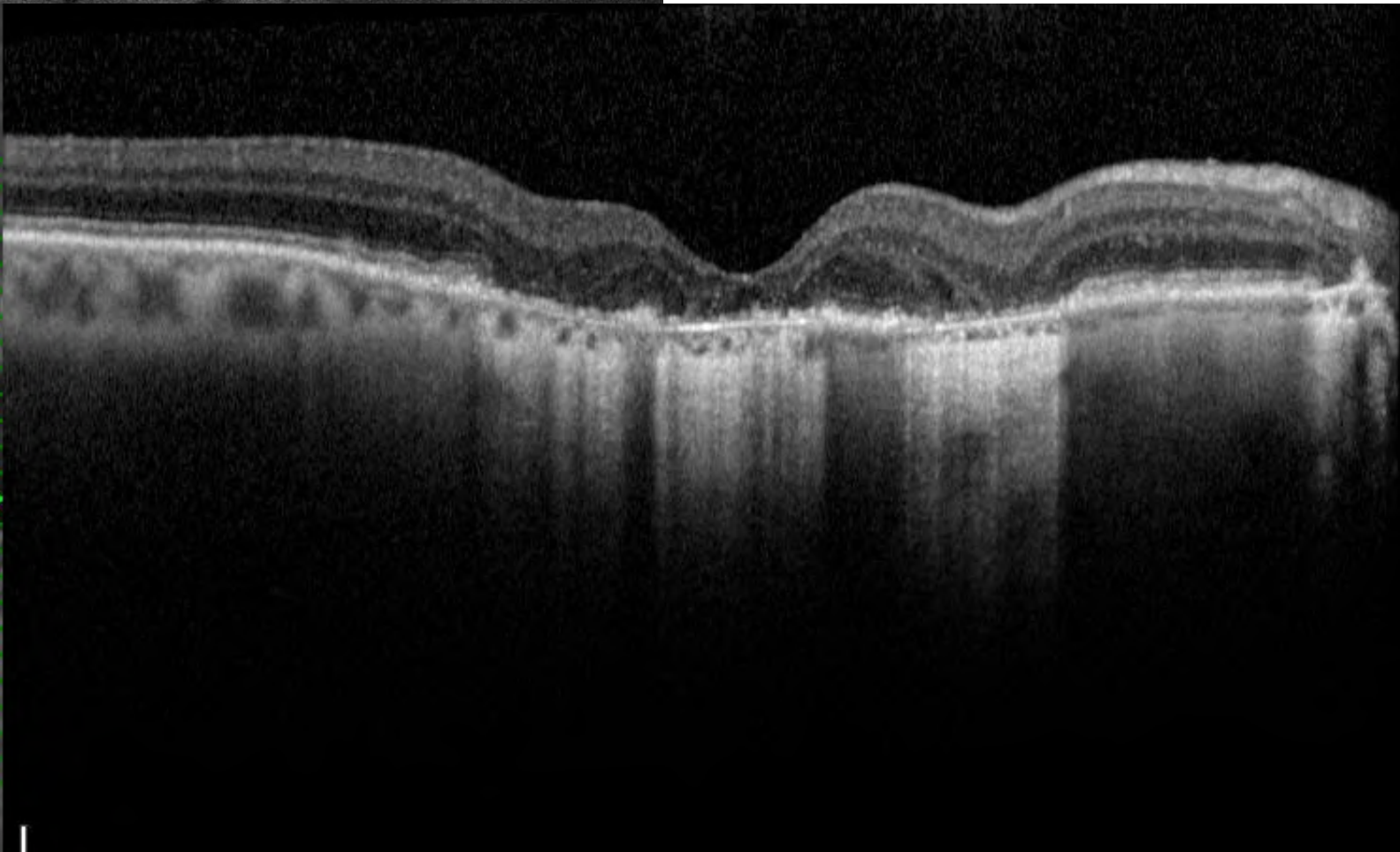
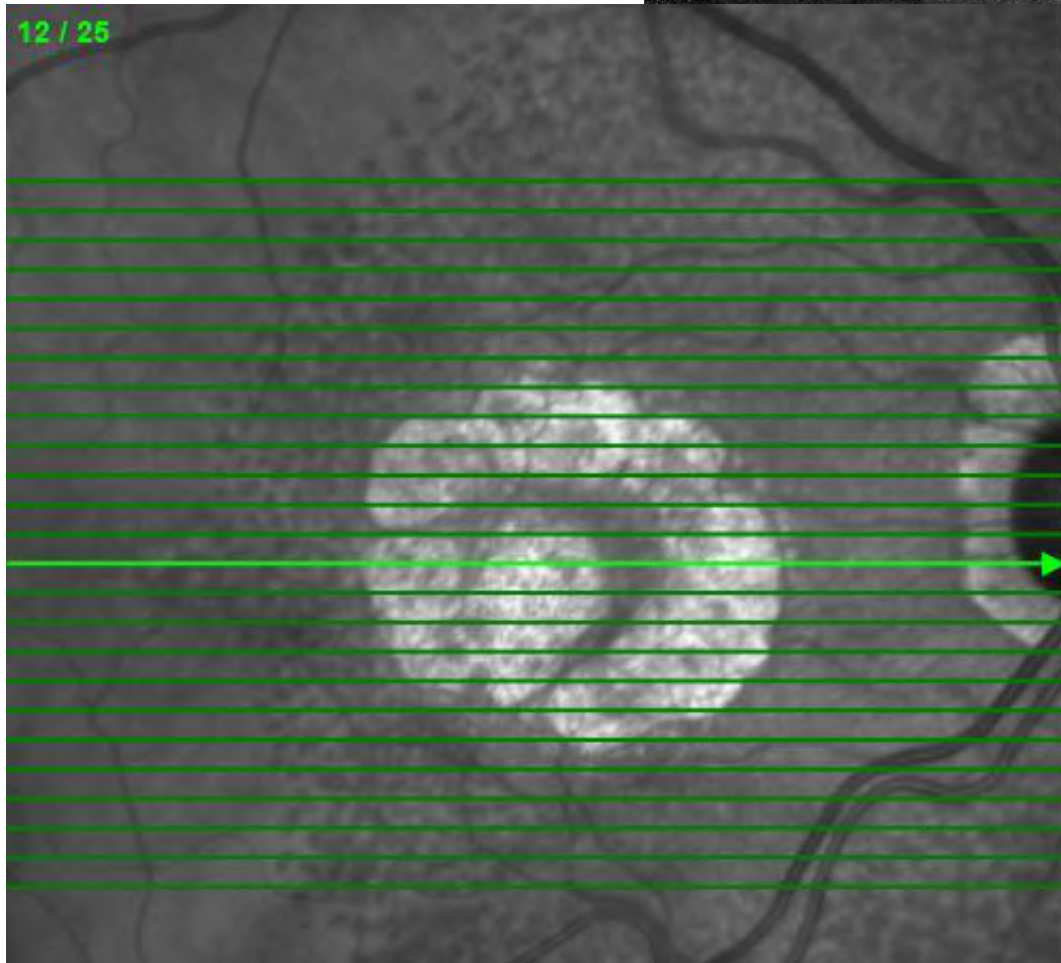
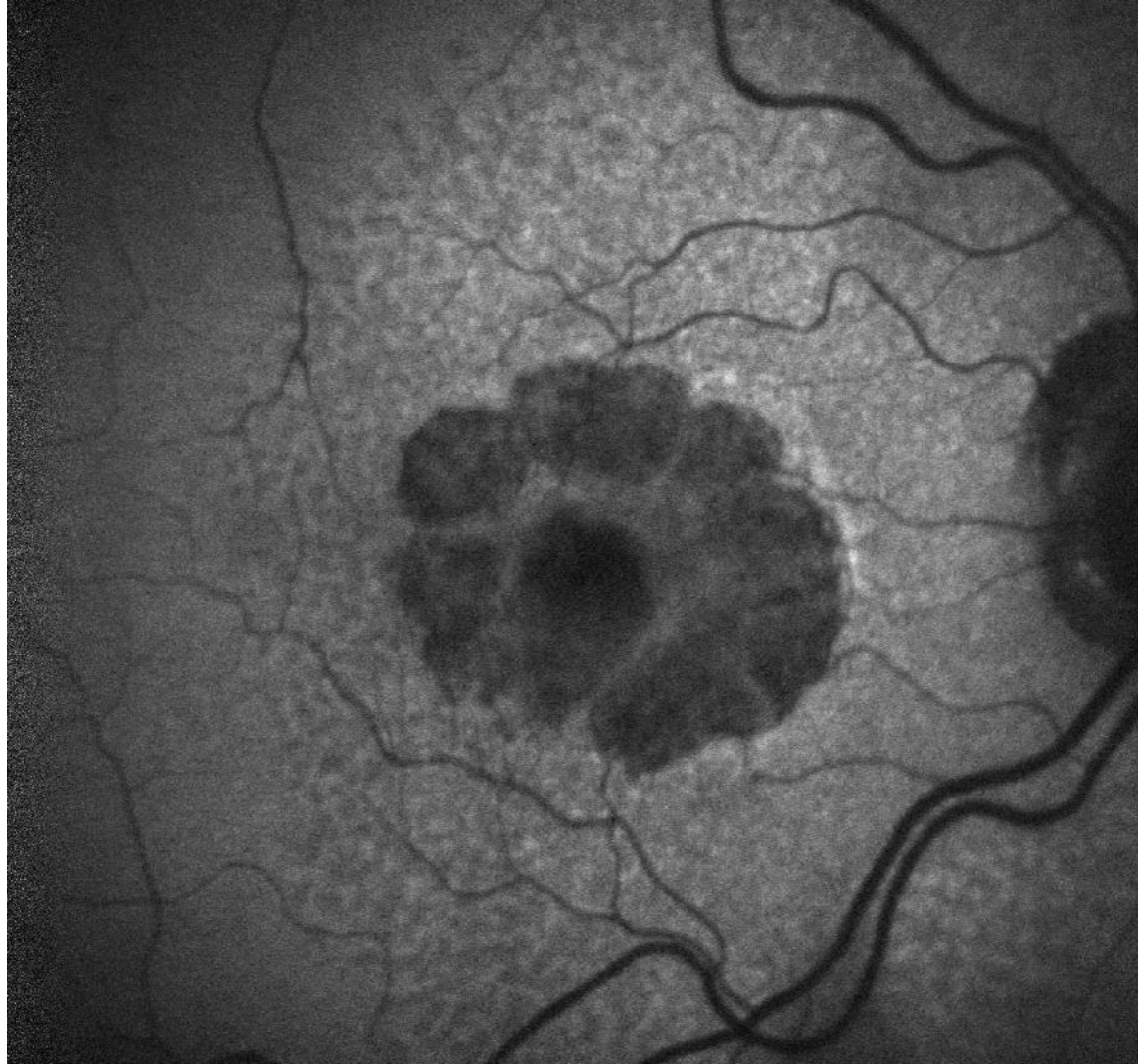
*(GA is a subset in
absence of CNV)*

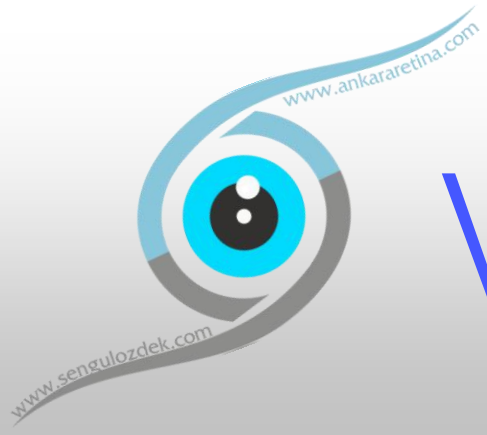


iRORA

incomplete
RPE and Outer
Retinal Atrophy

*(nGA is a subset in
absence of CNV)*

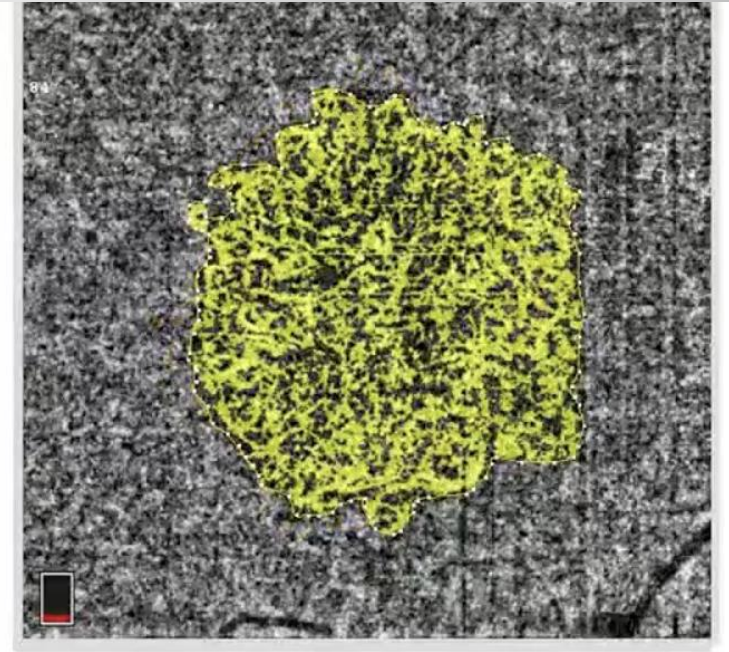
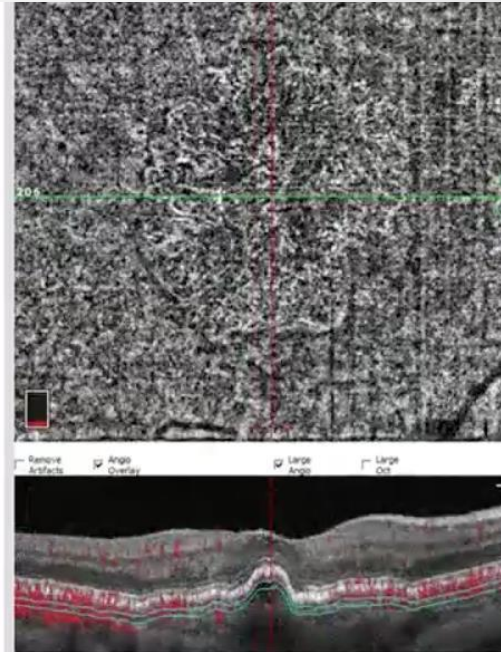




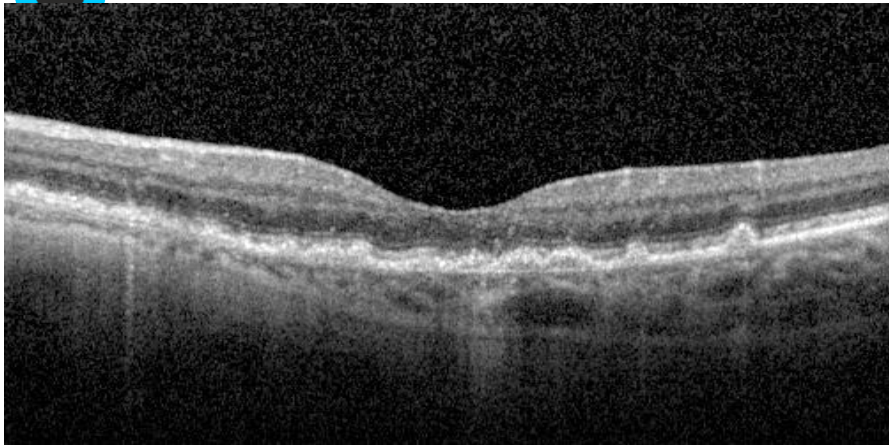
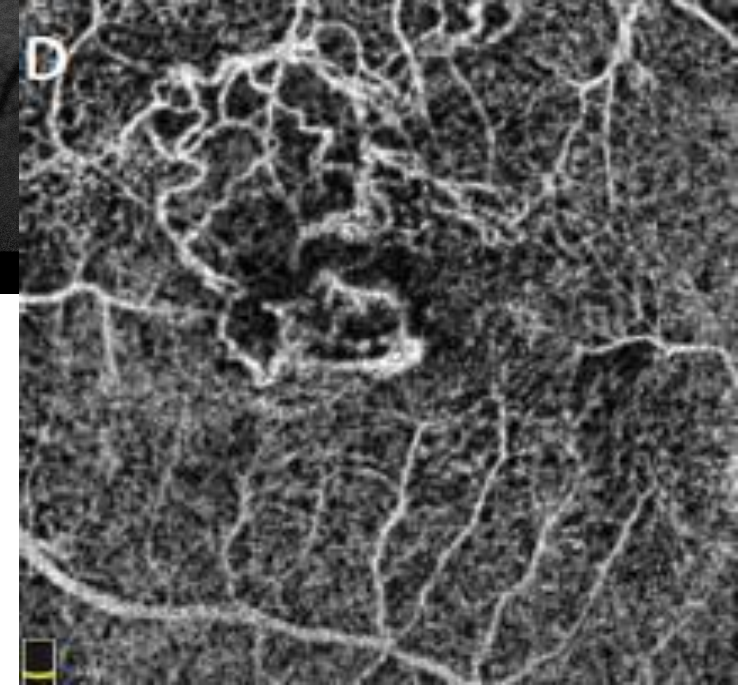
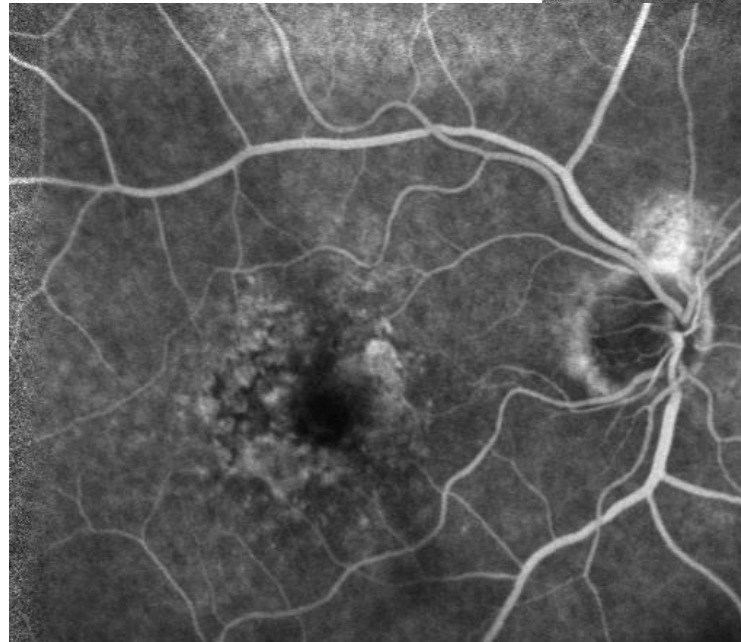
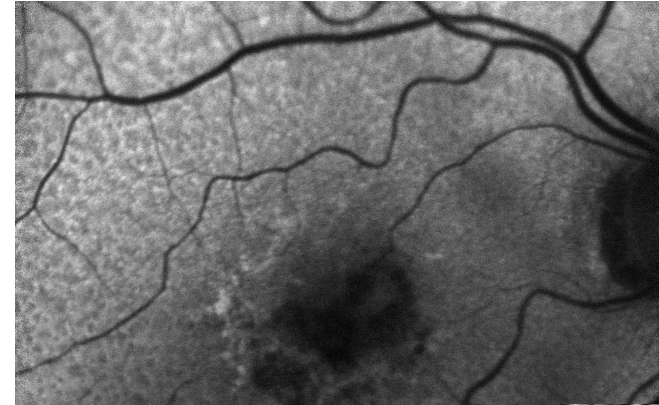
Vaskülerize drusen

- Multilaminer RPE altı hiperreflektivite
- Vaskülerize Drusen? Kalsifikasyon? (Querques G, Retina 2015),
- Subklinik NV? (Spaide)
- Sessiz CNV: RPE de minimal irregüler elevasyon (+), sıvı (-)

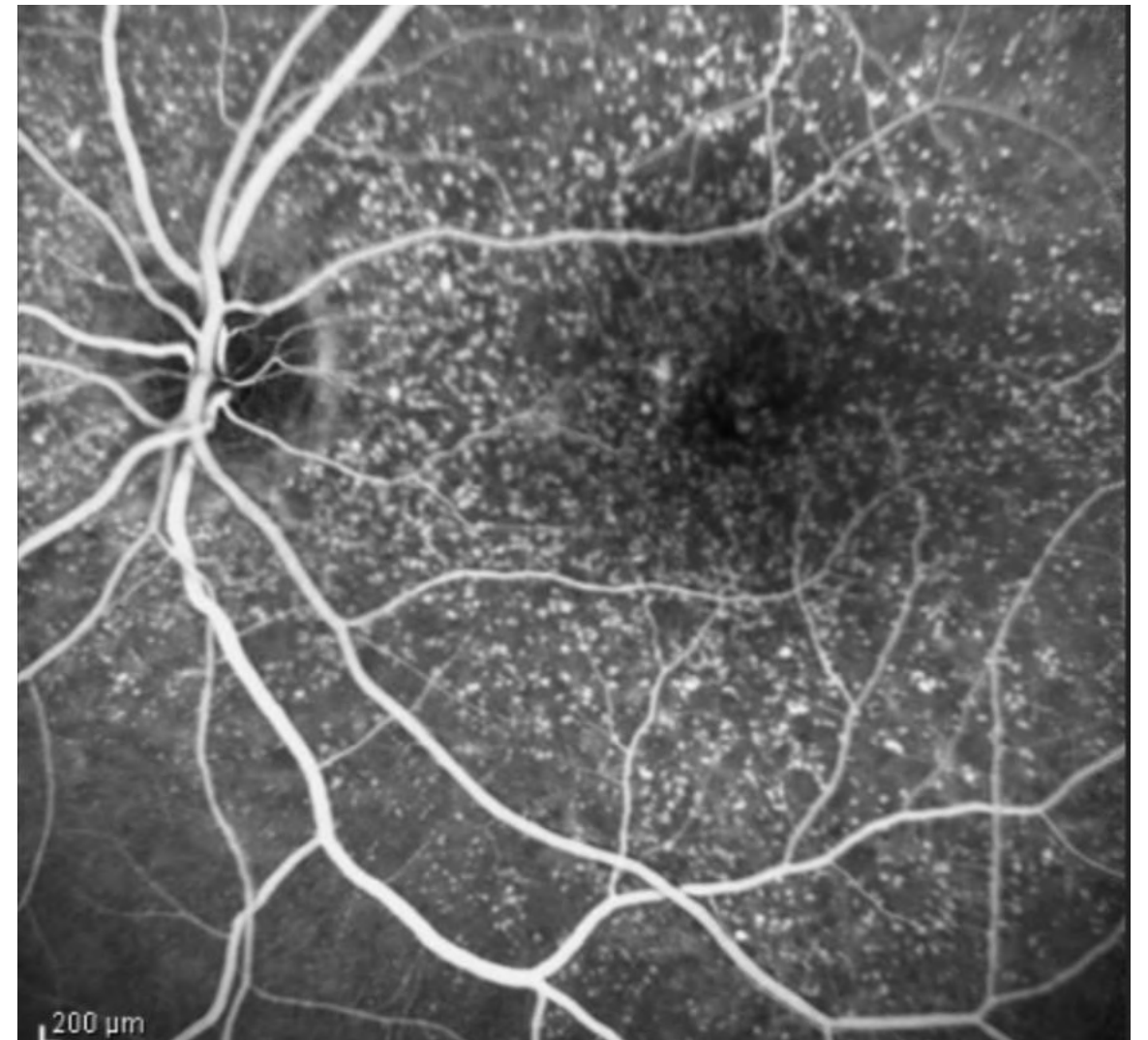
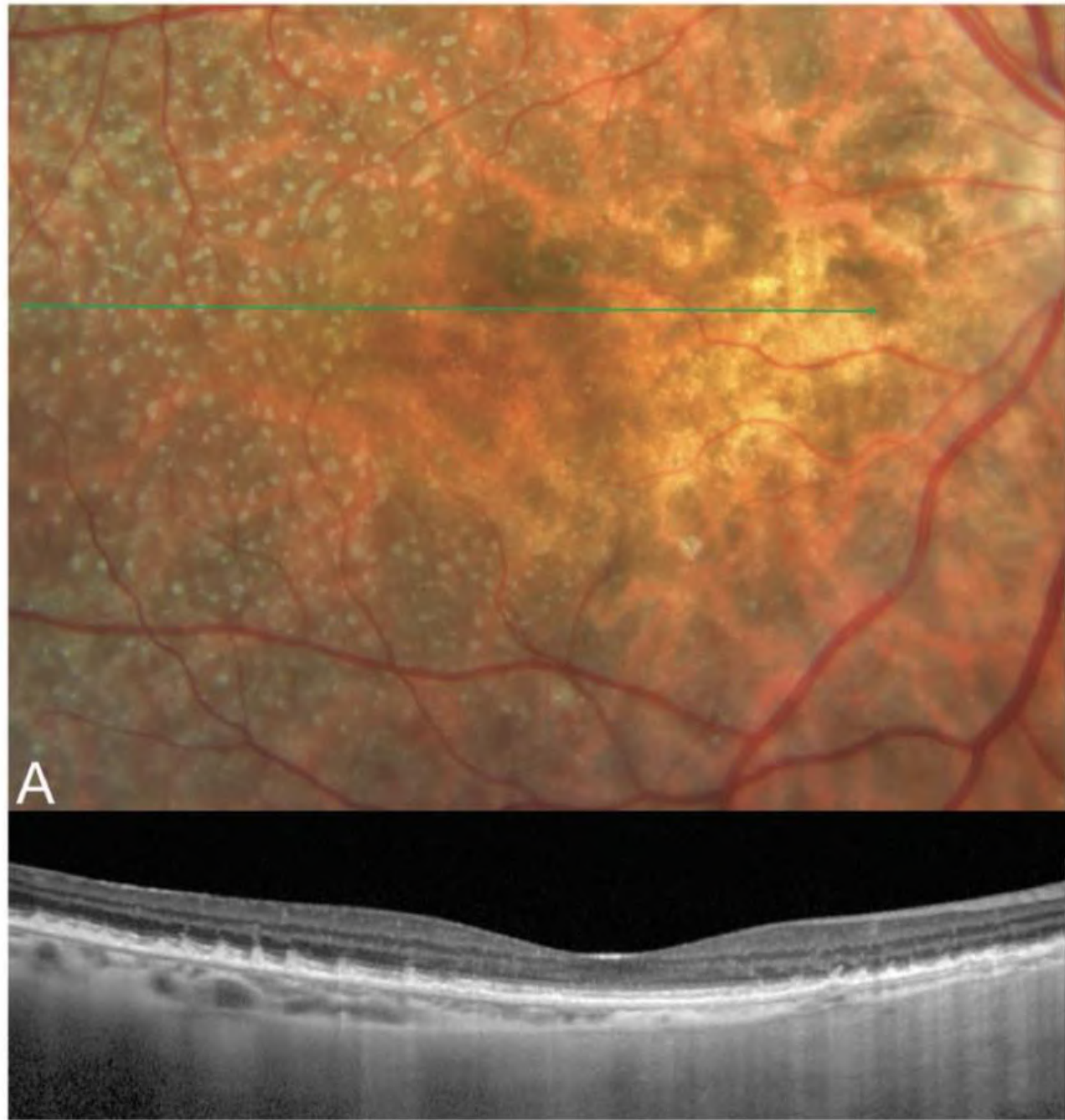
- Querques G, Souied EH. Vascularized Drusen: Slowly Progressive Type 1 Neovascularization Mimicking Drusenoid Retinal Pigment Epithelium Elevation.



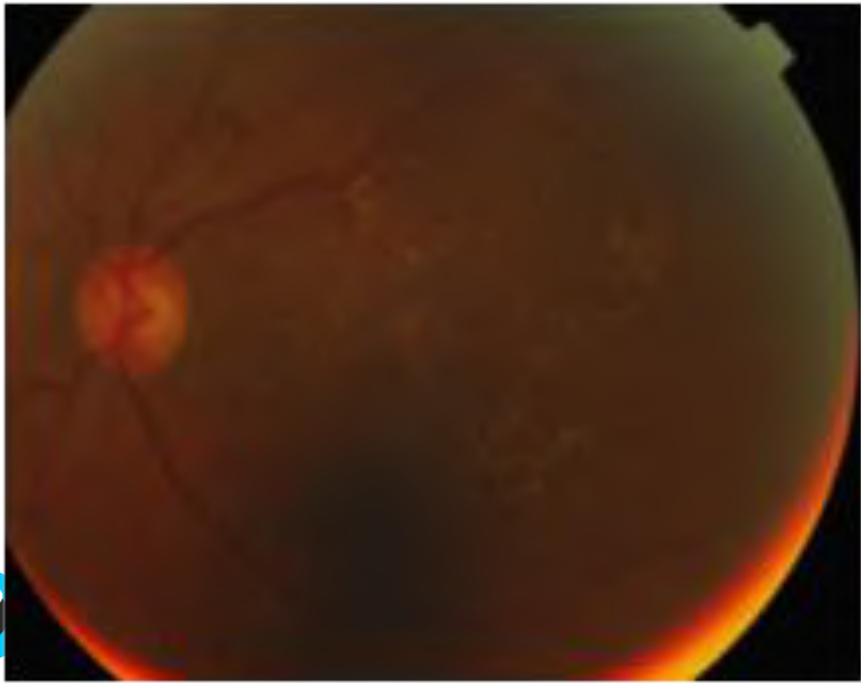
KURU TİP YBMD DE TANI: MULTİMODAL GÖRÜNTÜLEME



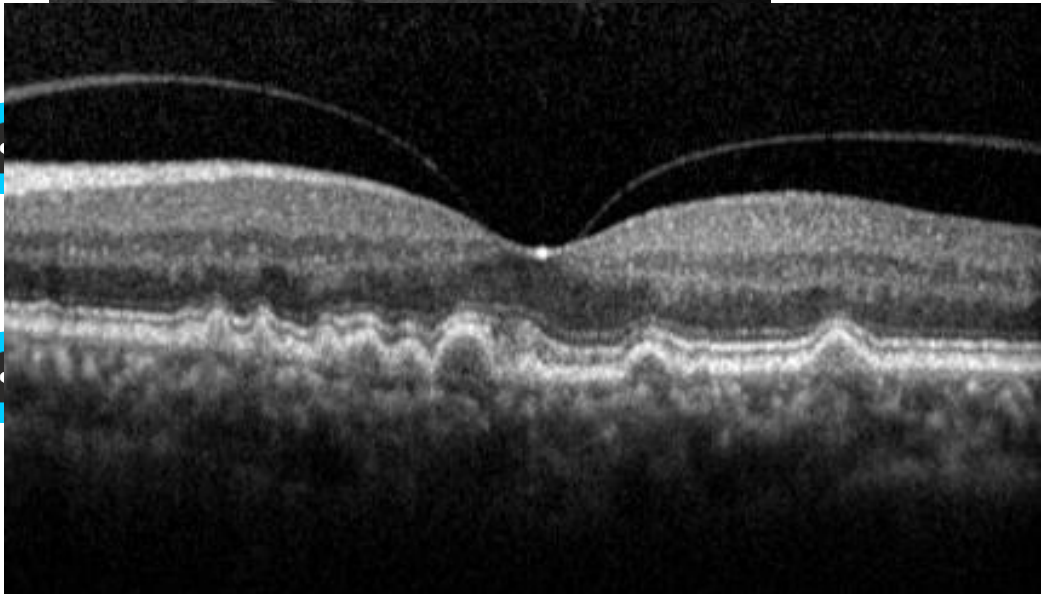
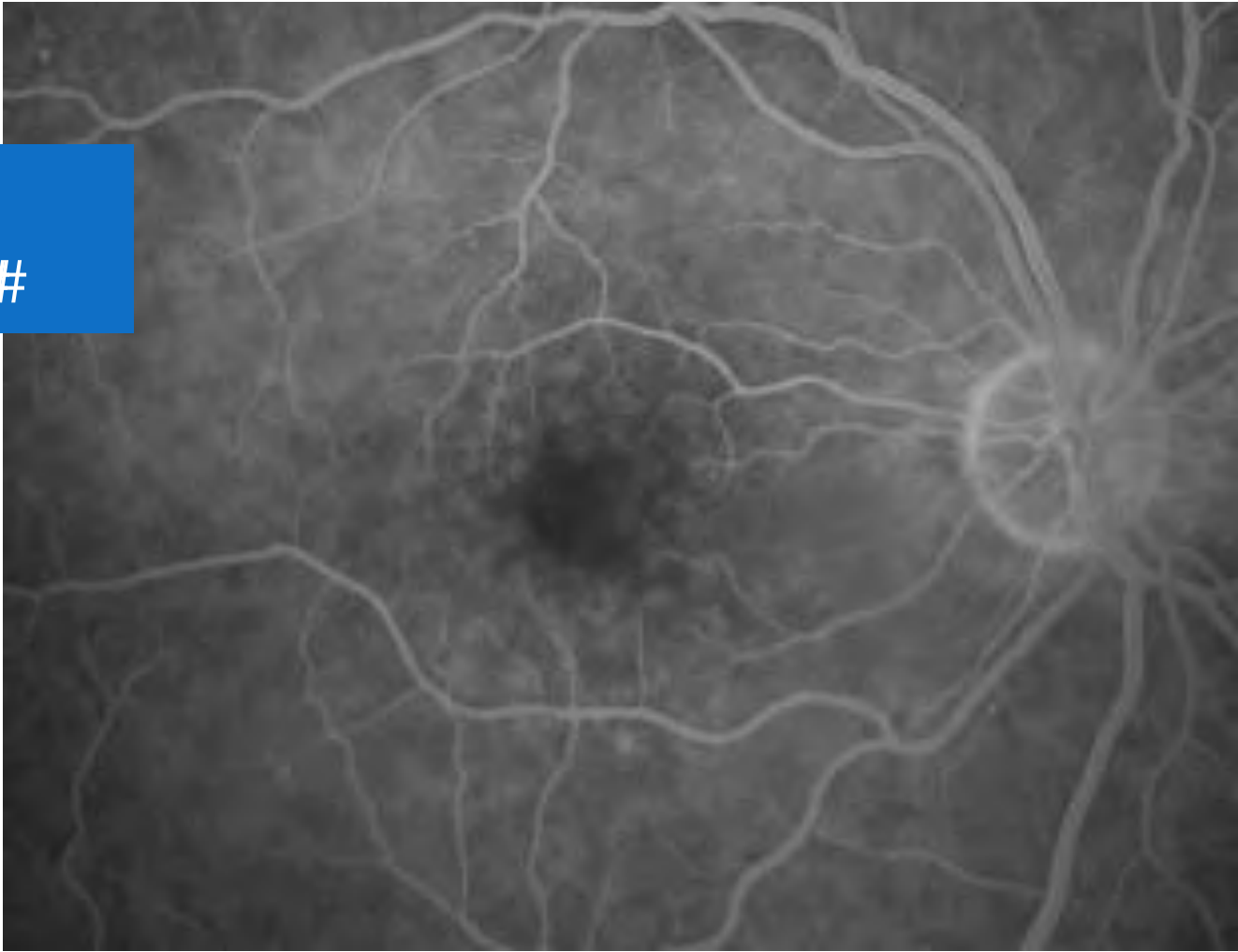
Basal Laminal Drusen

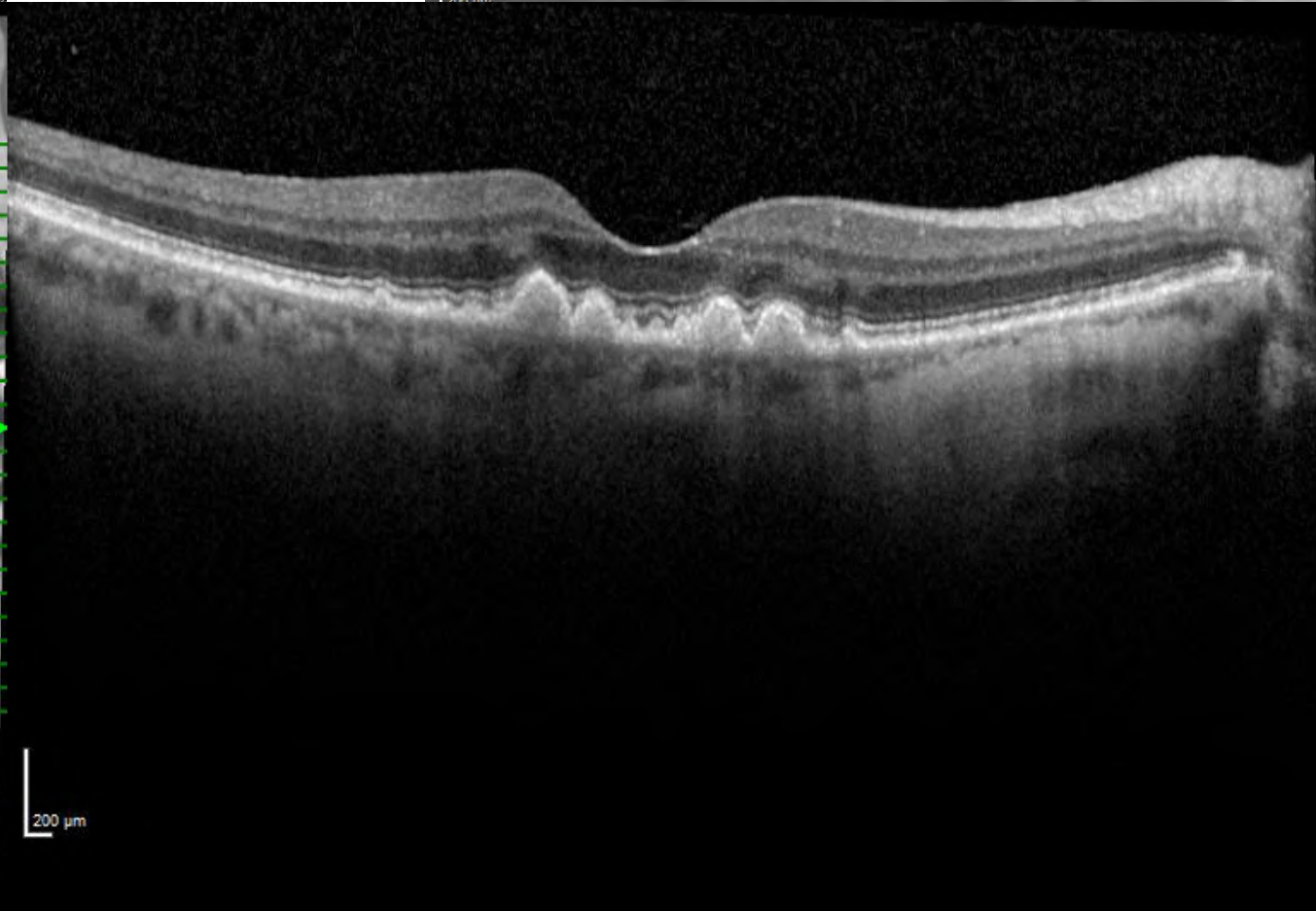
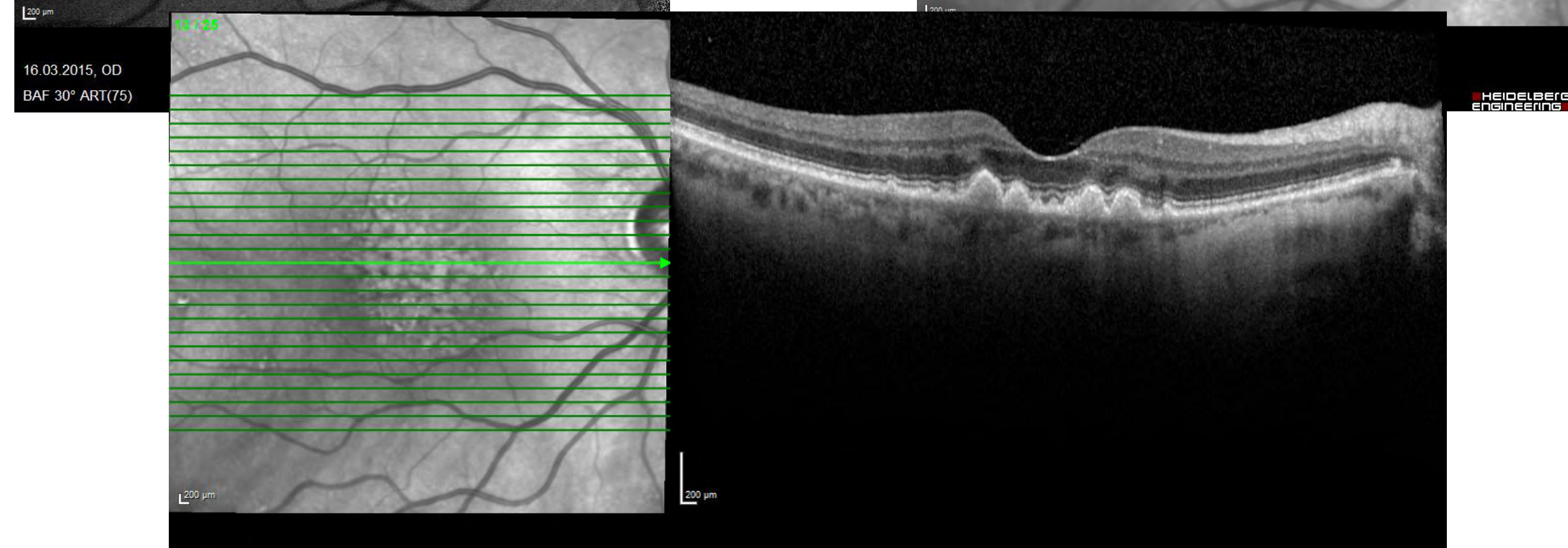
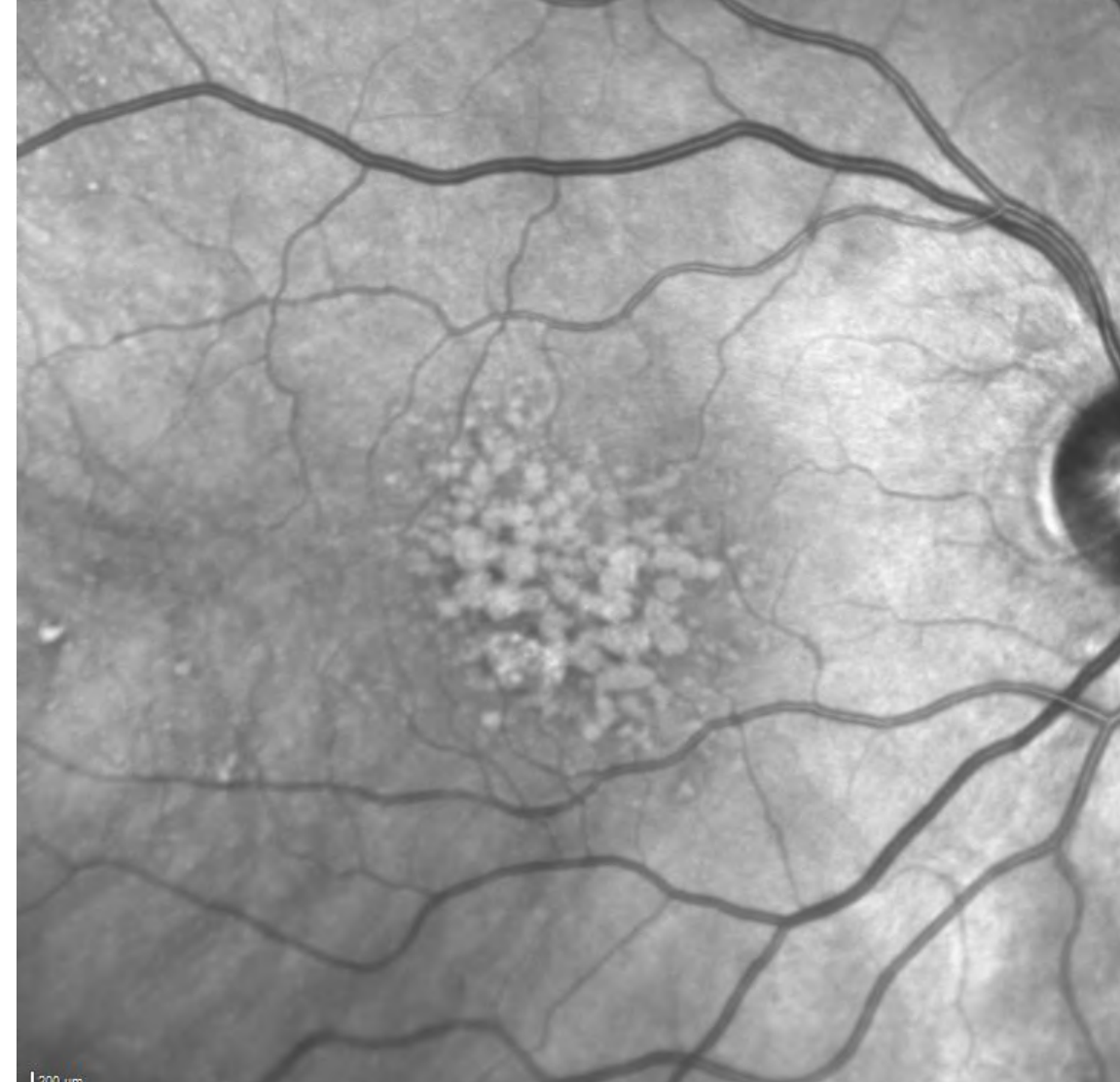


Yumuşak Drusen

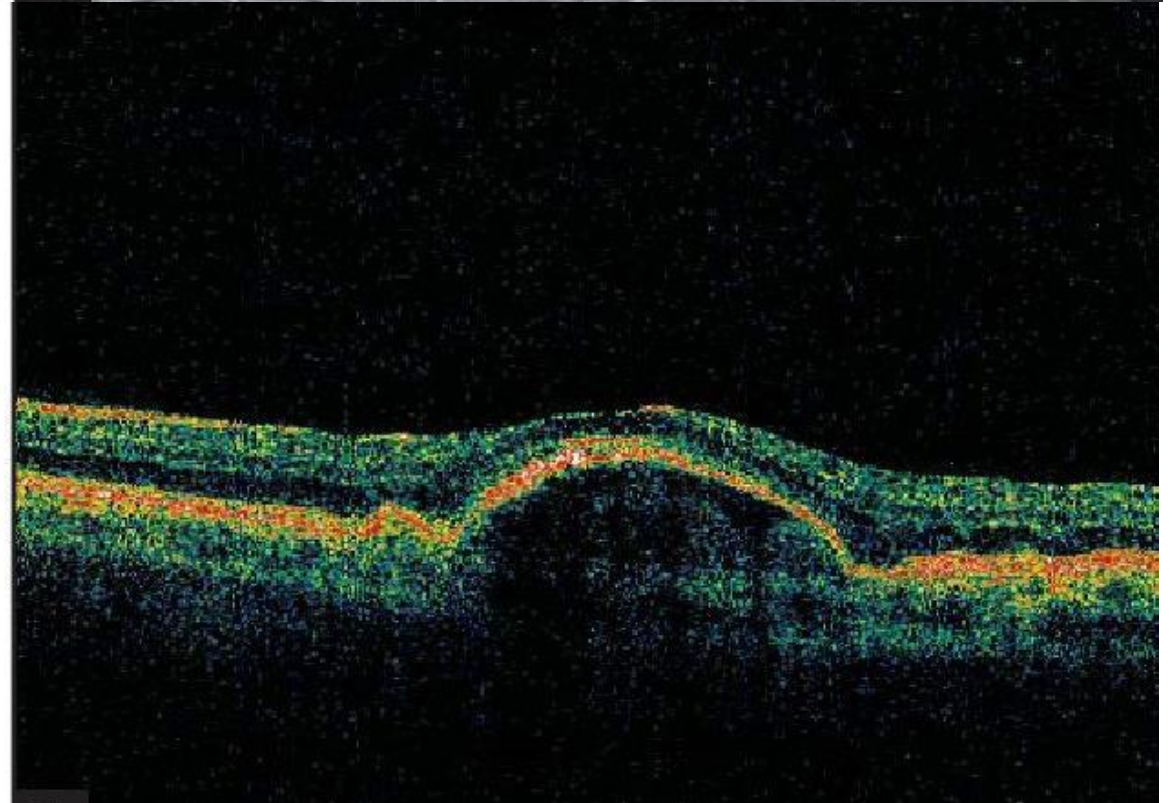
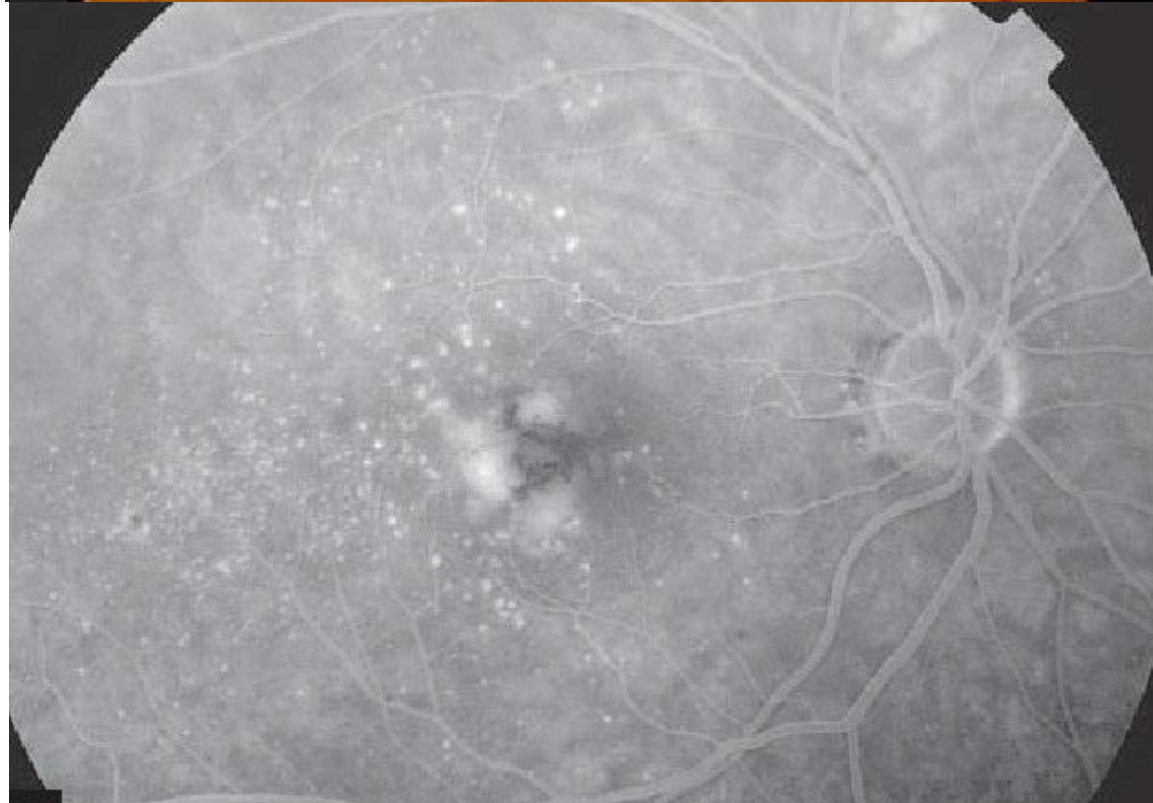
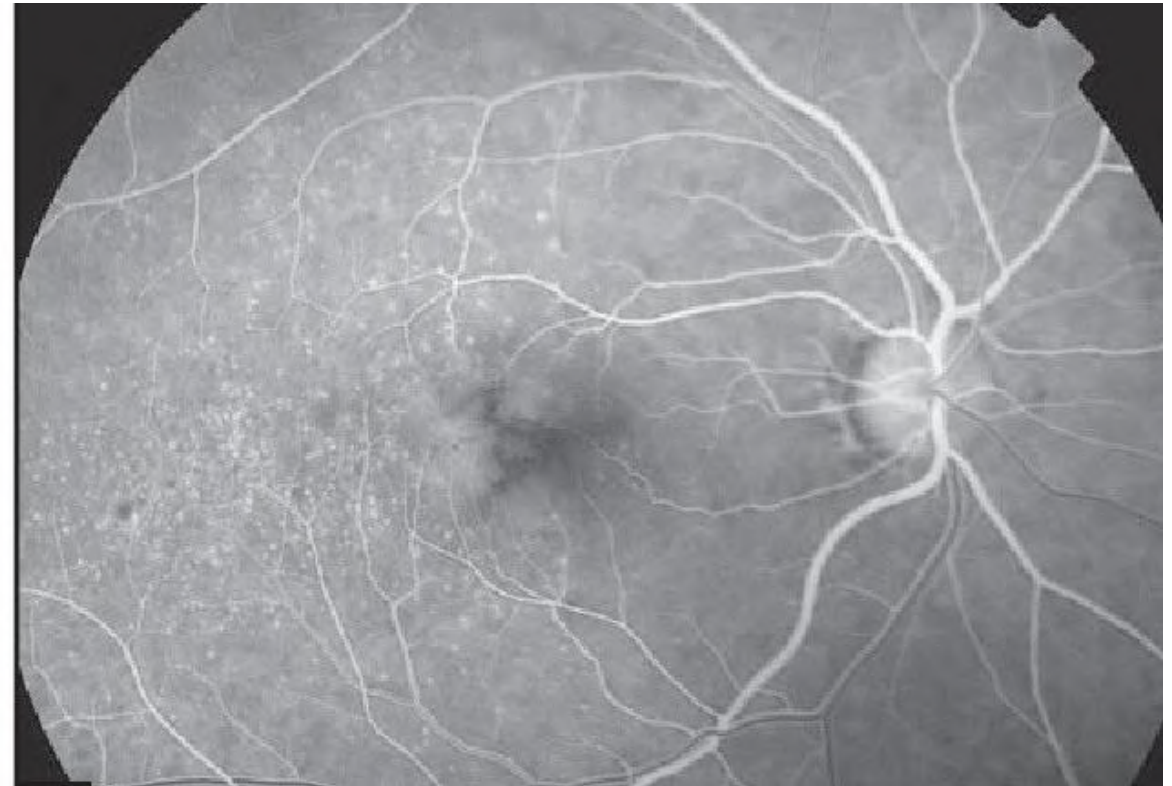
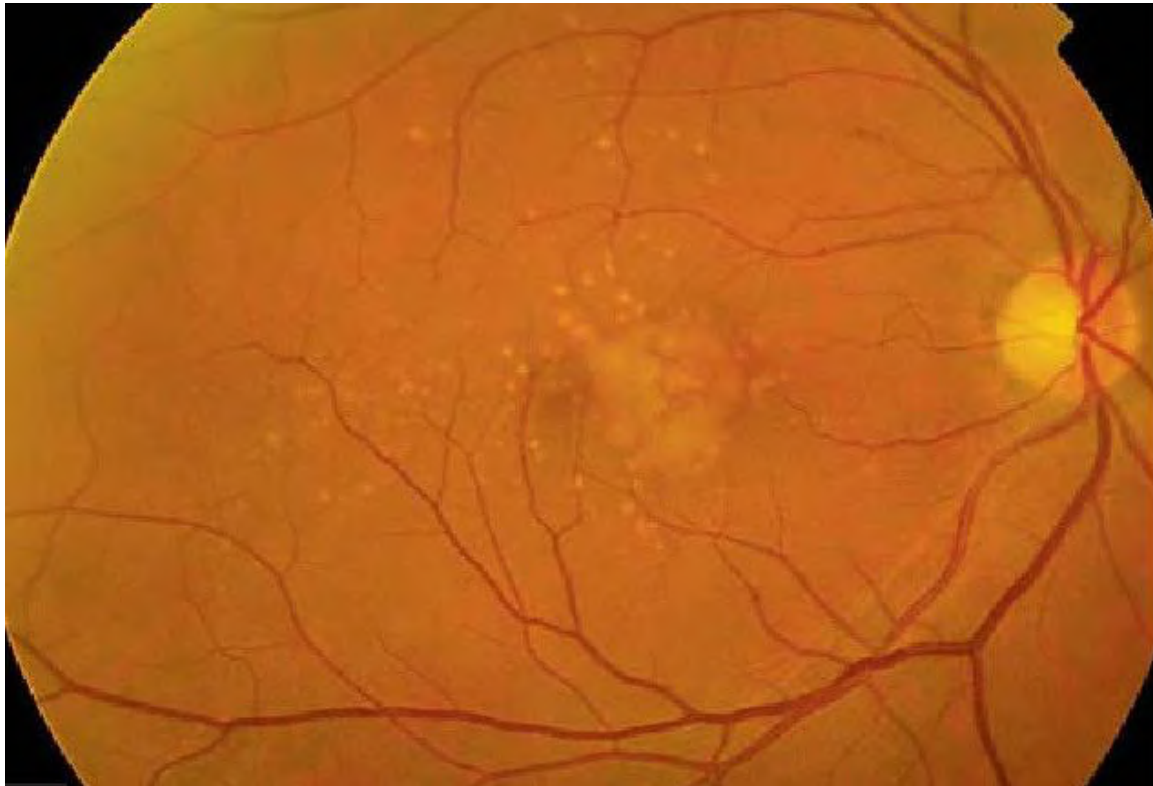


72#y#E##
GK:#b.8/o.8##

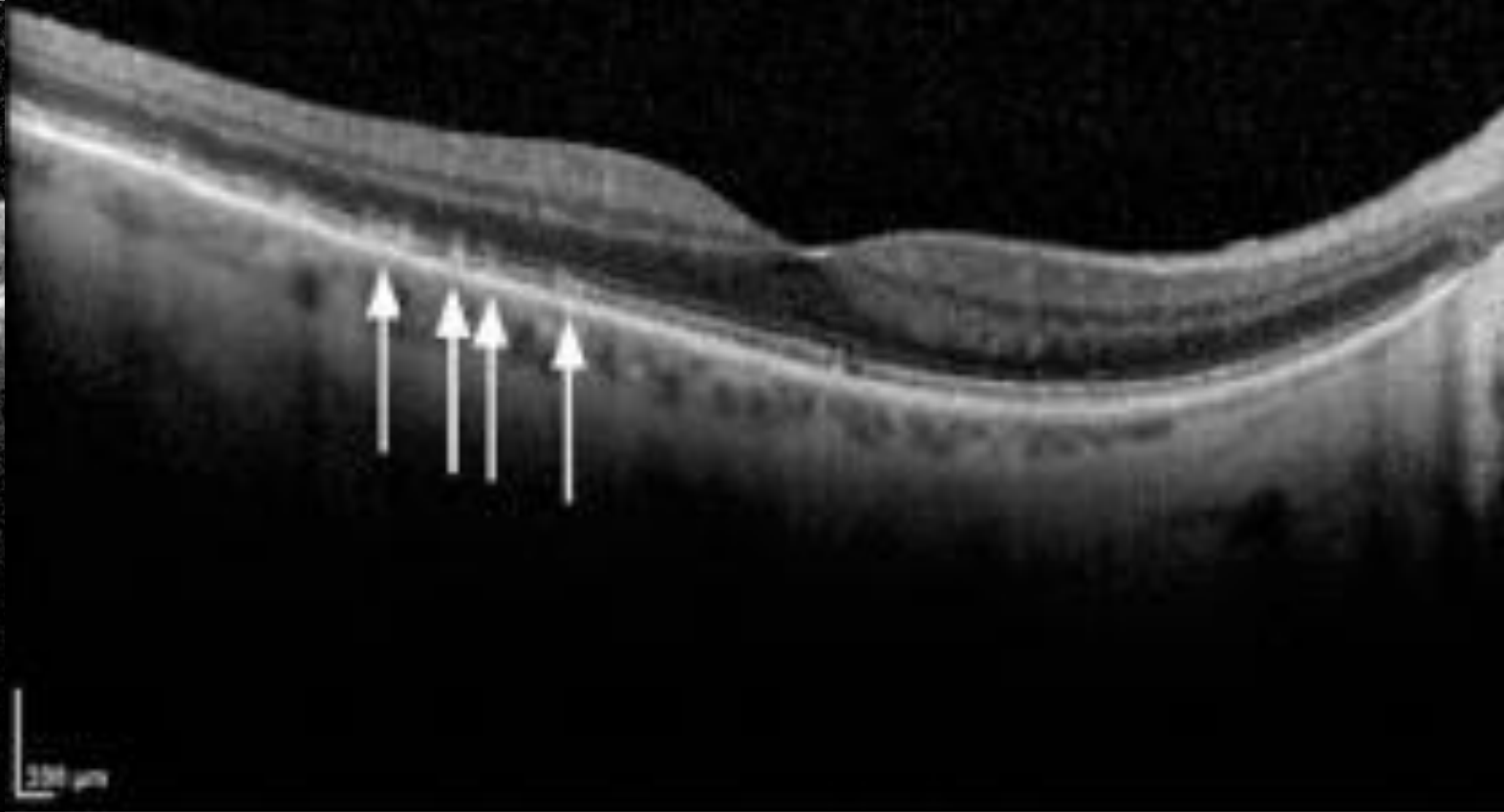
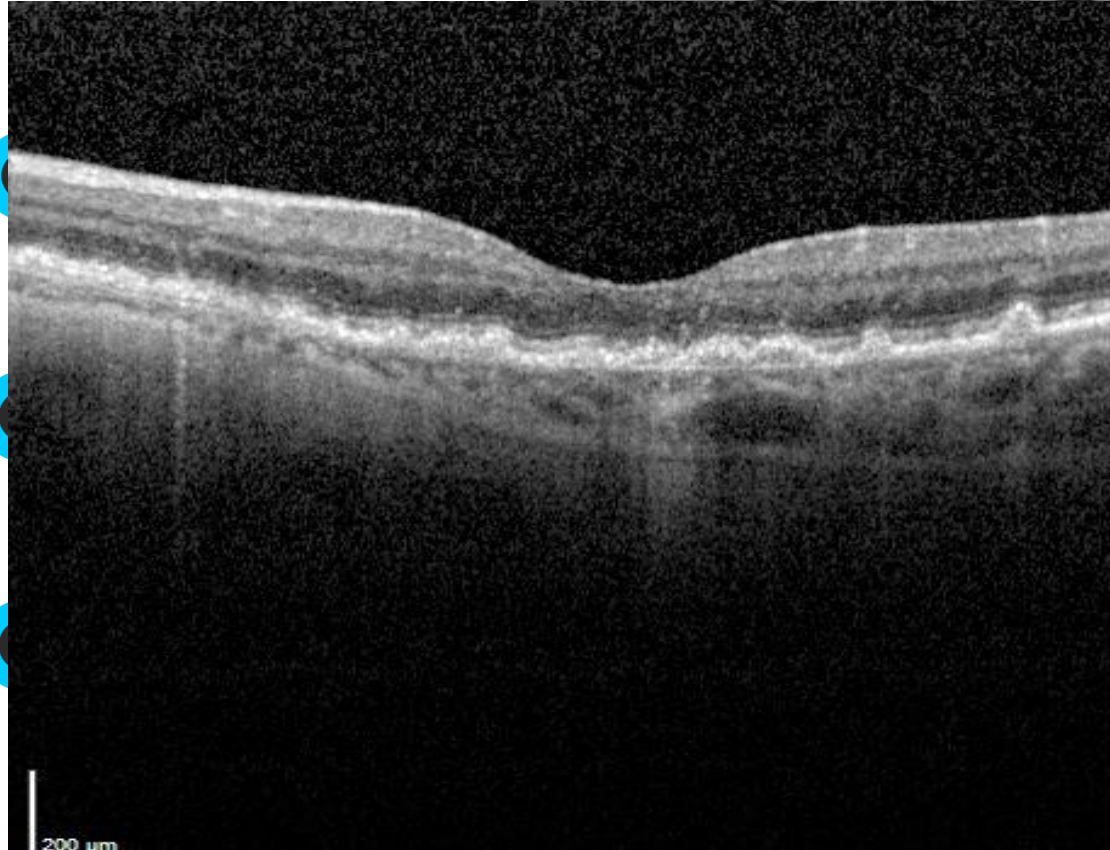




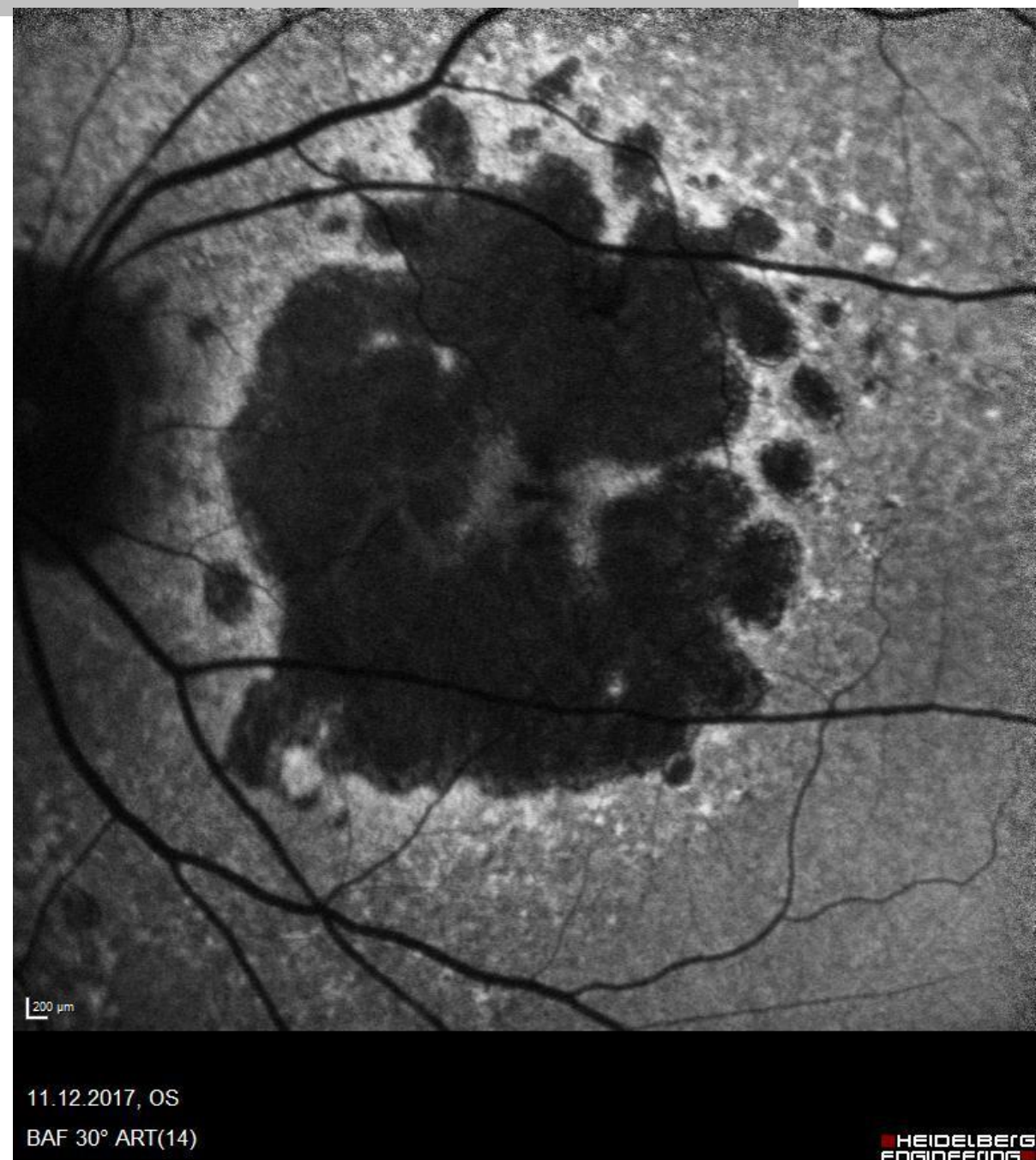
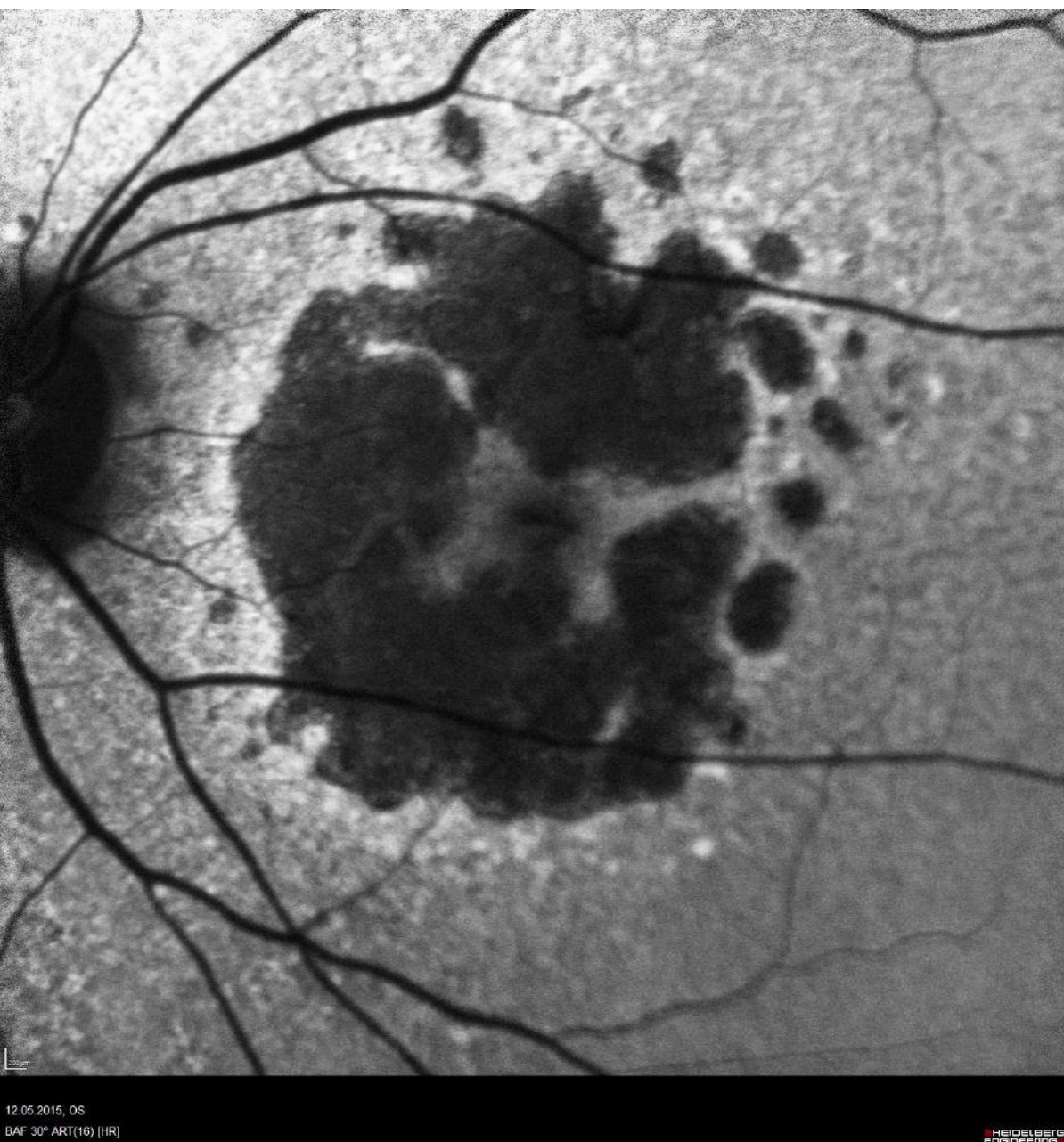
Drusenoid PED

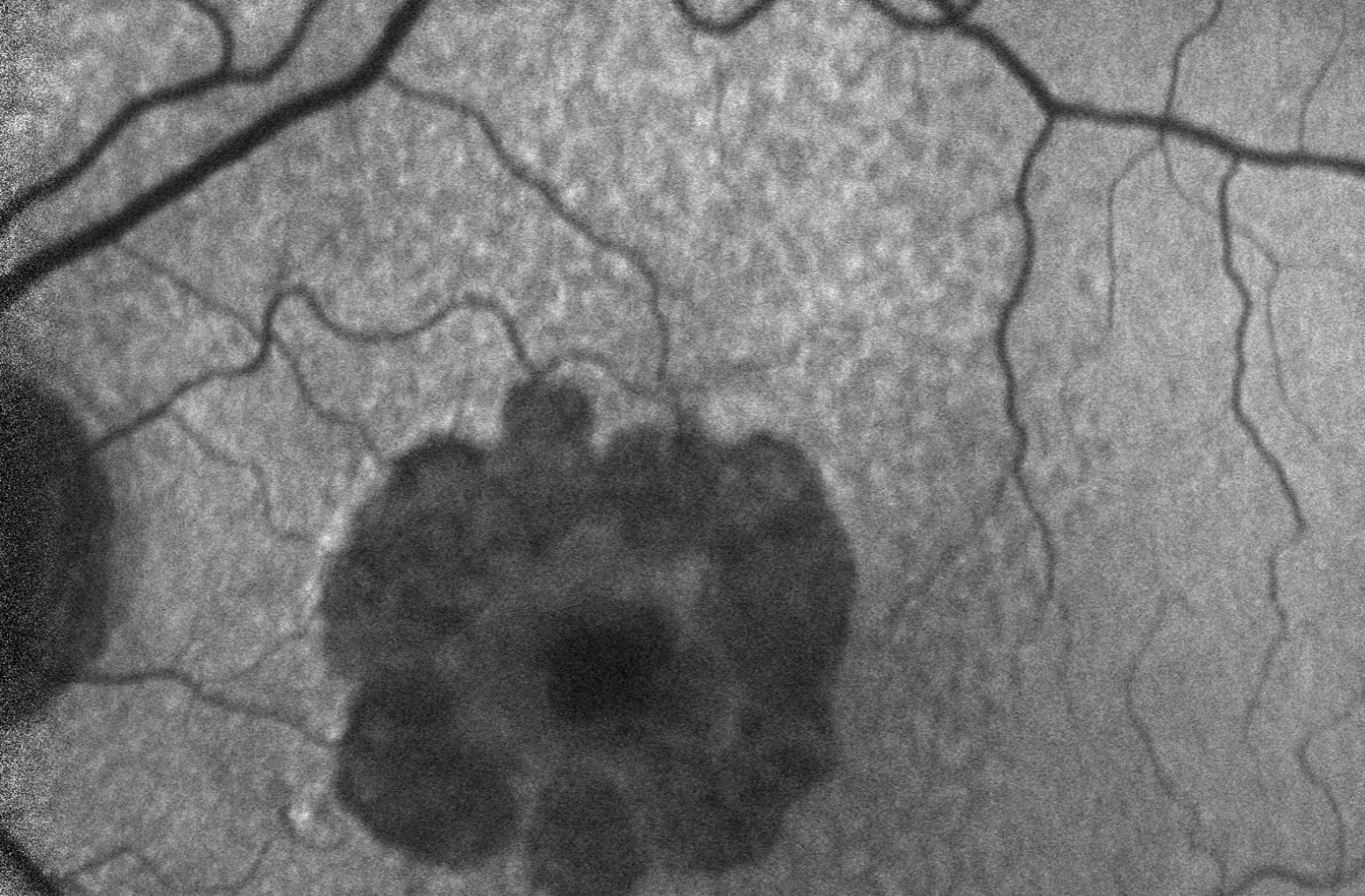


Psödoretiküler drusen

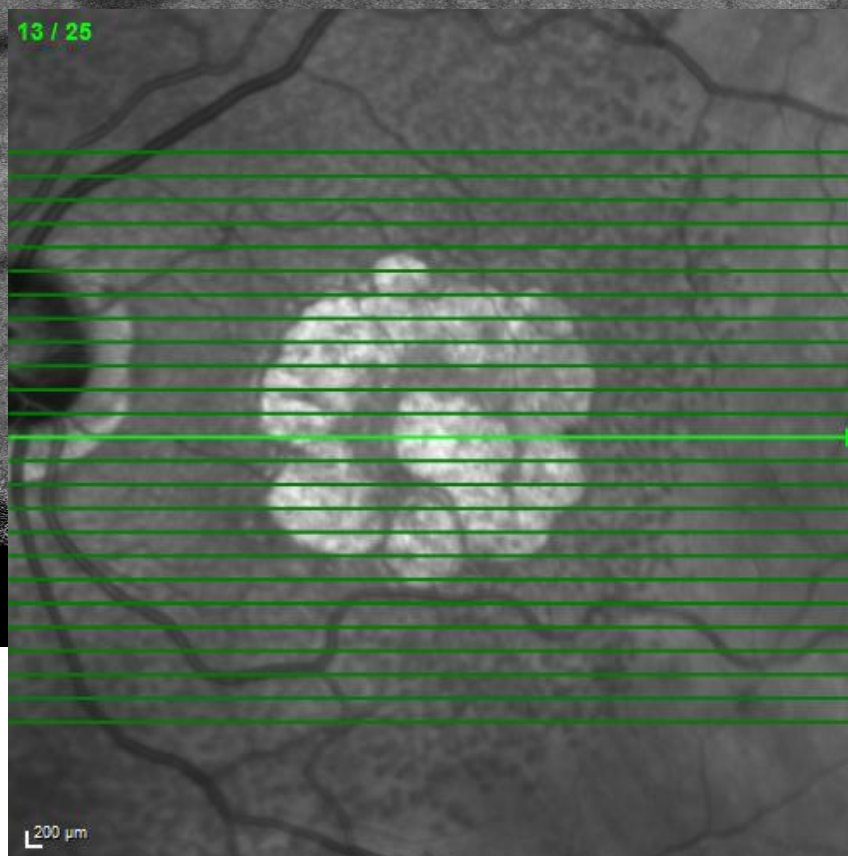


Coğrafik Atrofi

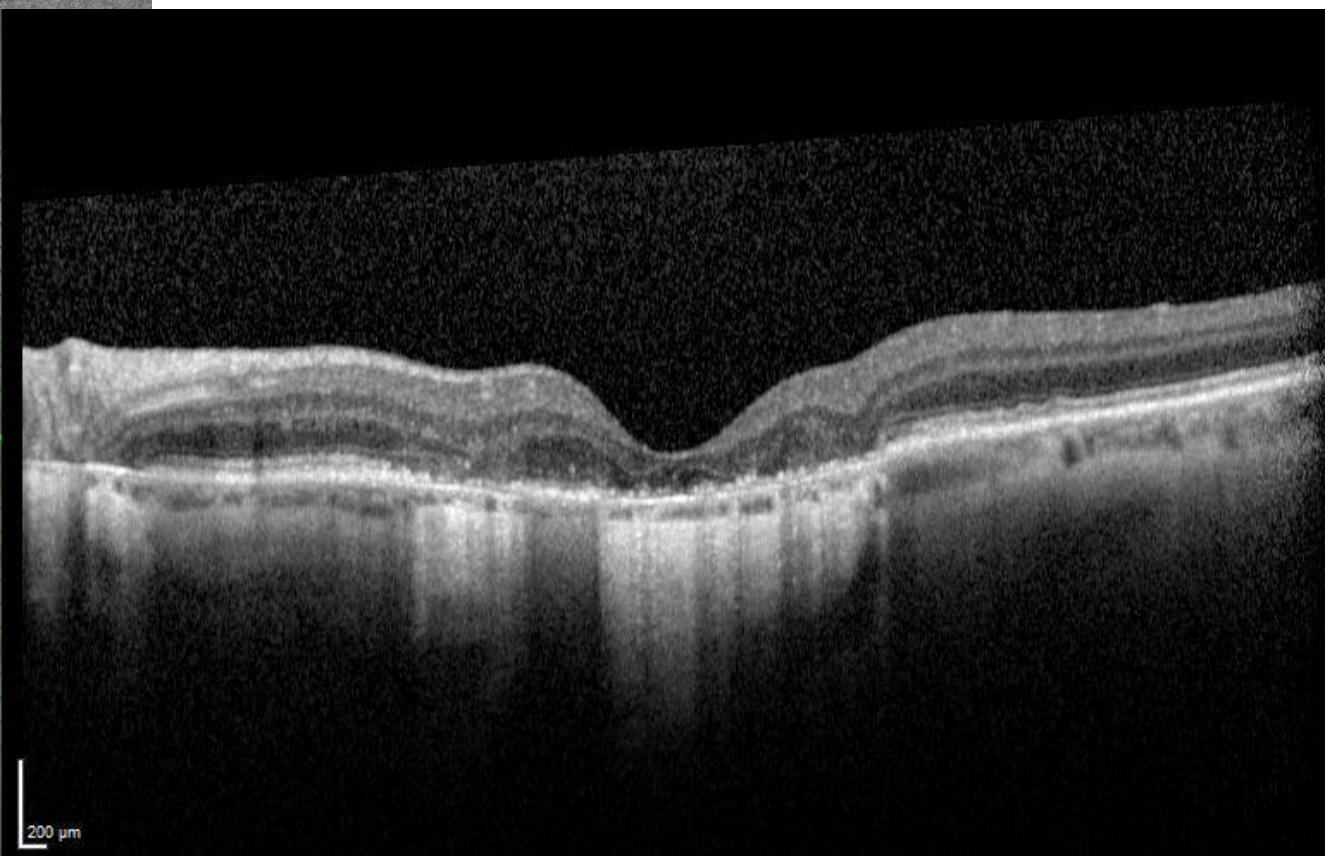




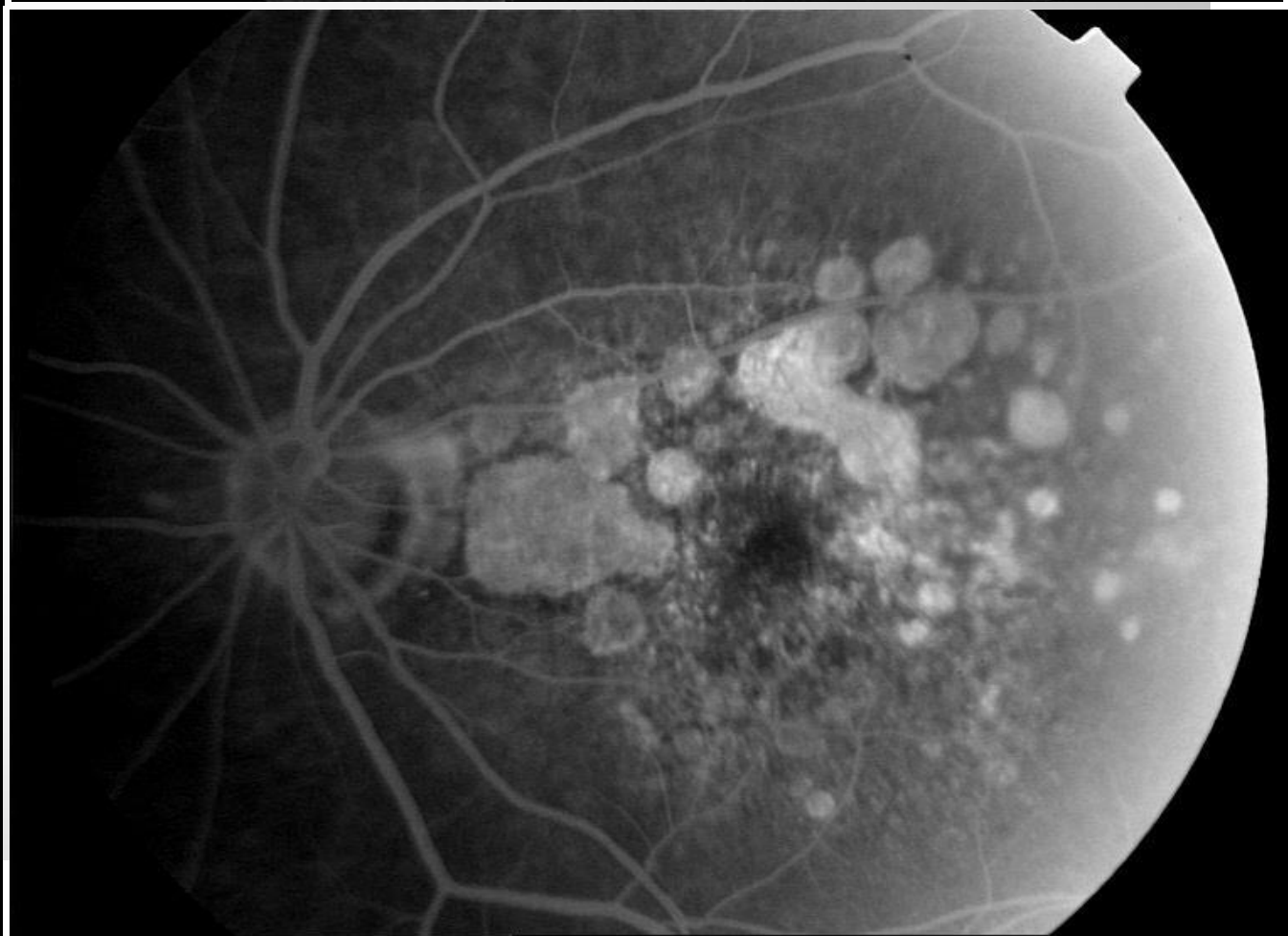
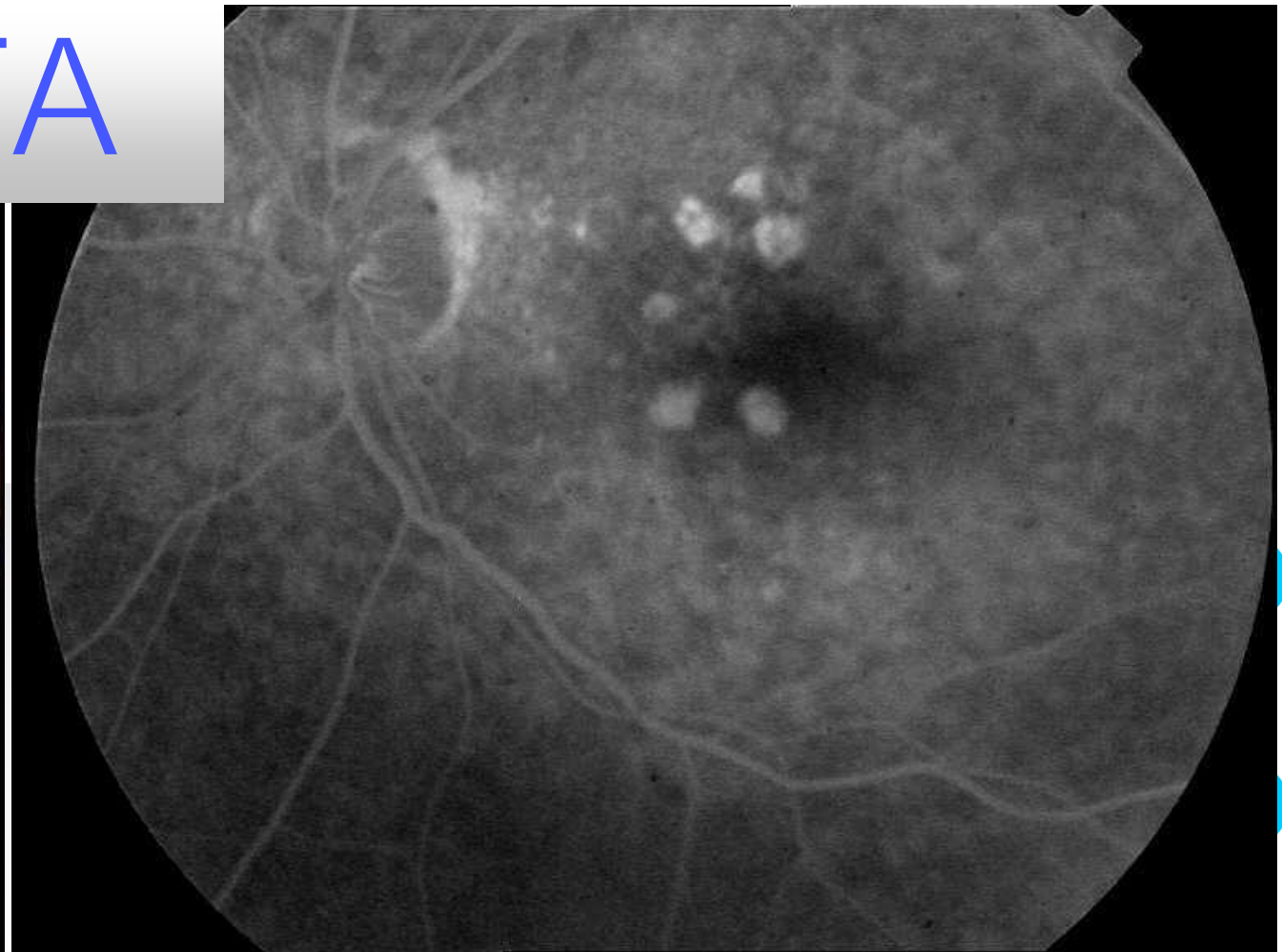
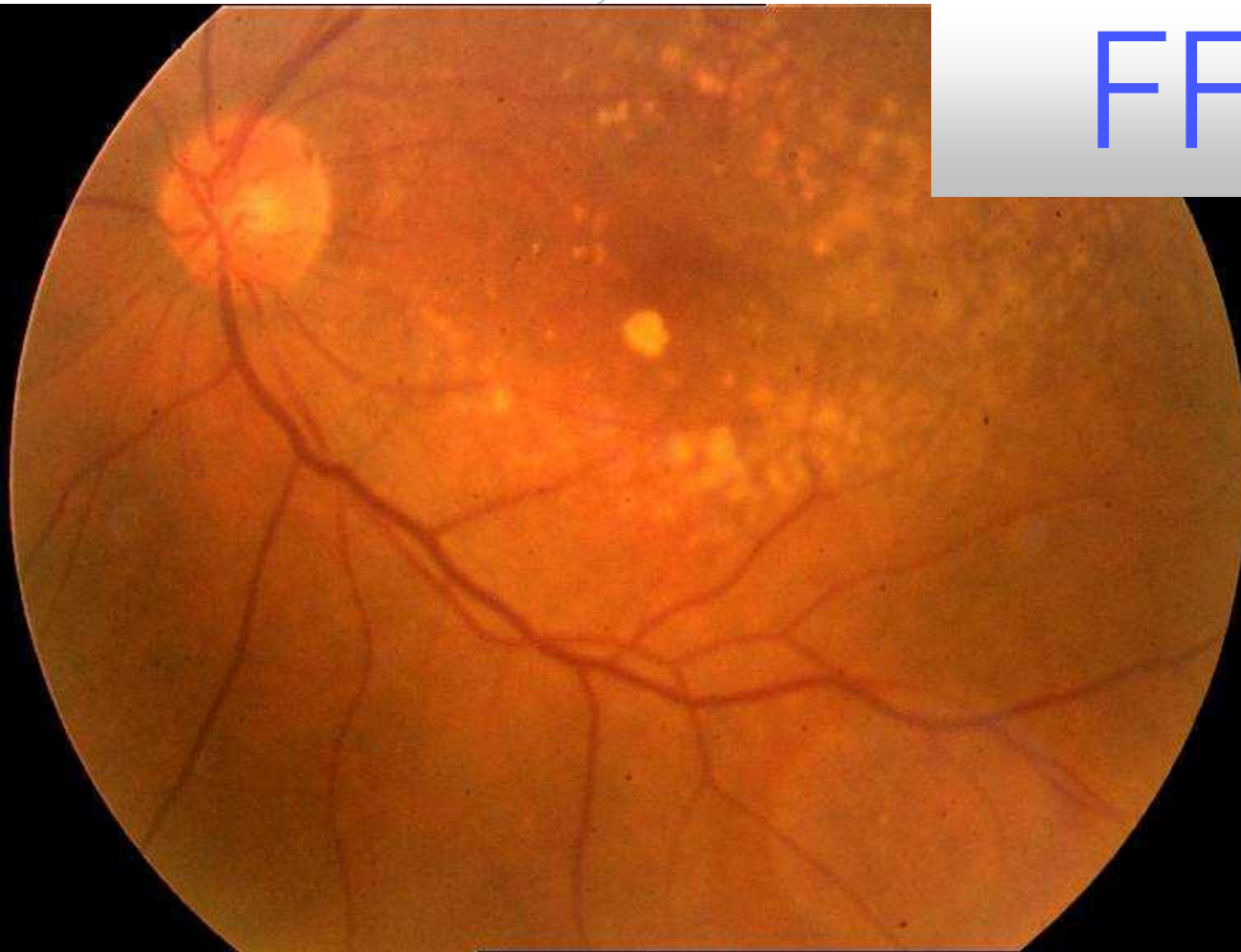
11.09.2017, OS
BAF 30° ART(22) [HR]



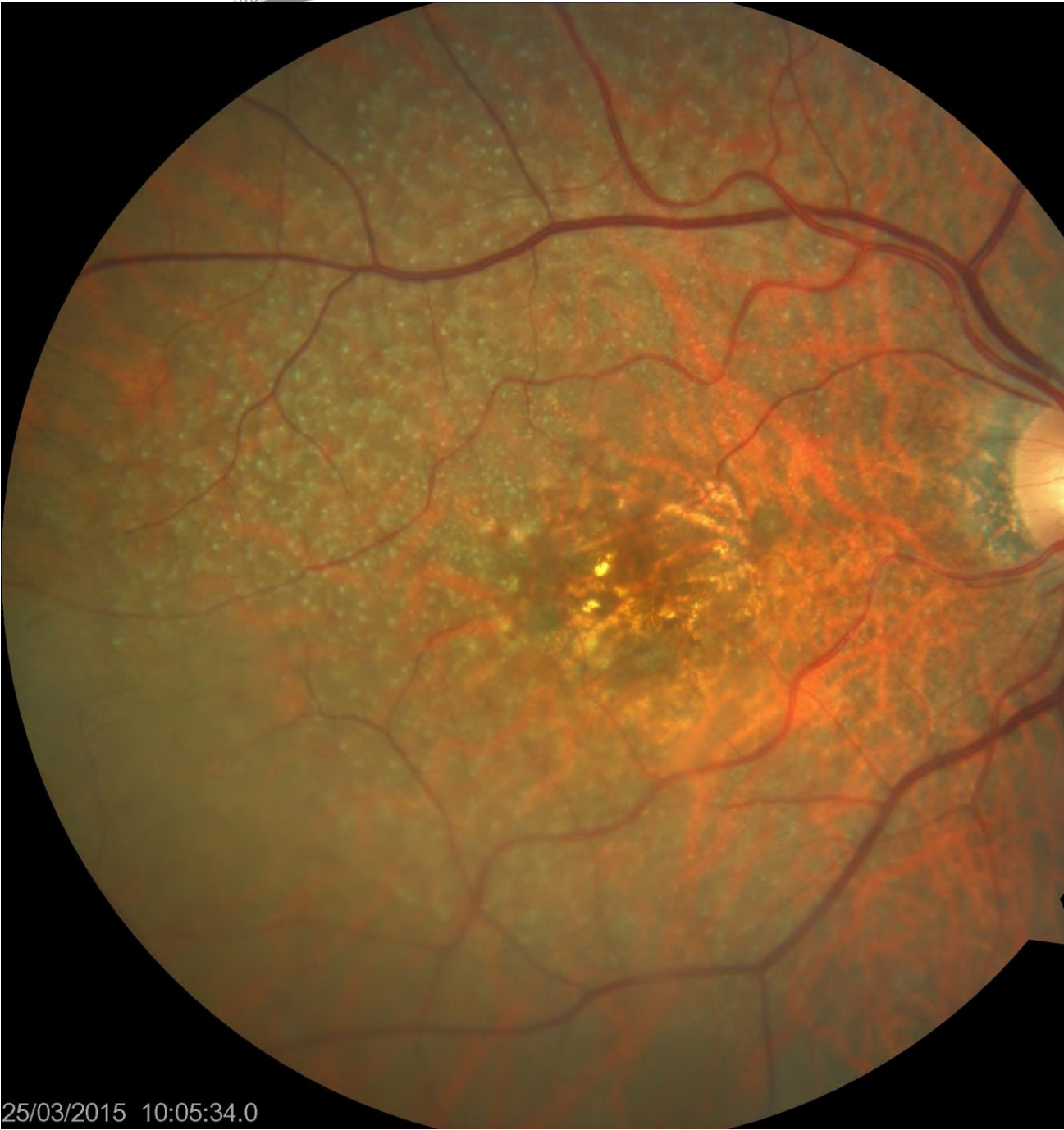
11.09.2017, OS
IR&OCT 30° ART [HS] ART(11) Q: 31



FFA



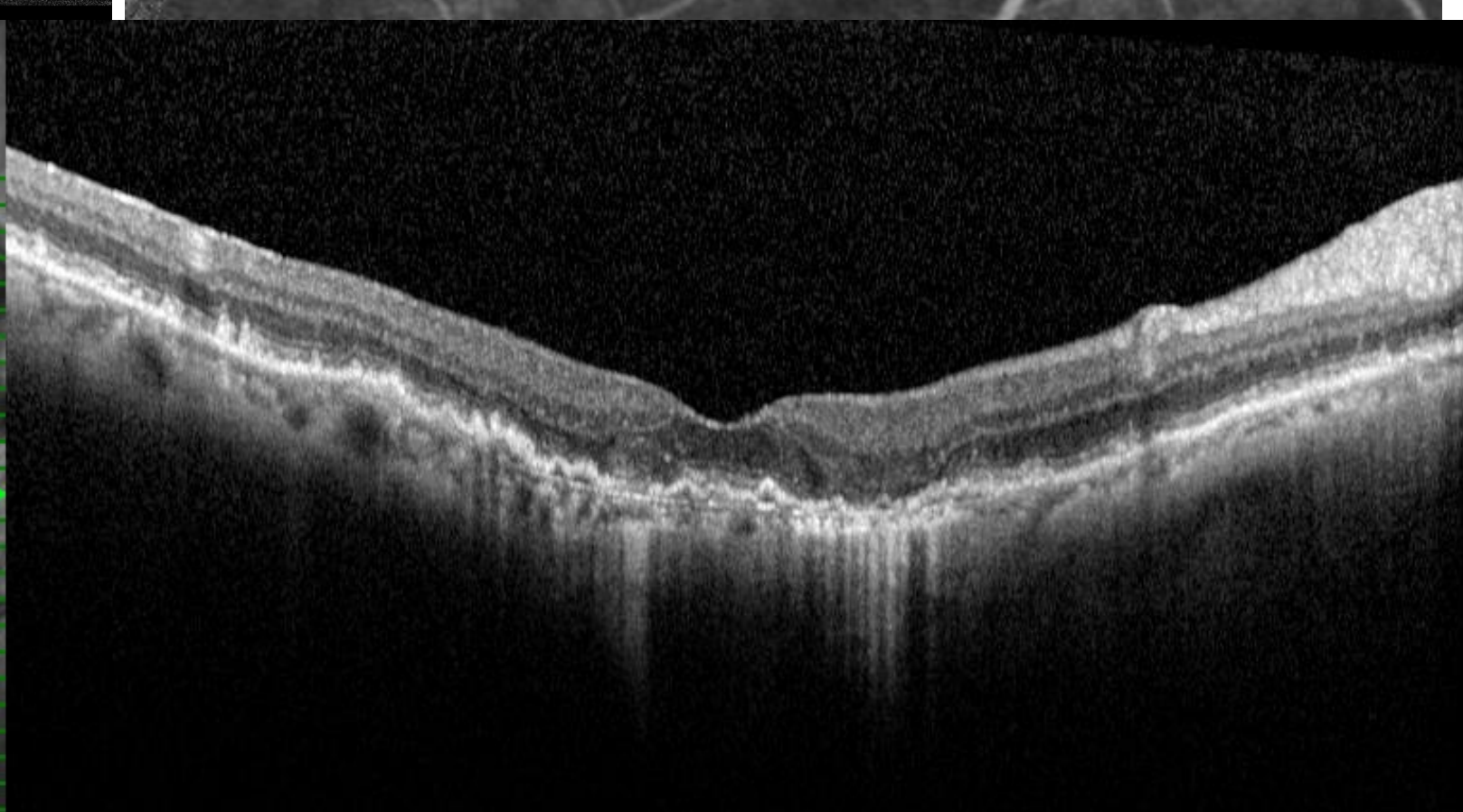
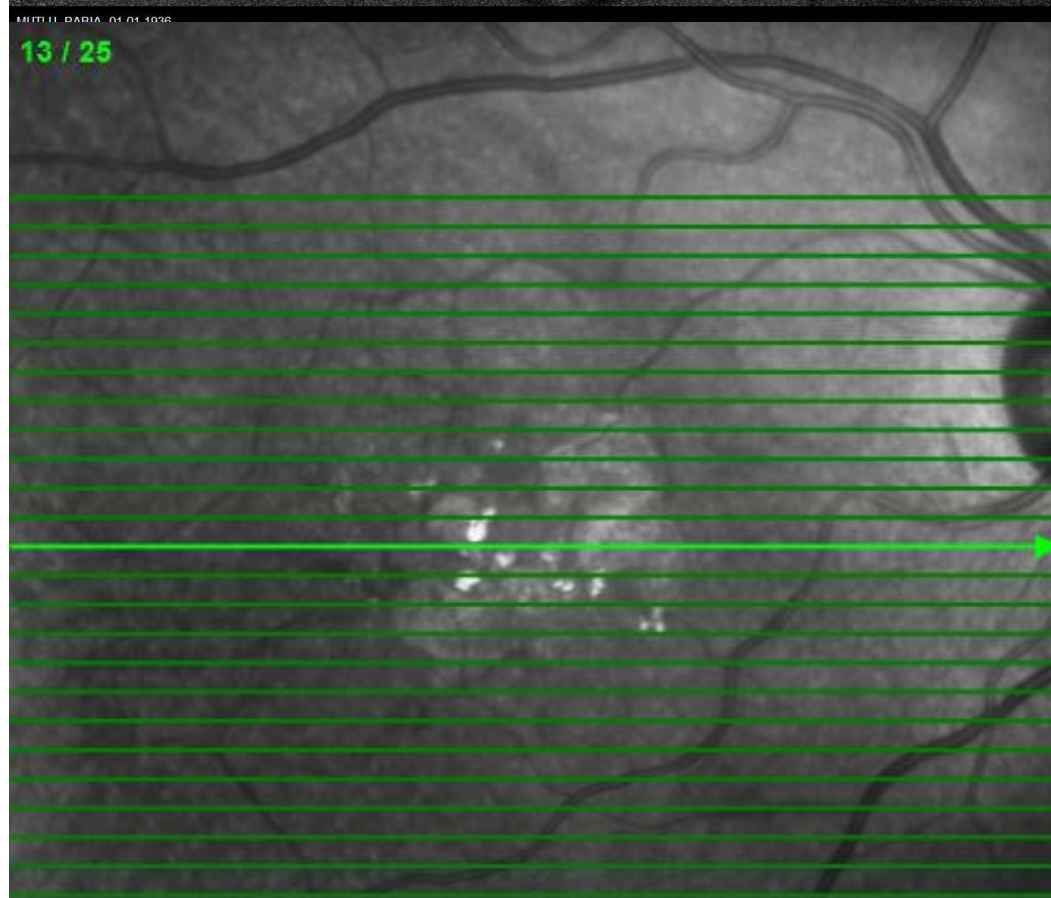
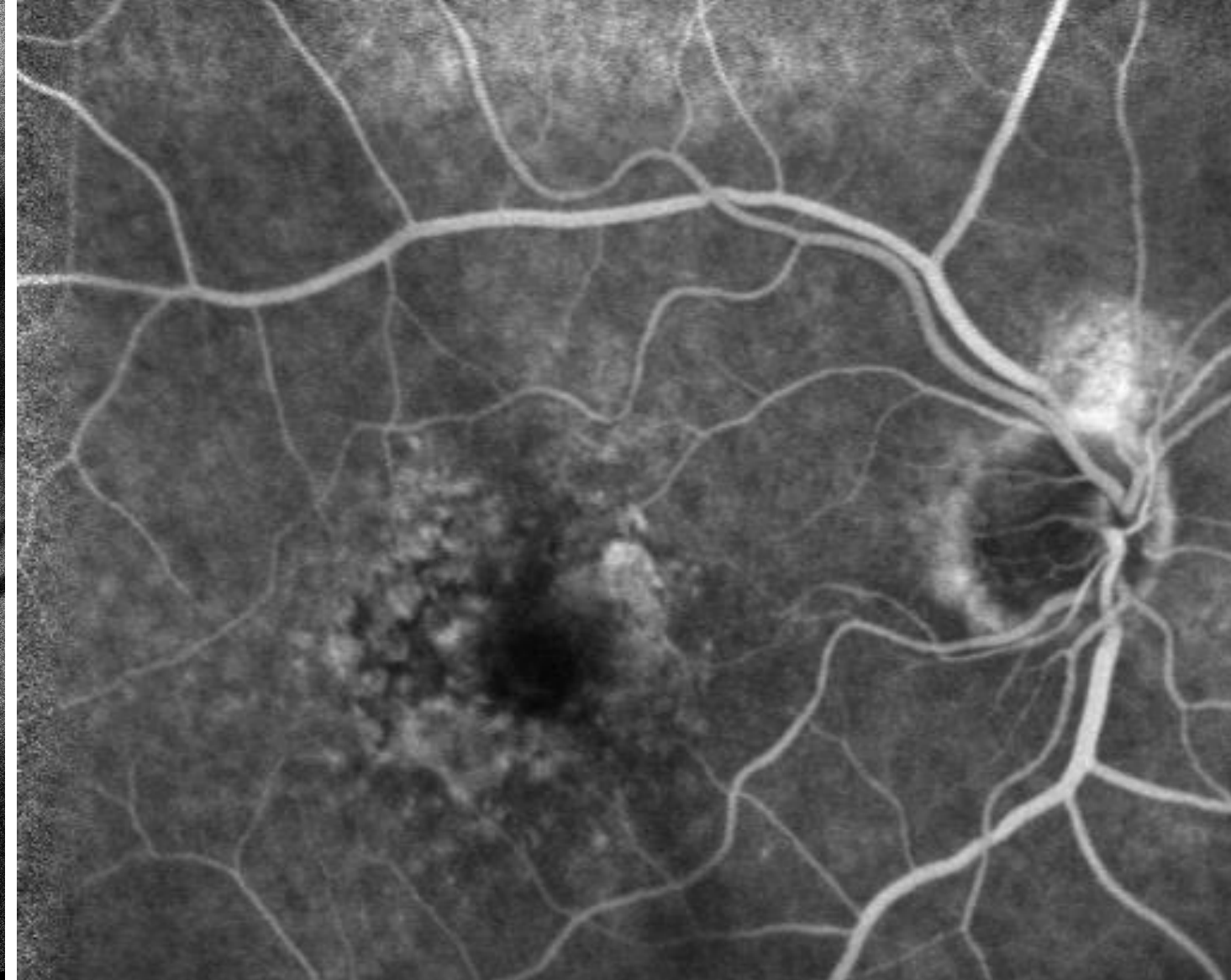
Coğrafik Atrofi

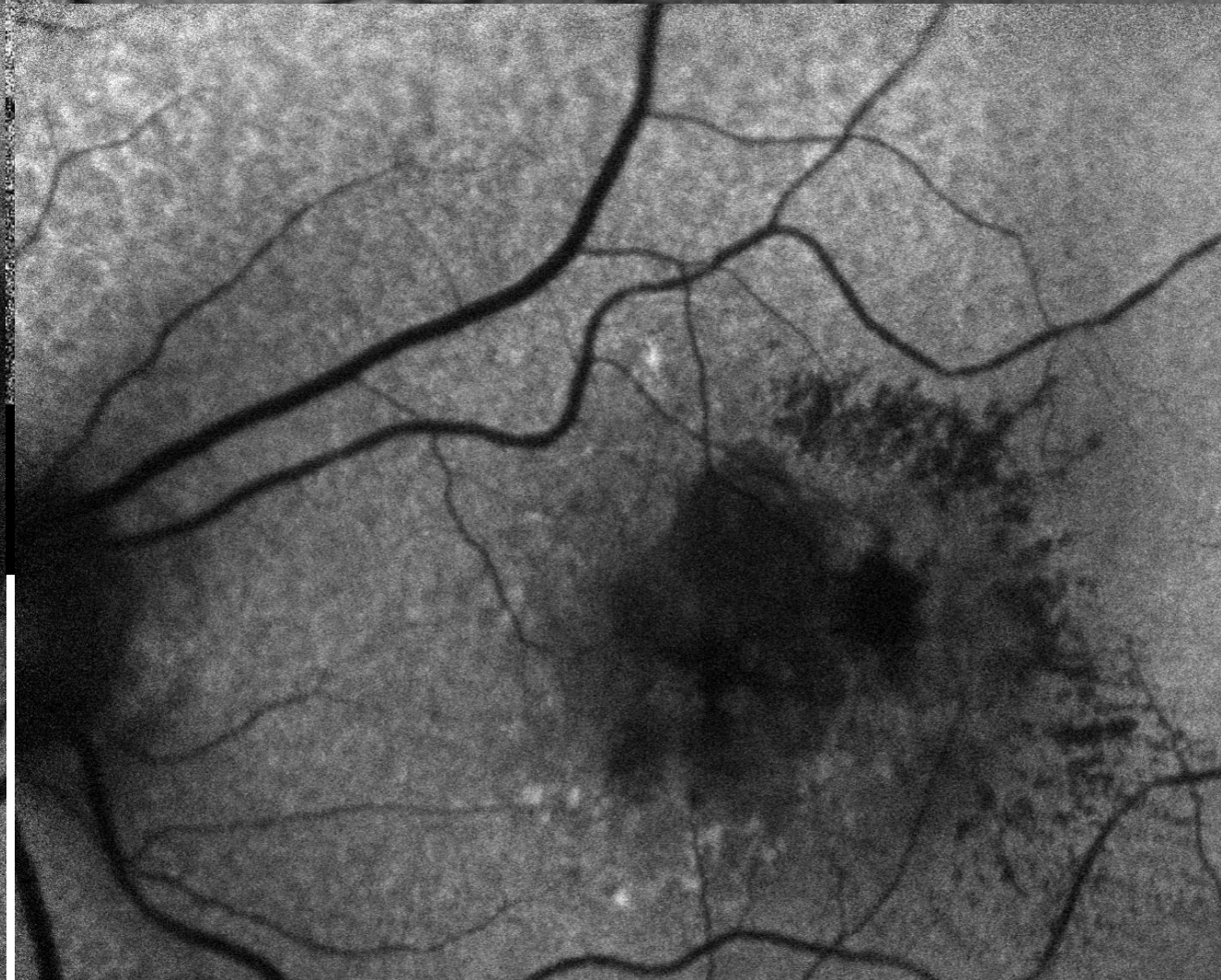
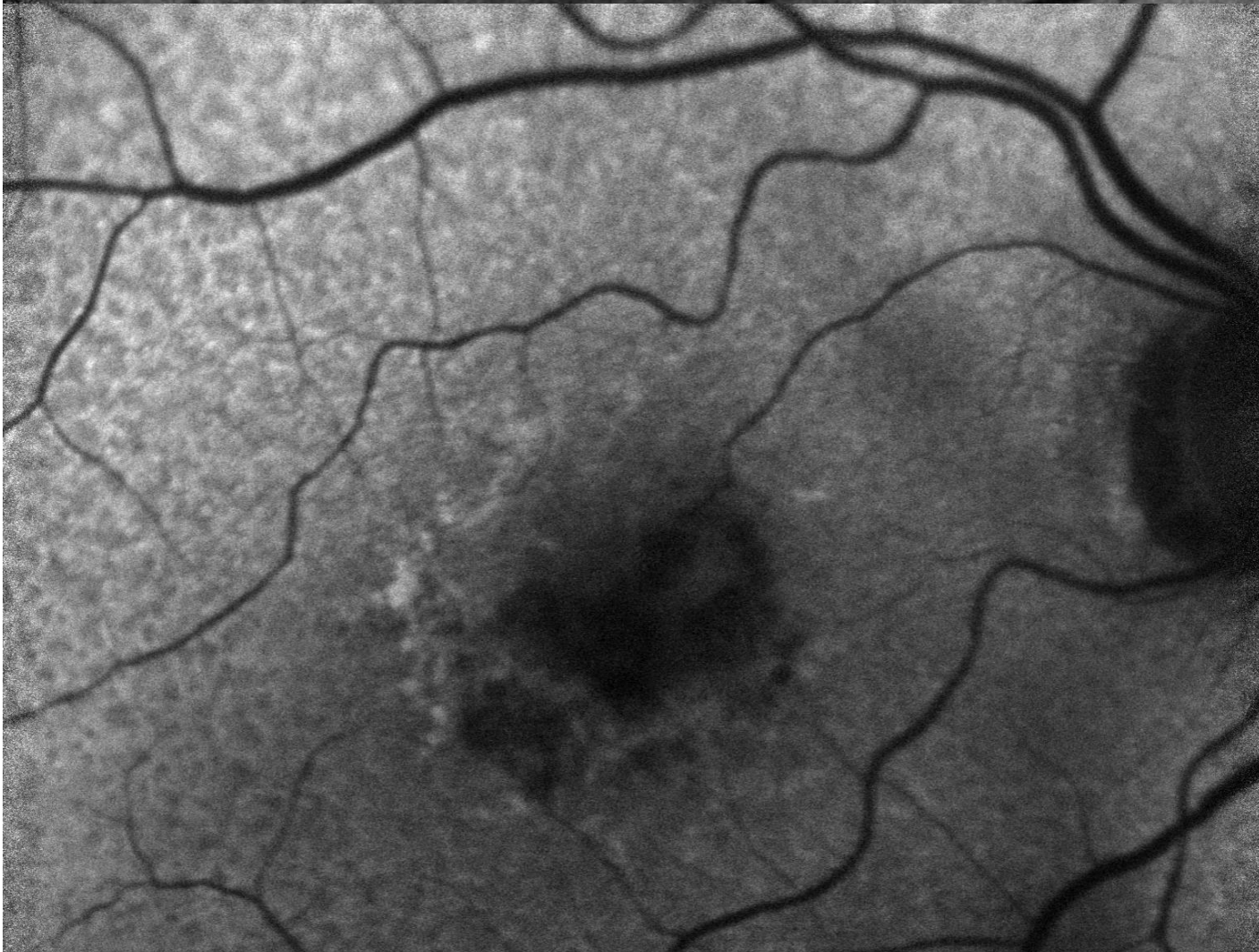
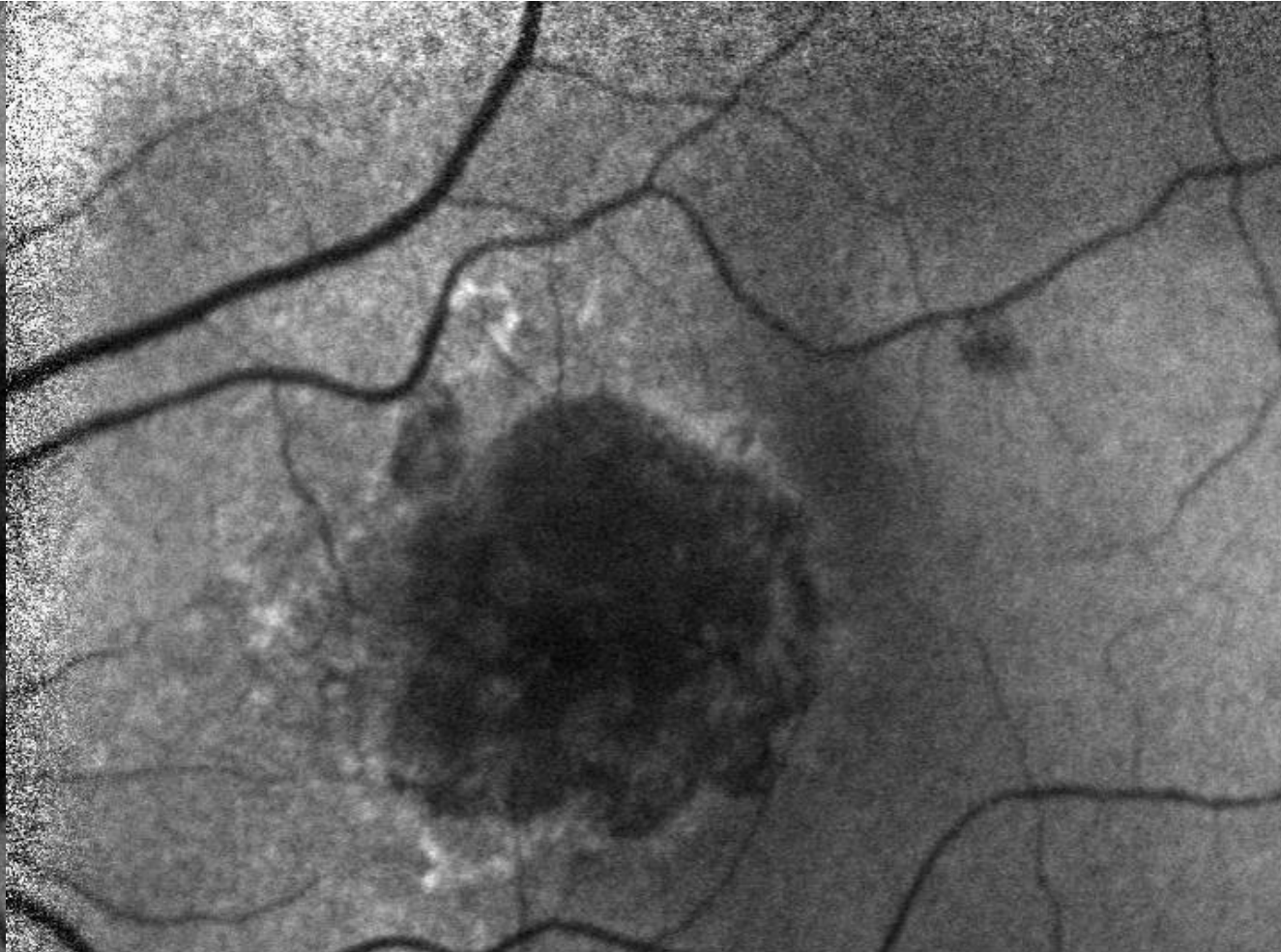
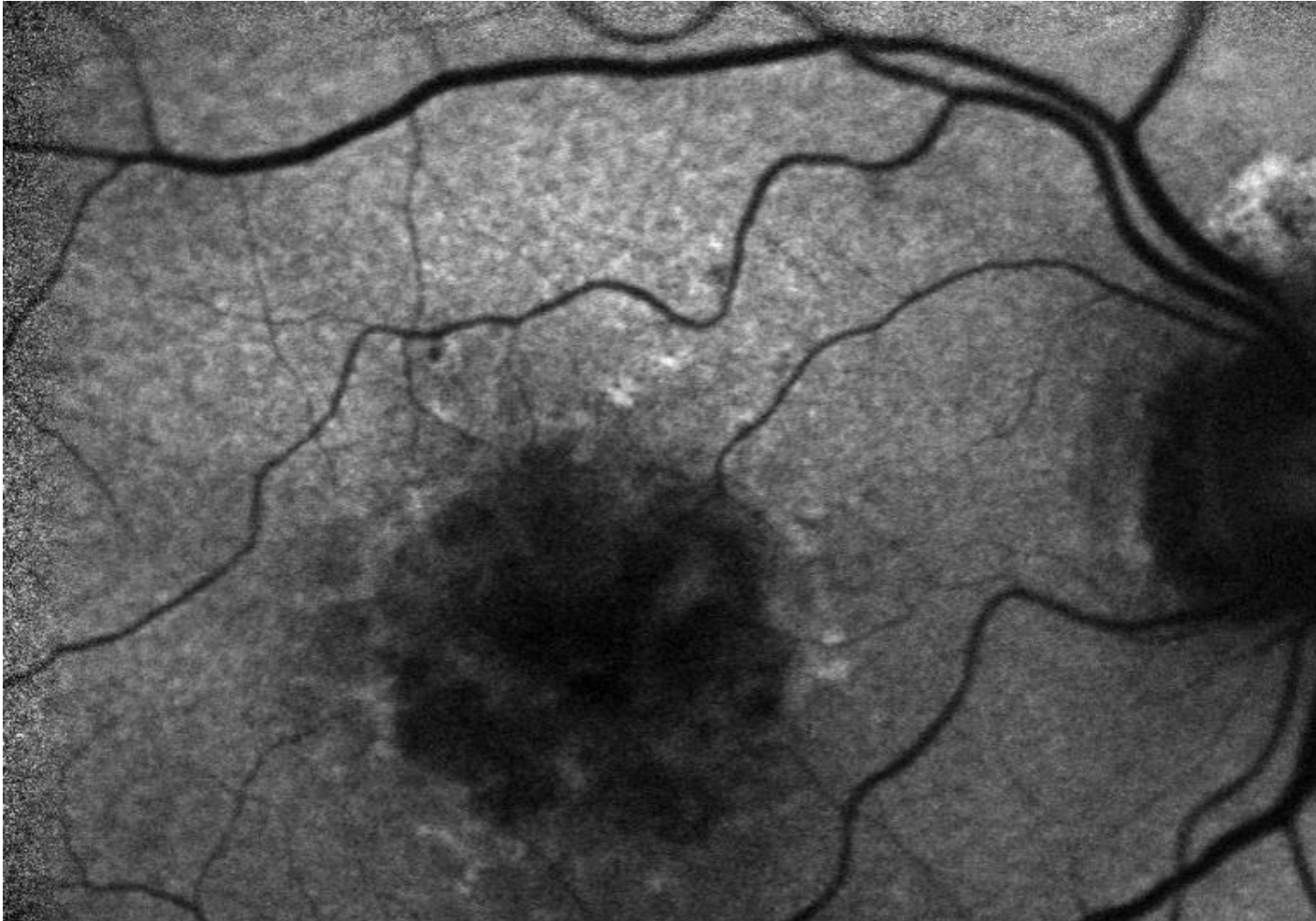


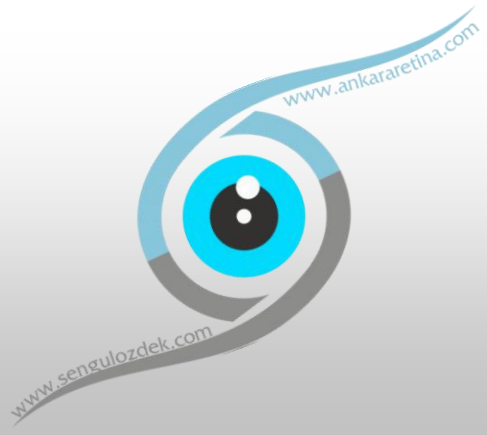
25/03/2015 10:05:34.0



25/03/2015 10:06:26.1

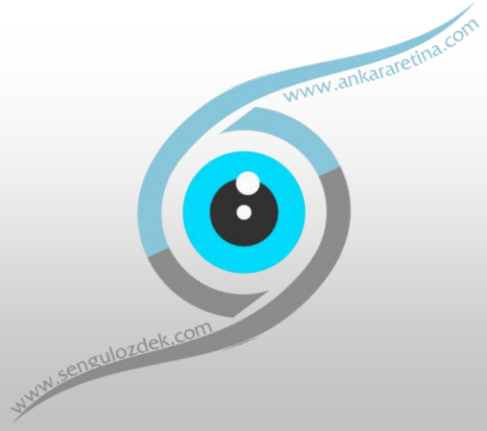






OCTA

- Kuru tip de yeri yok?
- Yeni çalışmalar!
 - Vaskülerize drusen
 - Subklinik KNV
 - Sessiz KNV

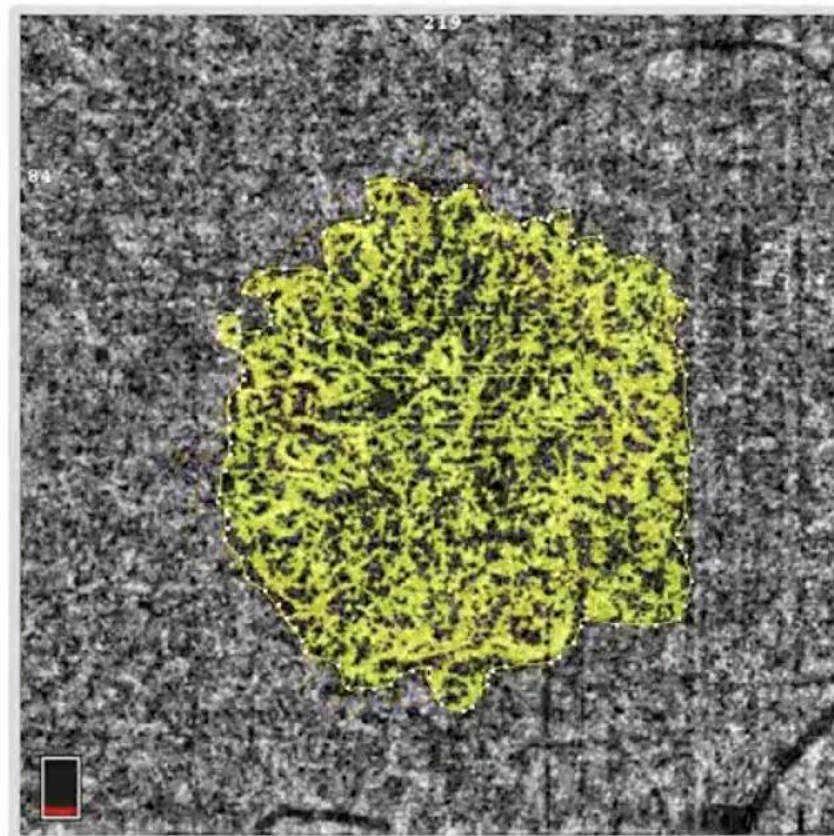
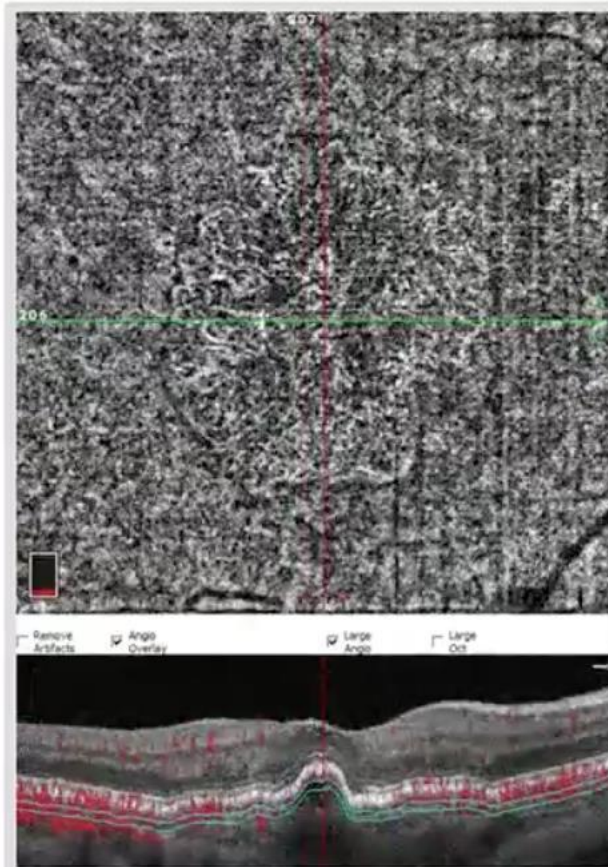
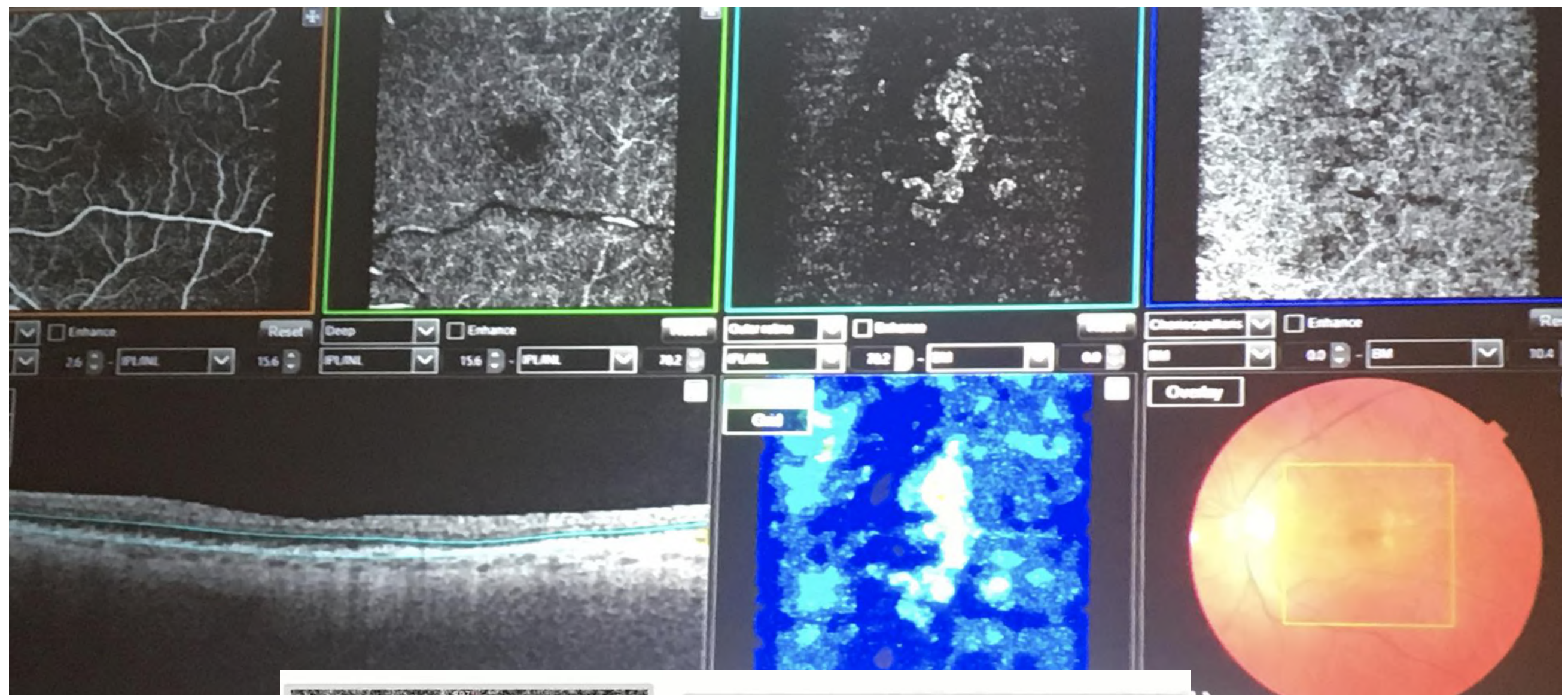


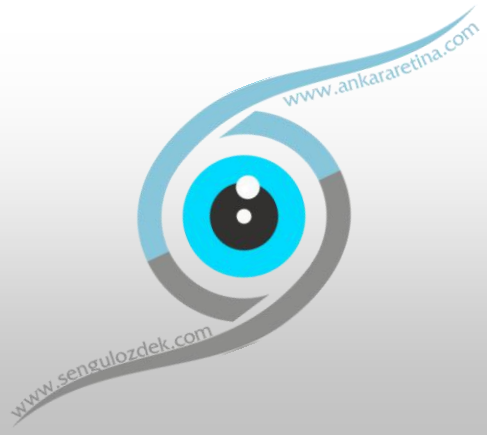
OCTA

- İntra/subretinal sıvı, exudasyon yok
- KNV (+)
- Ancak OCTA ile tanı
- Kuru tip YBMD: 2 yıl takipte

Natural History of Subclinical Neovascularization in Nonexudative Age-Related Macular Degeneration Using Swept-Source OCT Angiography.

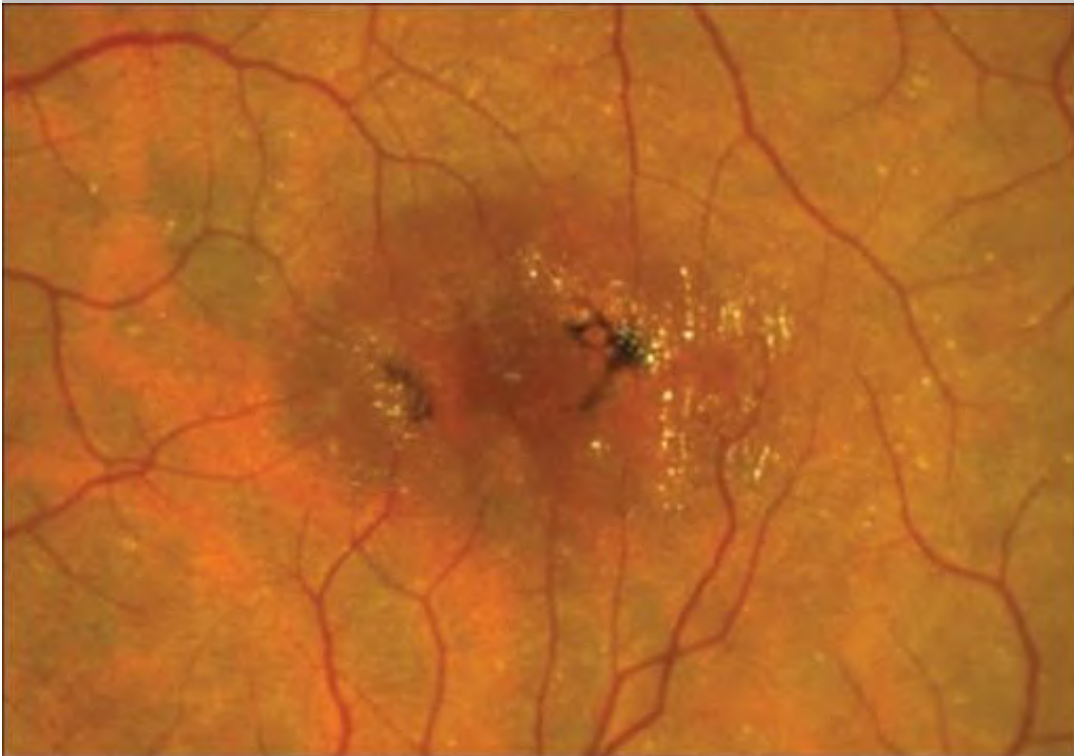
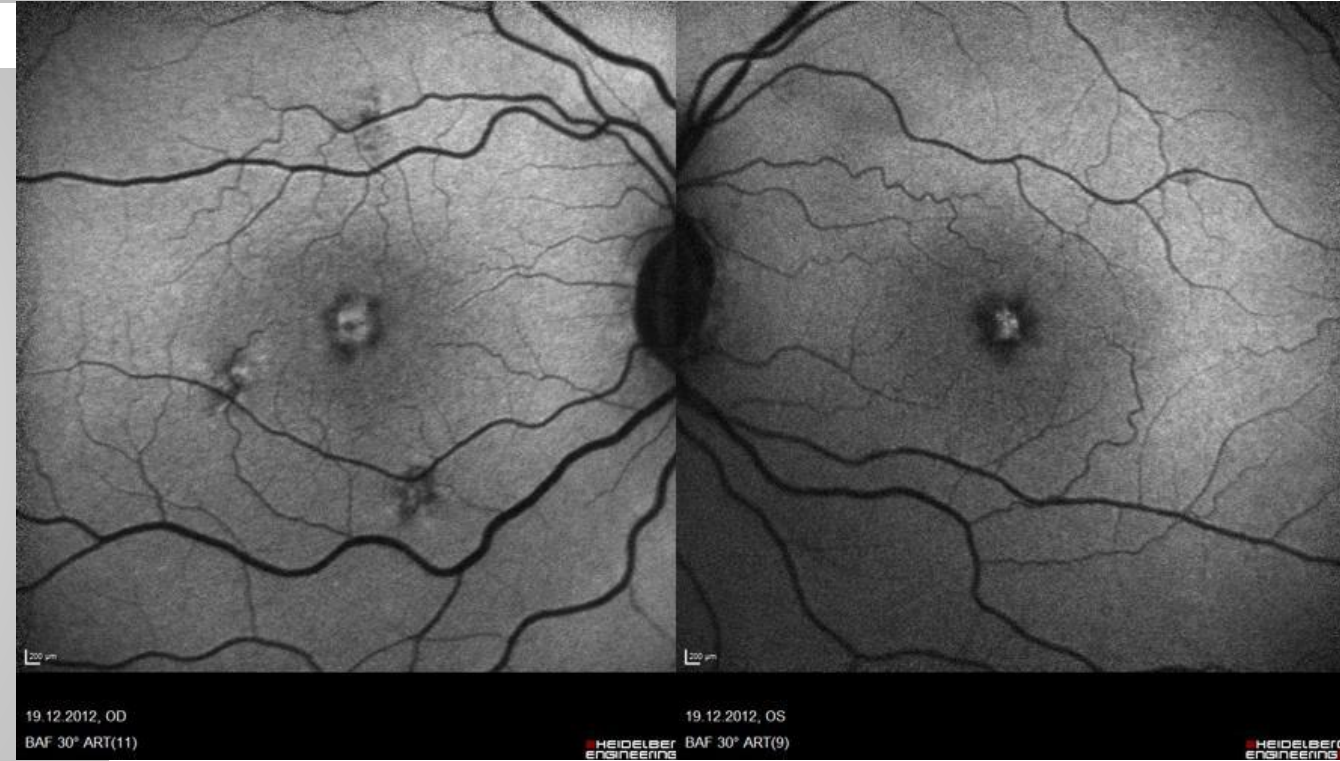
- Bir göz yaş tip diğeri intermediate kuru tip YBMD
- Kuru tipin 6 ayda bir OCTA ile 2 yıl takibinde
- %7-17.6 sında nonexudatif Neovasküler YBMD (sessiz KNV) tespit edilmiş.
- Bunların %80 inde ort 4 ayda exudasyon bulguları ve görme azalması gelişmiş
- Rosenfeld P et al, Ophthalmology 2018.





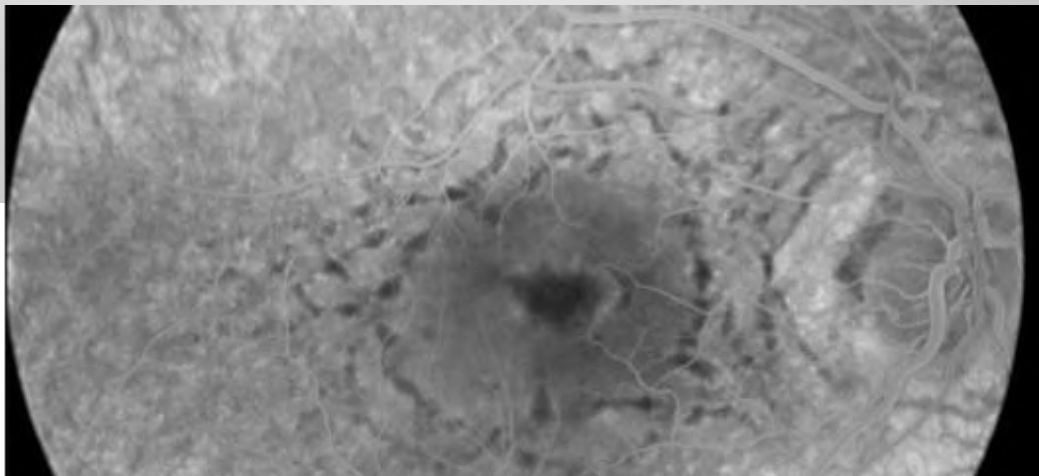
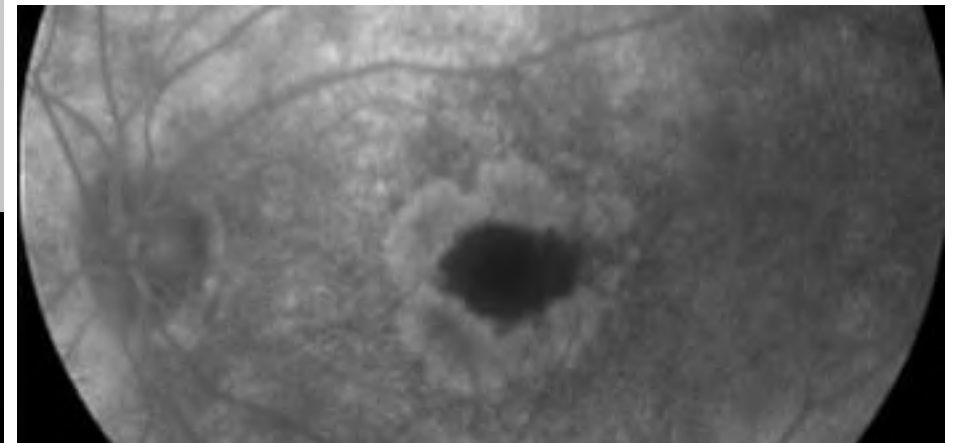
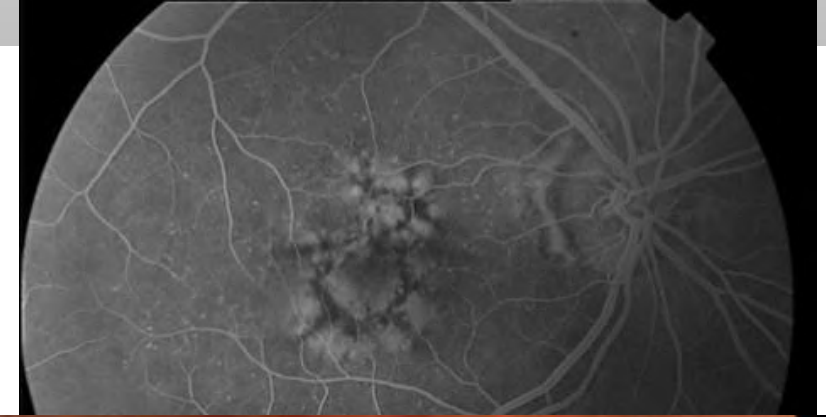
YBMD Ayırıcı Tanı (Maskaradlar)

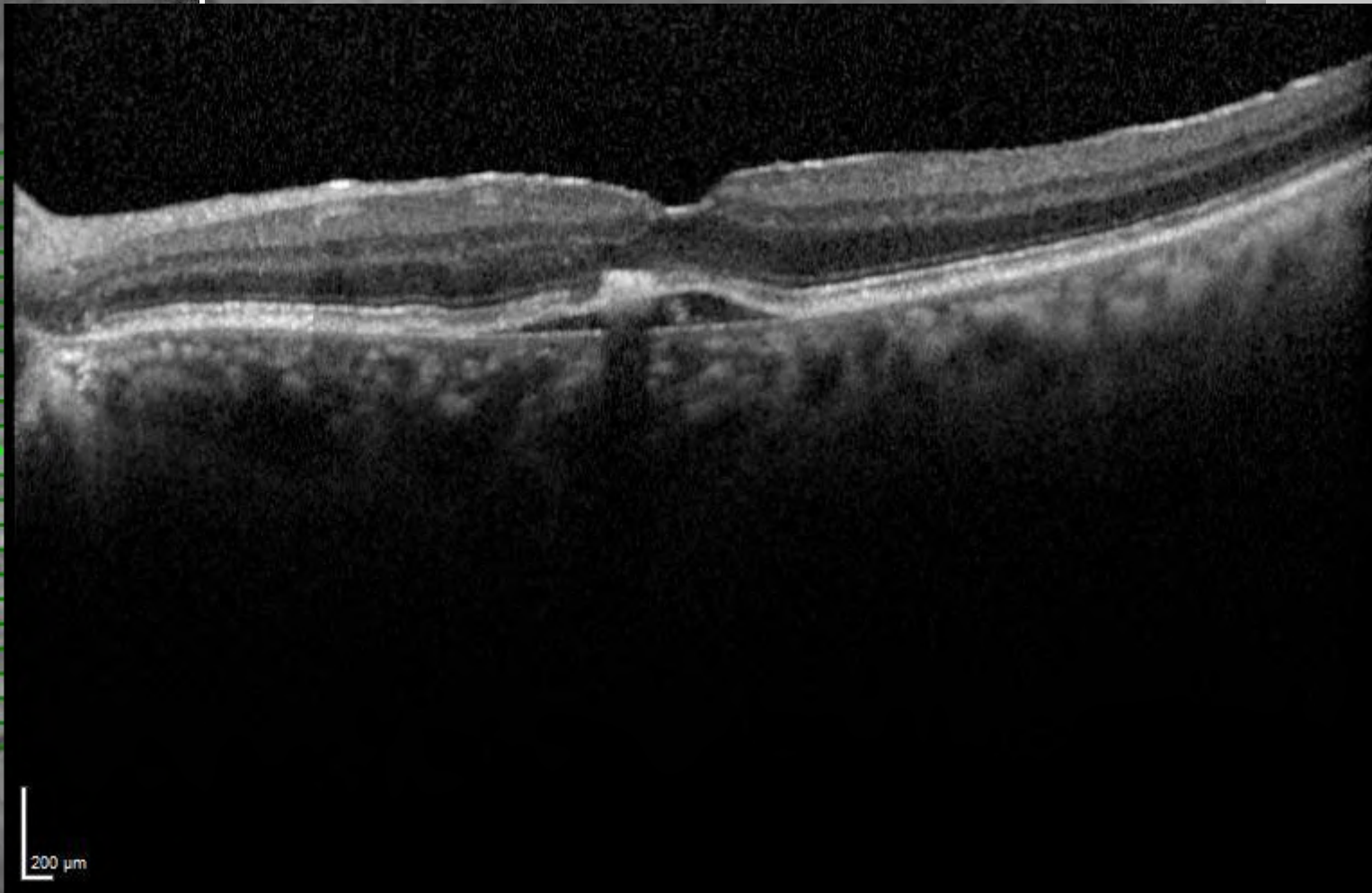
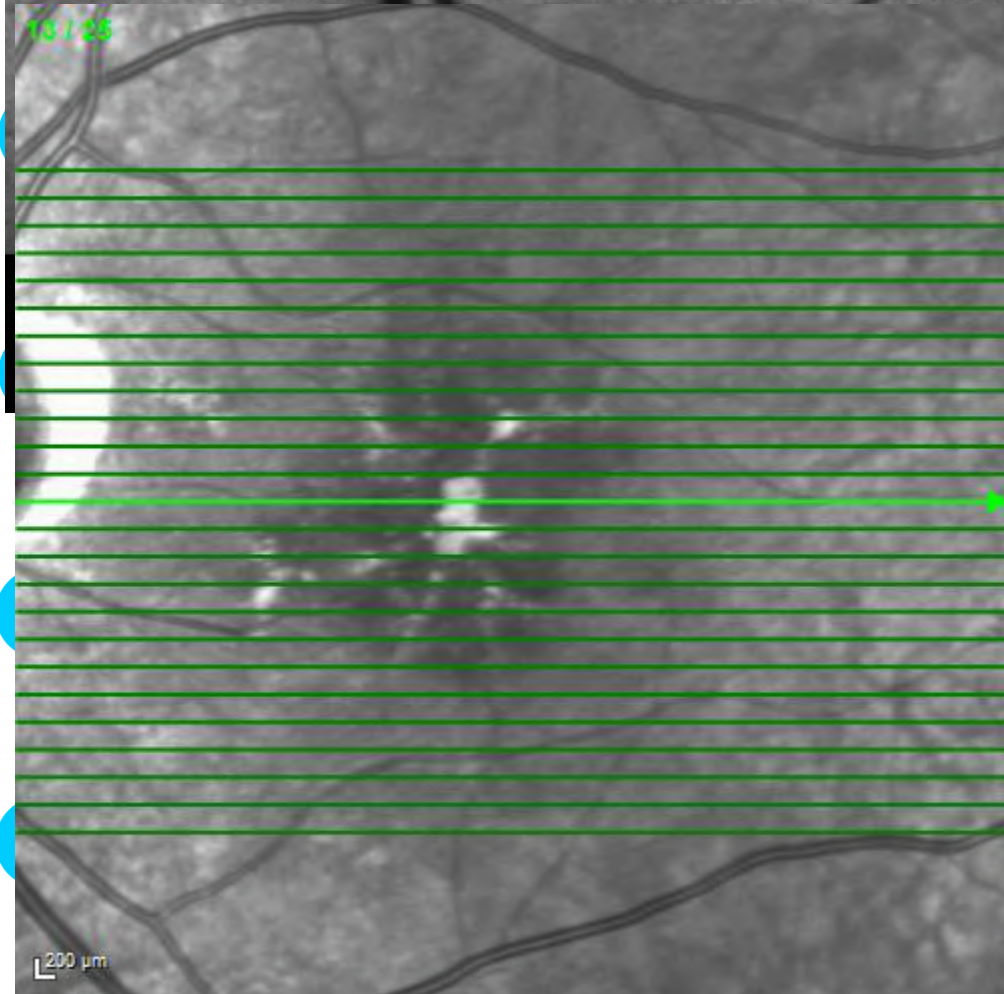
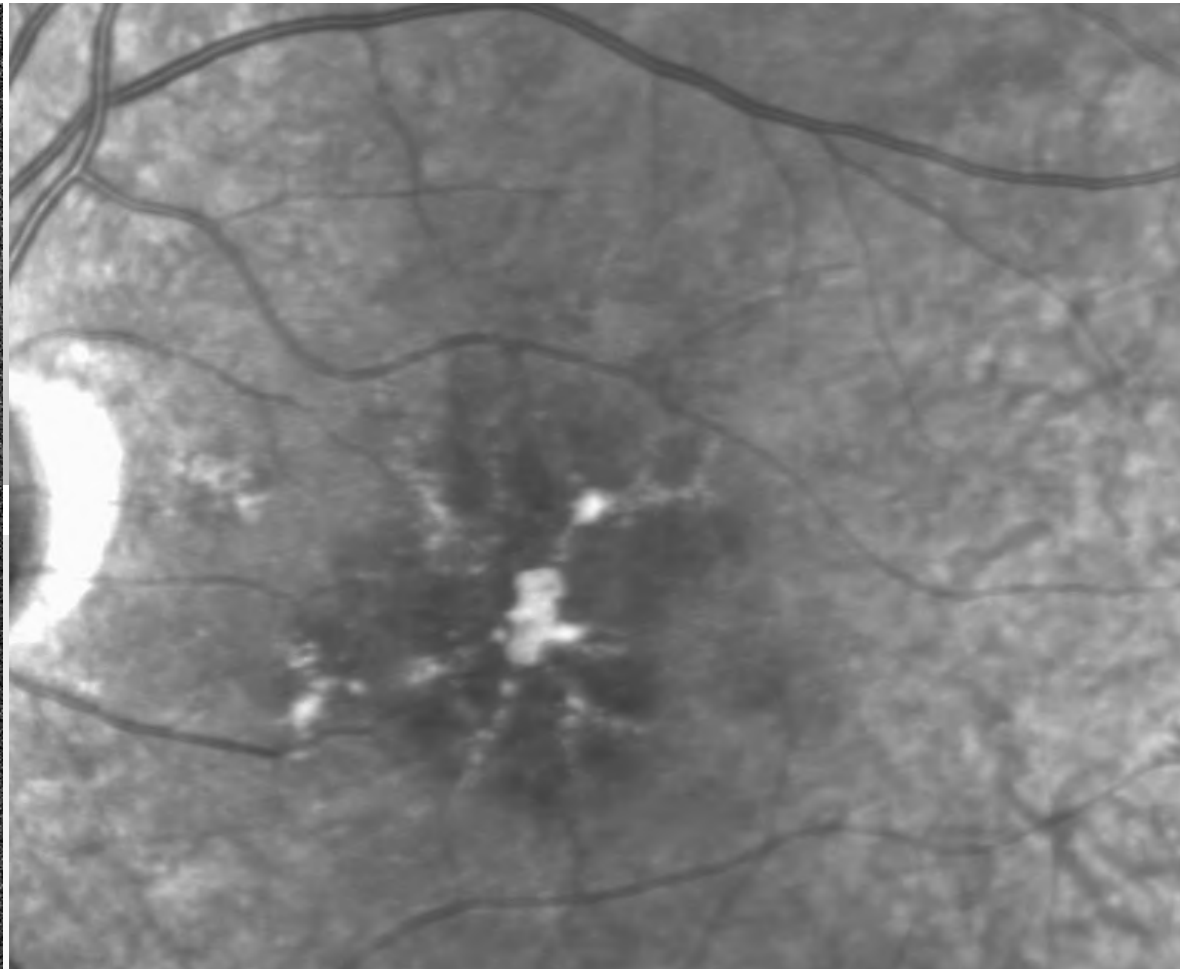
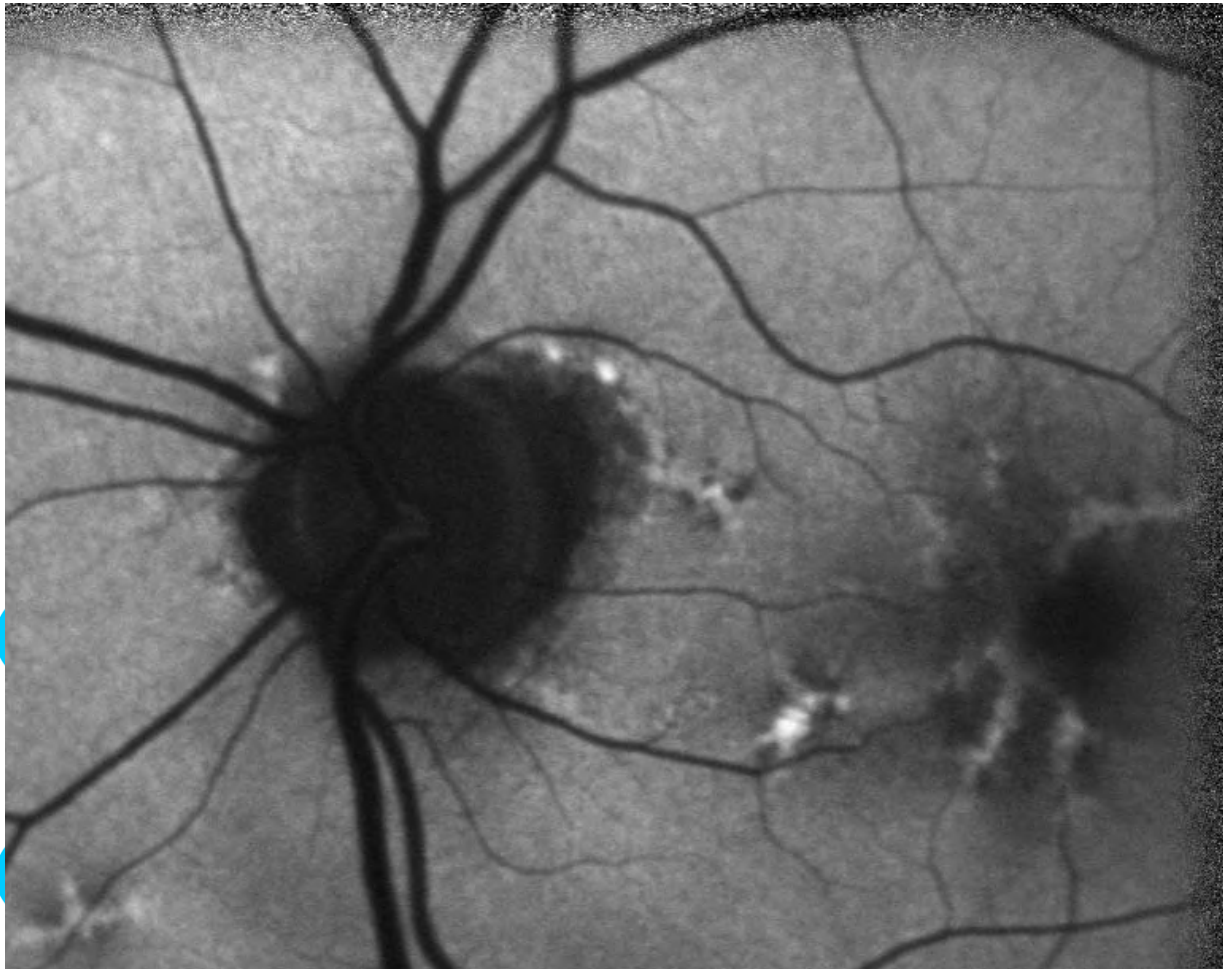
- VİTELLİFORM LEZYONLAR
- SSKR (pakikoroid hast)
- Mac Tel



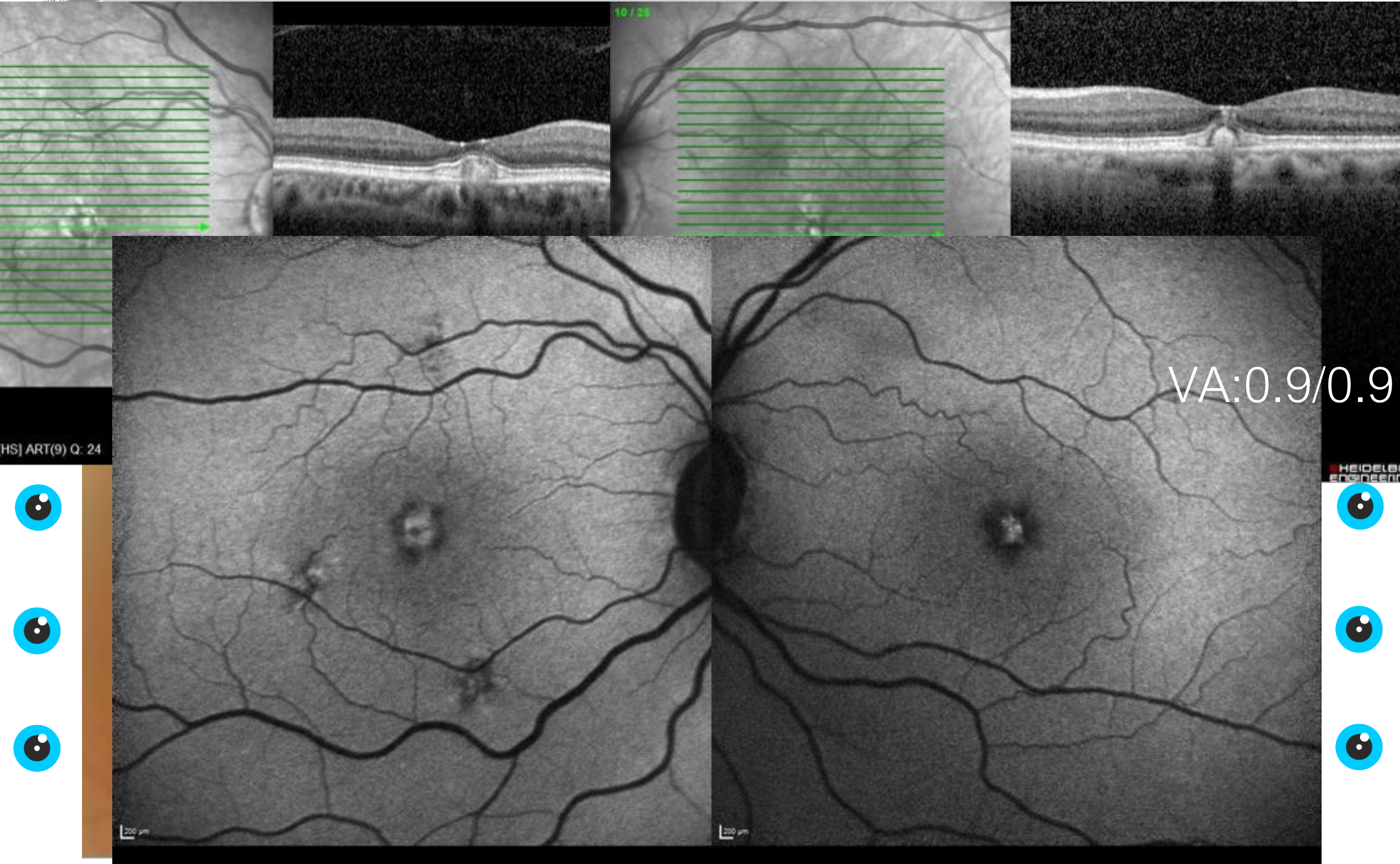
VİTELLİFORM LEZYONLAR

- BEST
- PATERN DİSTROFİ
 - AOVMD
 - KELEBEK ŞEKLİ
 - FUNDUS PULVERULENTUS

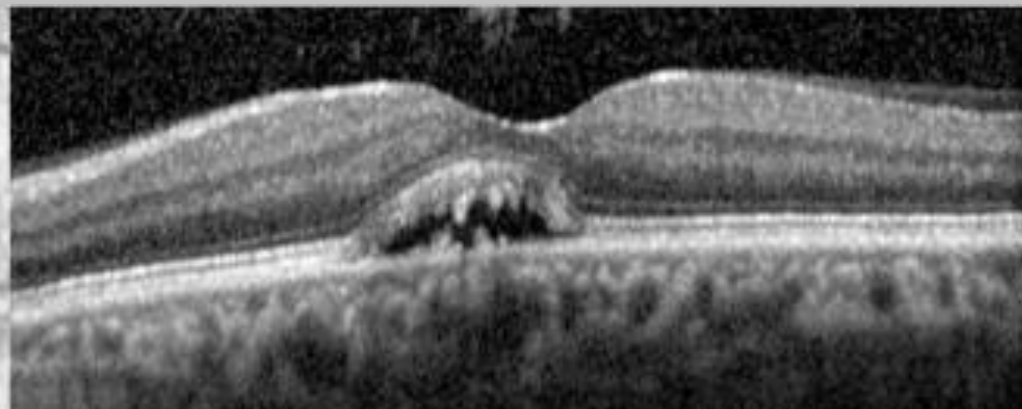
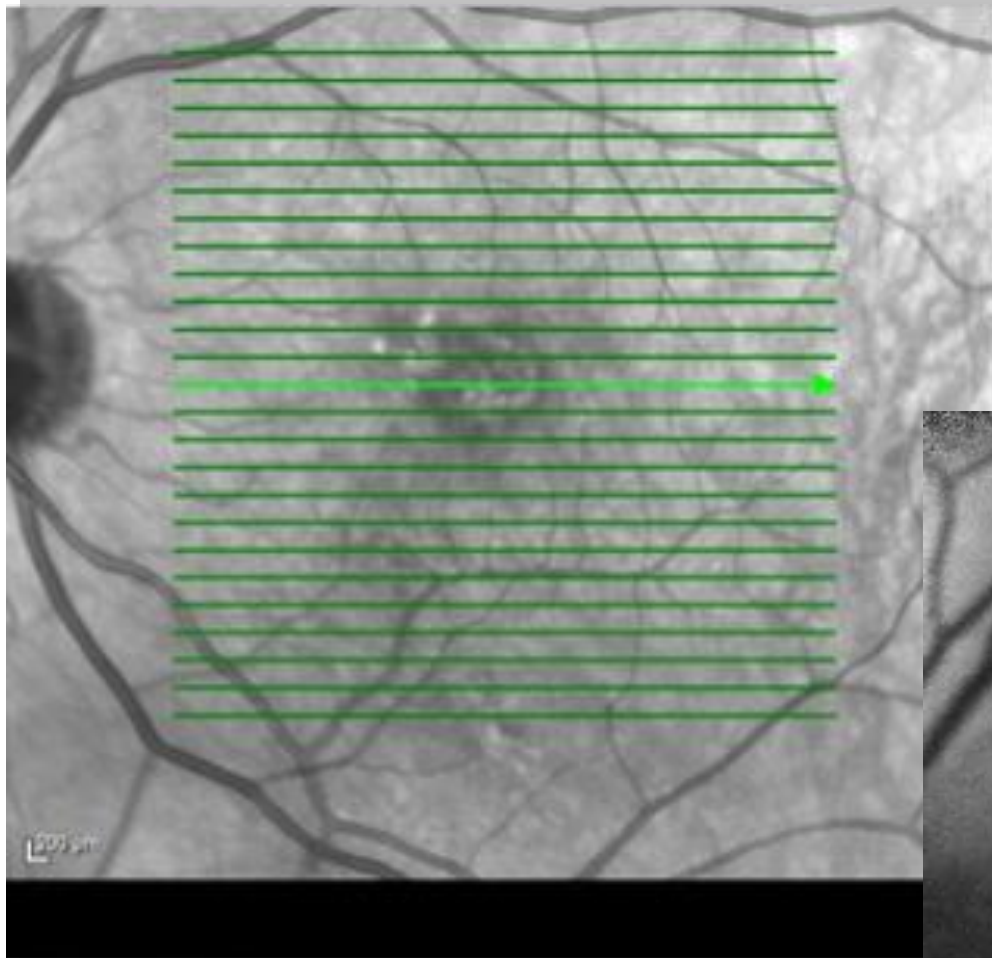




VİTELLİFORM LEZYONLAR-AOVMD

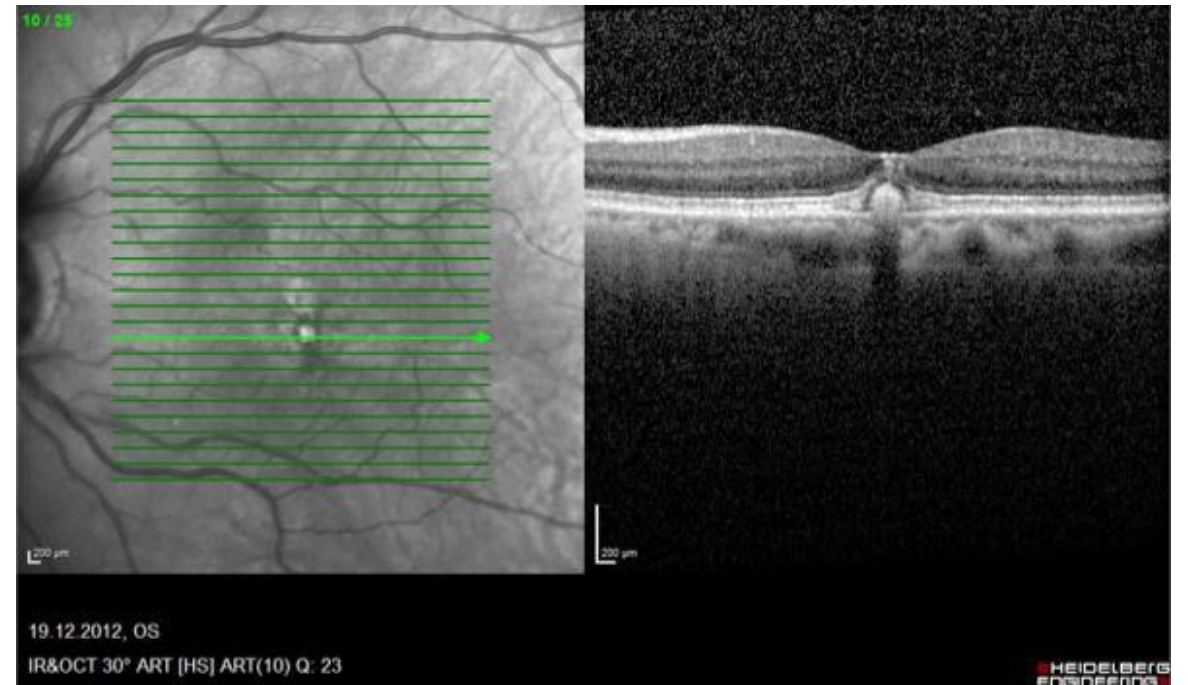
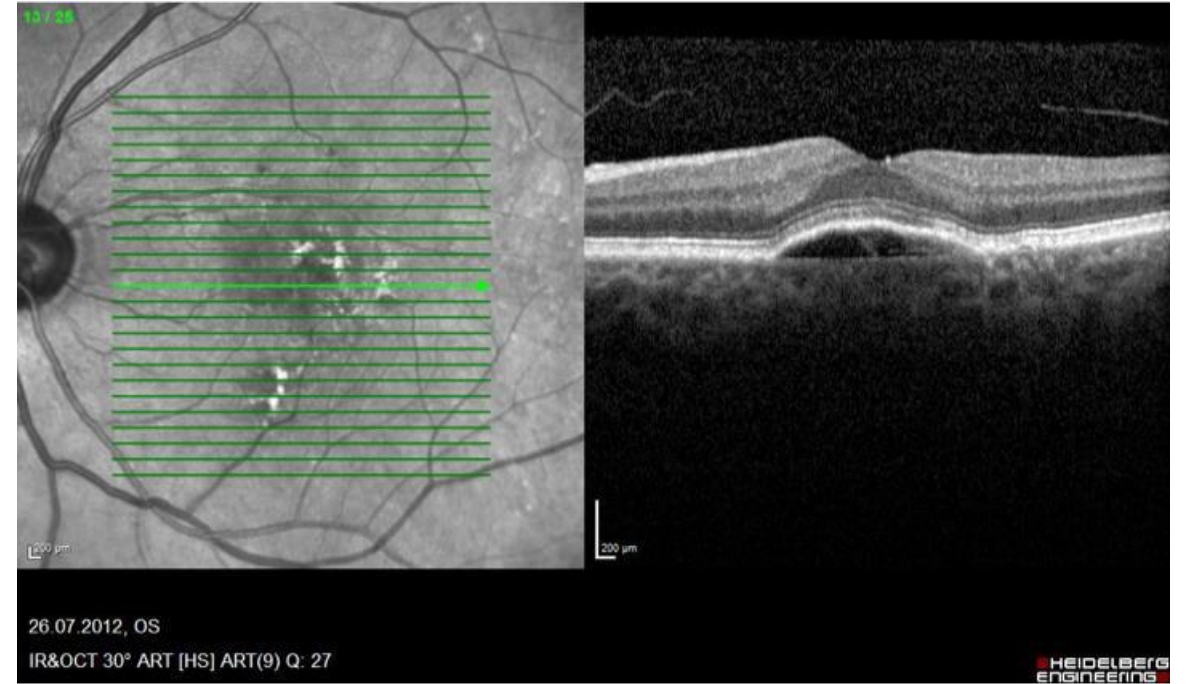


AOVMD

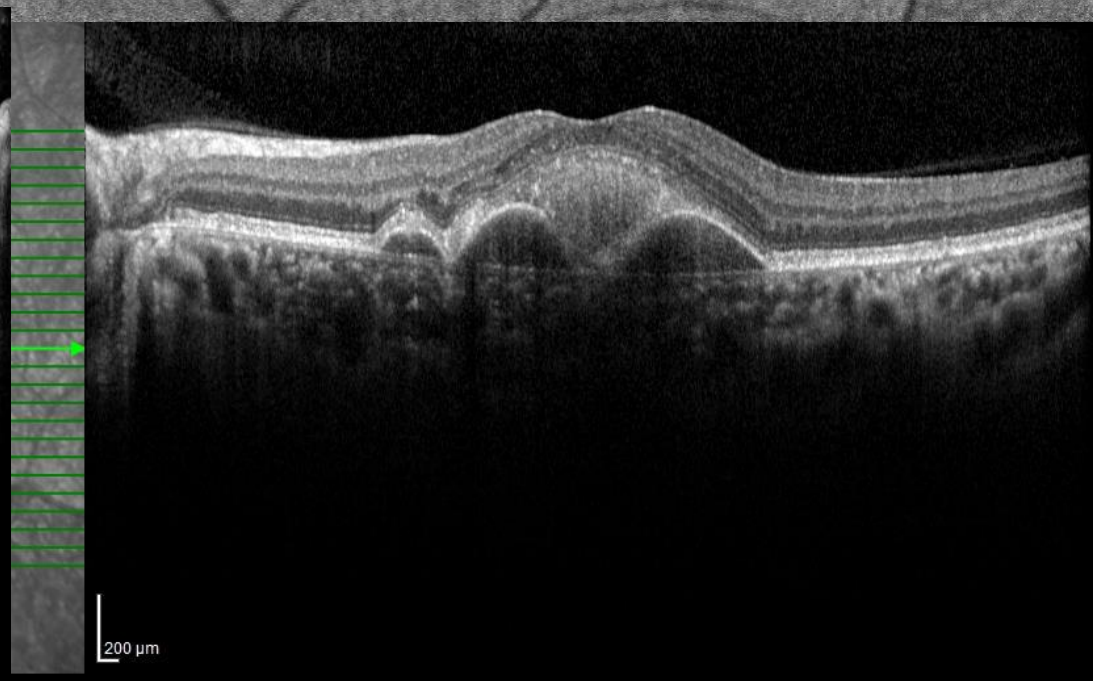
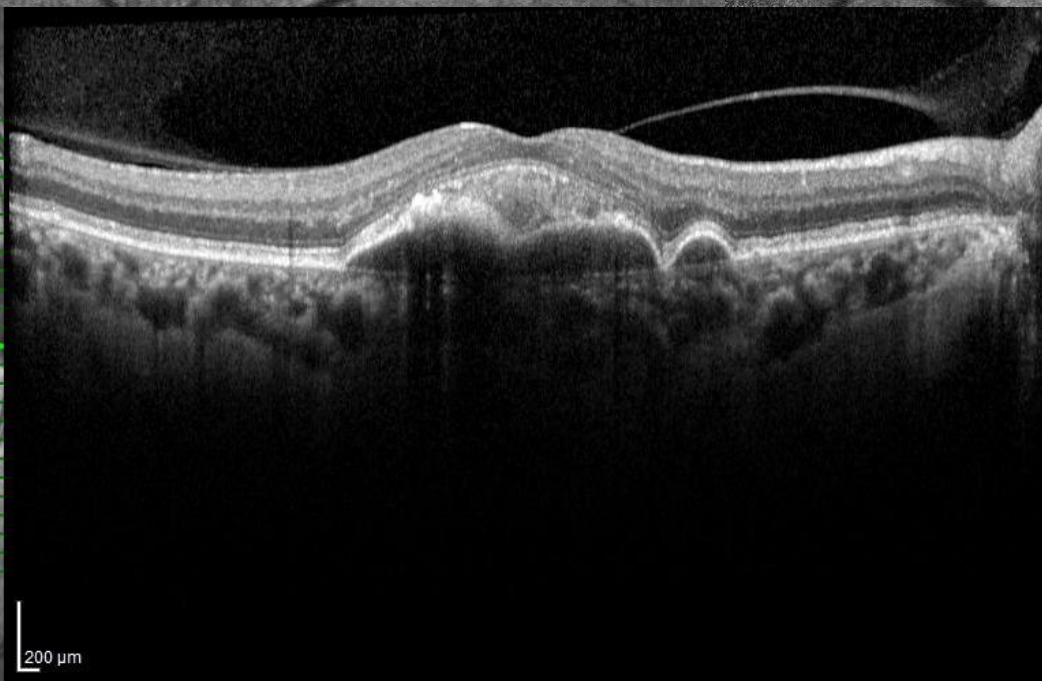
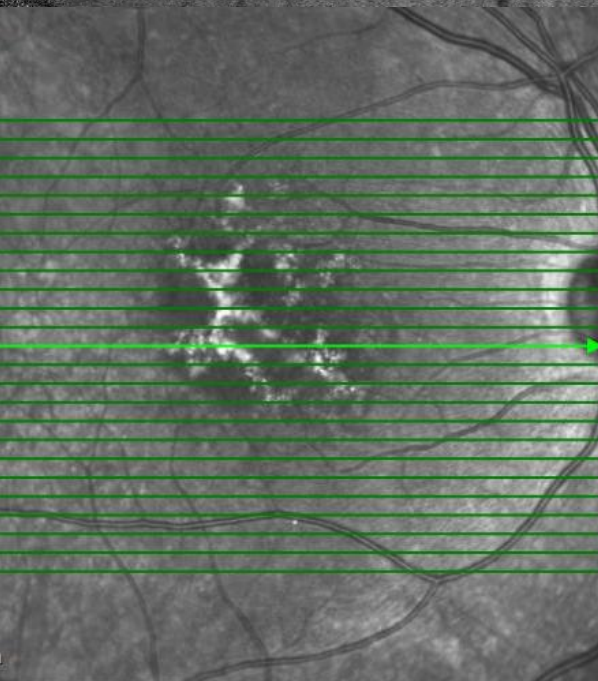
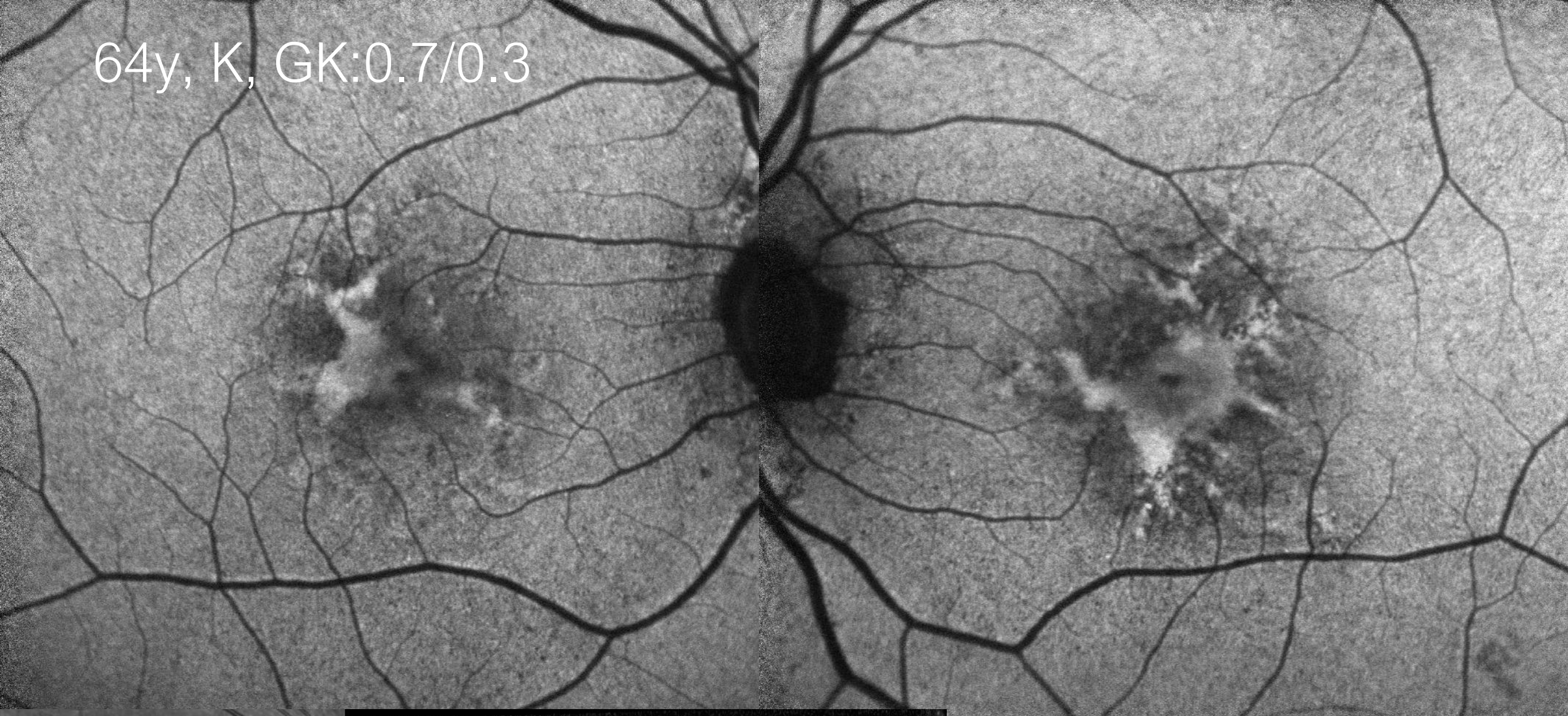


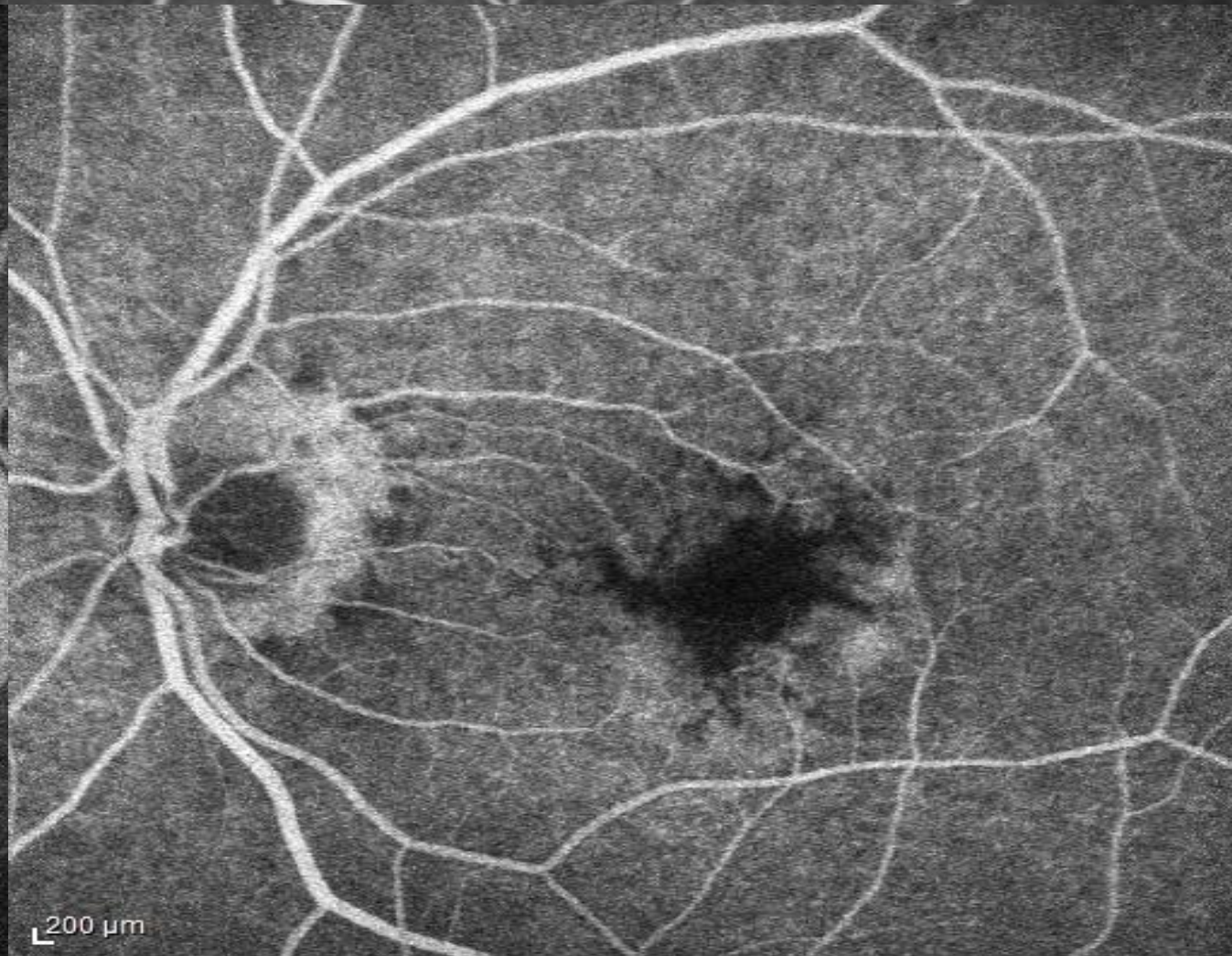
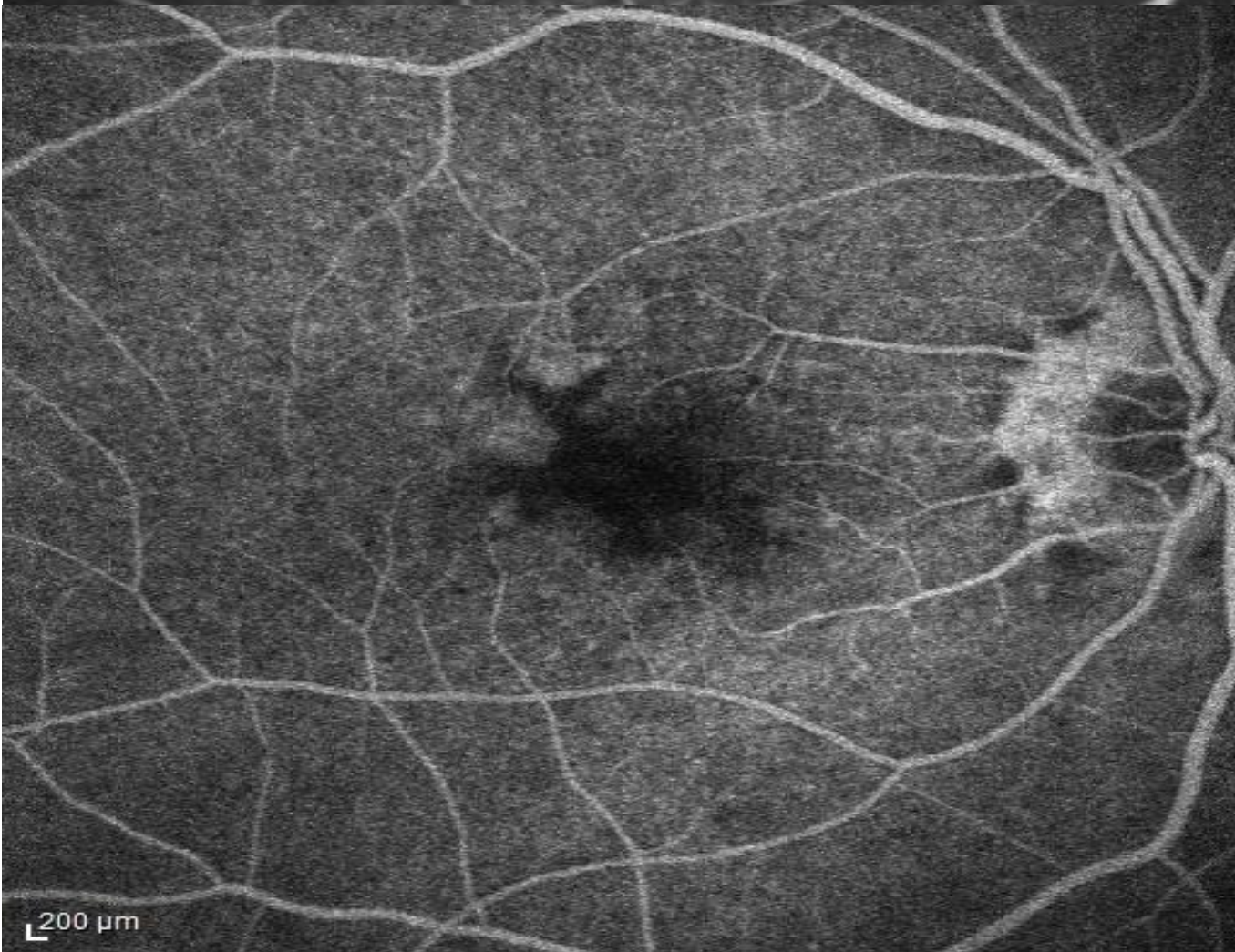
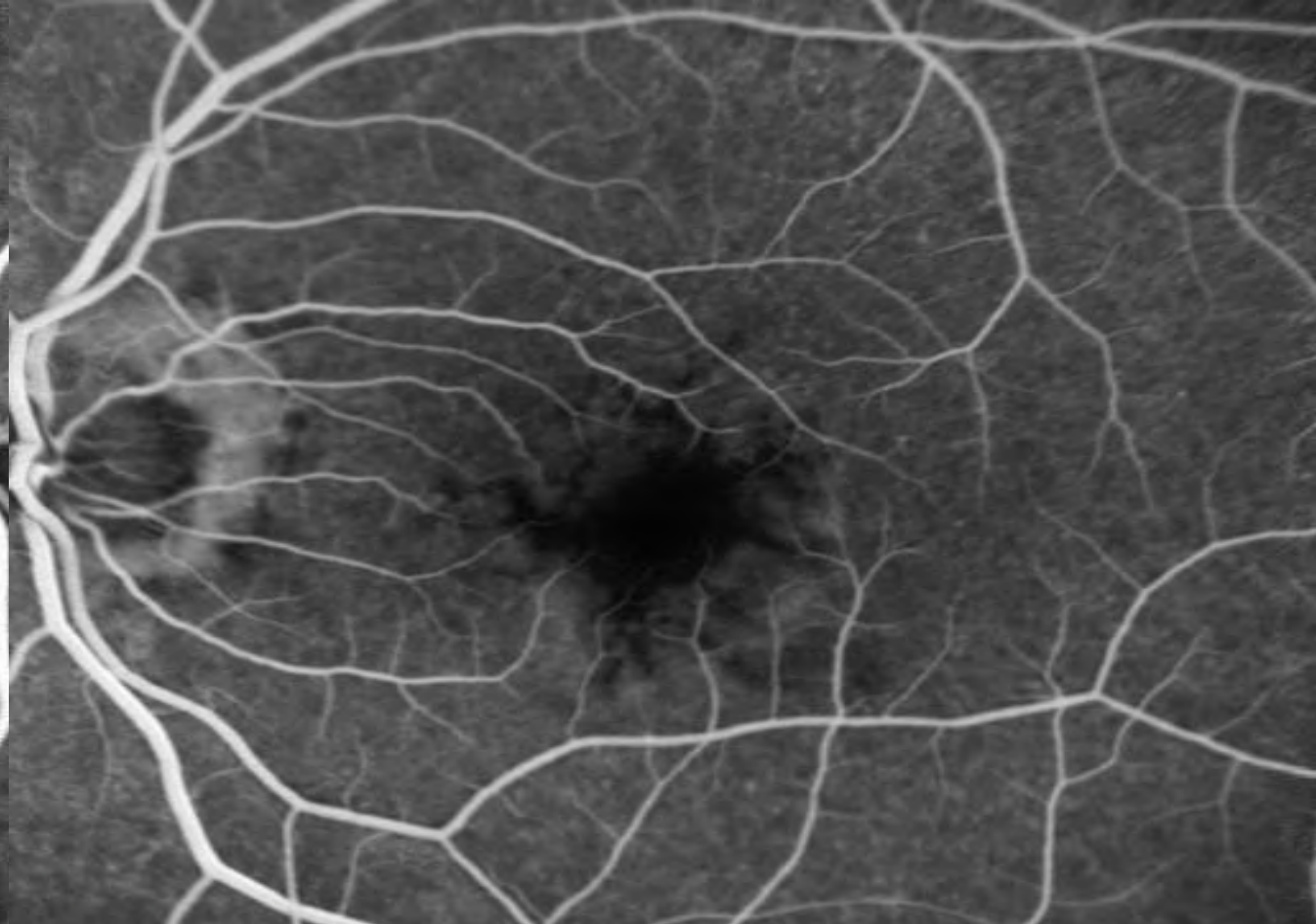
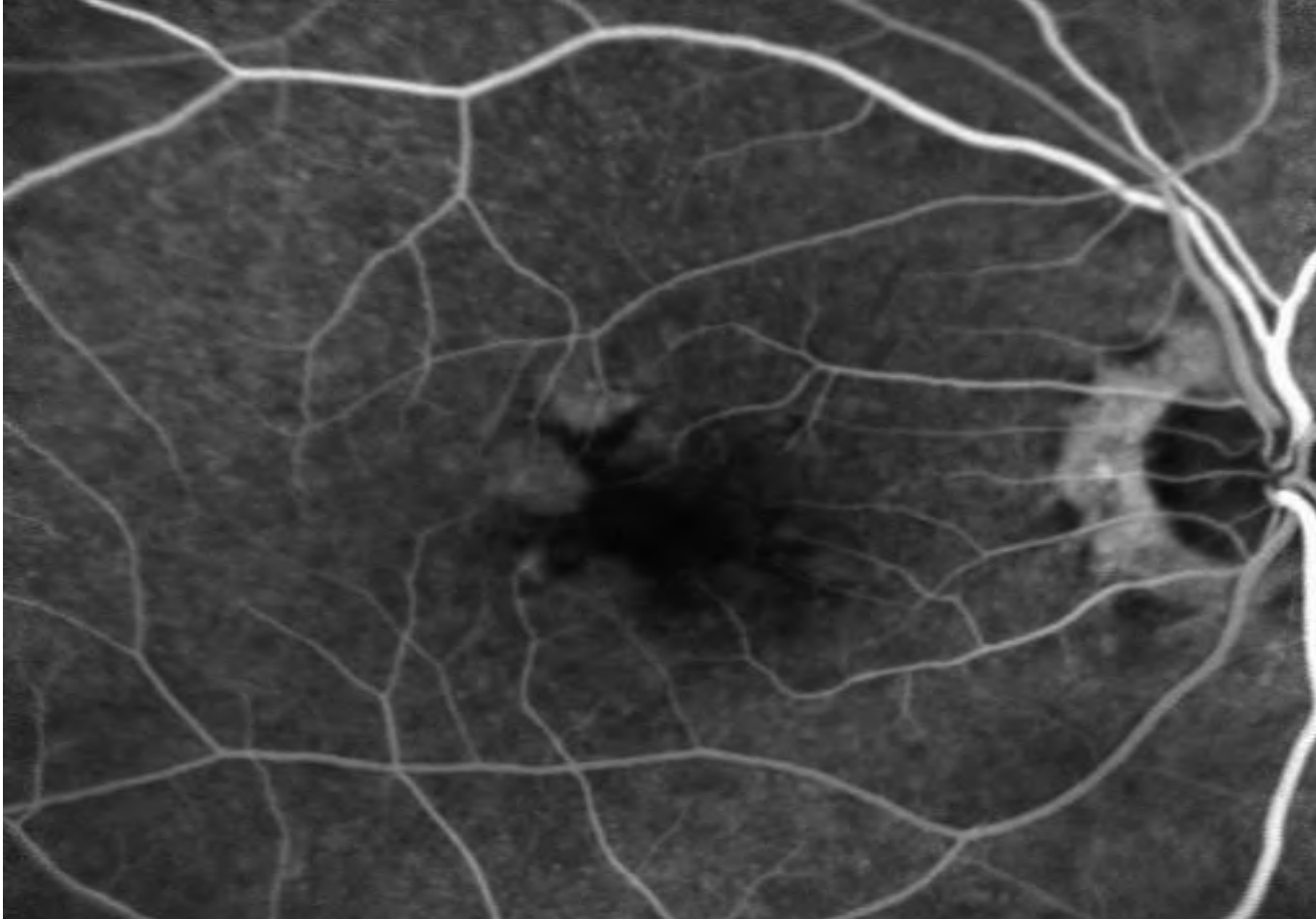
VİTELLİFORM LEZYONLAR-AOVMD

- Görme Düzeyi iyi
- Şikayetleri yok (min metamorfopsi)
- Tesadüfen farkedilir
- İntraretinal/subretinal sıvı yok
- Enjeksiyon yapılmış/önerilmiş olabilir
- Daha seyrek KNV gelişebilir



64y, K, GK:0.7/0.3



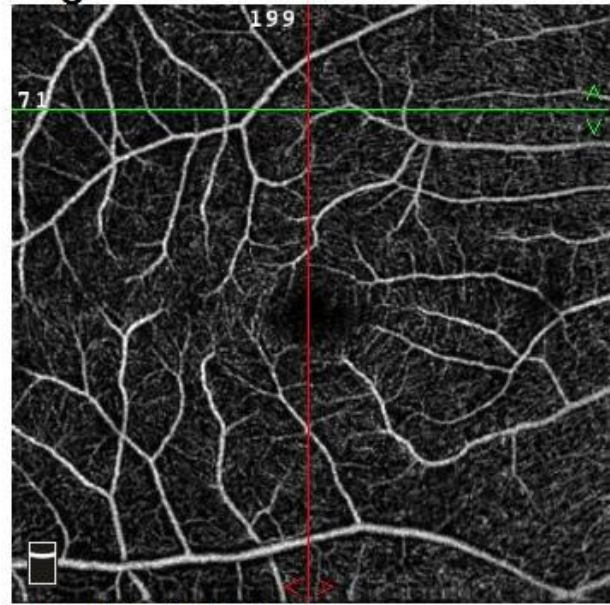


Angio Retina QuickVue

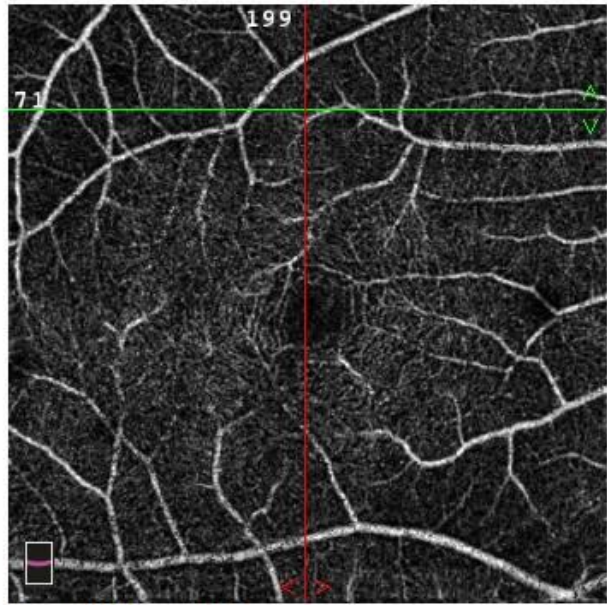
Scan Quality 6/10

6.0 x 6.0 Scan Size (mm)

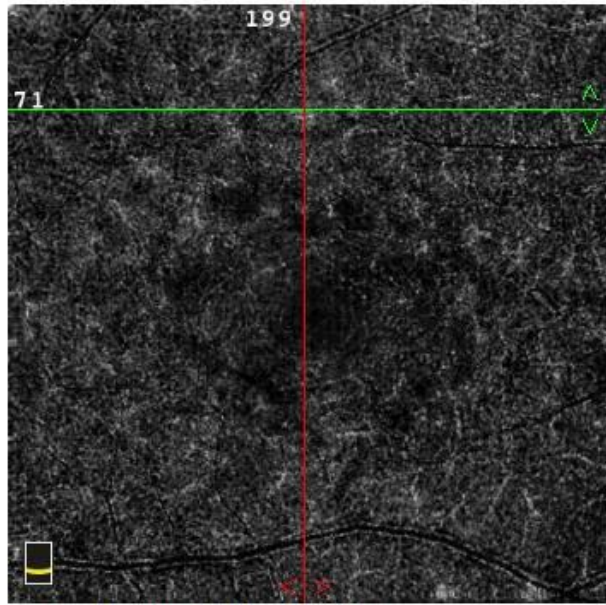
Right / OD



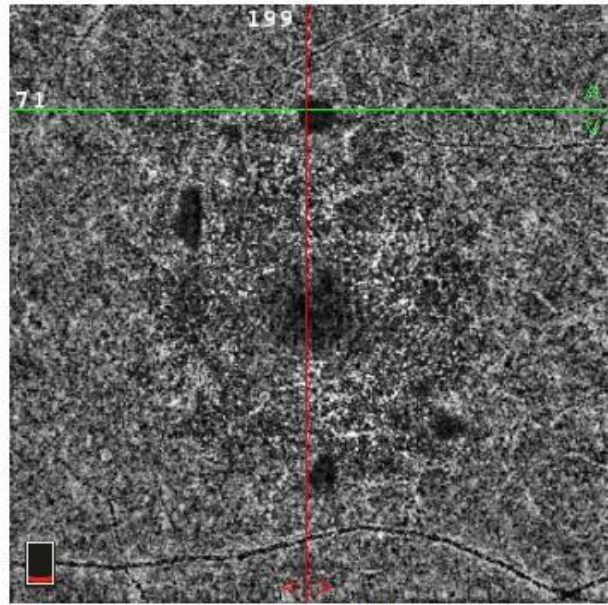
Superficial (ILM - IPL)



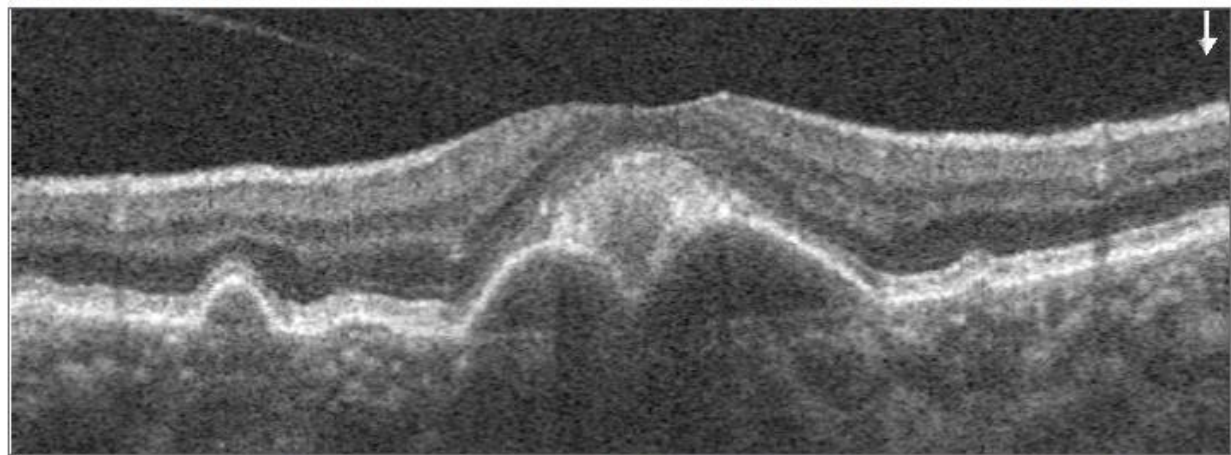
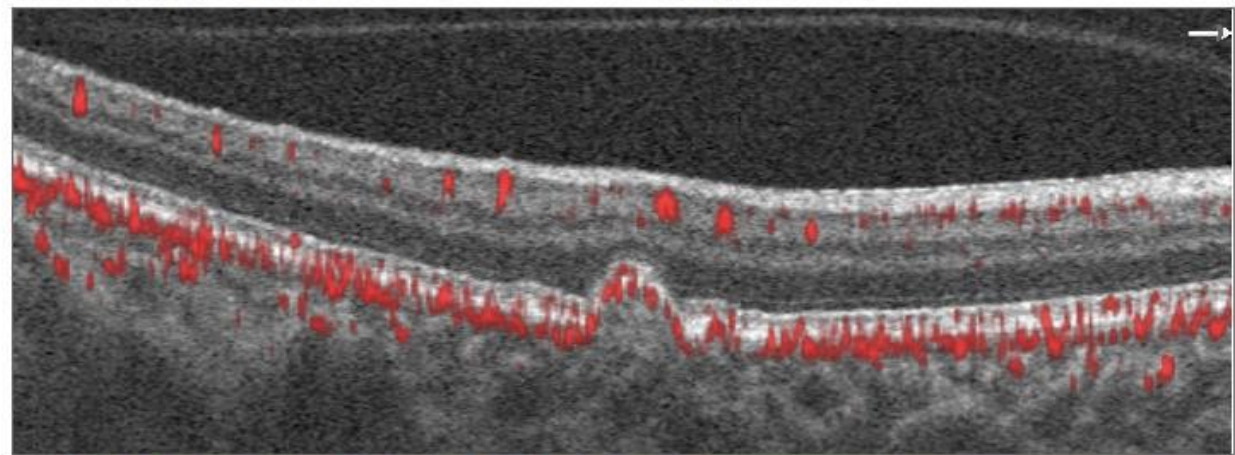
Deep (IPL - OPL)



Outer Retina (OPL - BRM)



Choriocapillaris (BRM - BRM+30µm)



Exit

Print

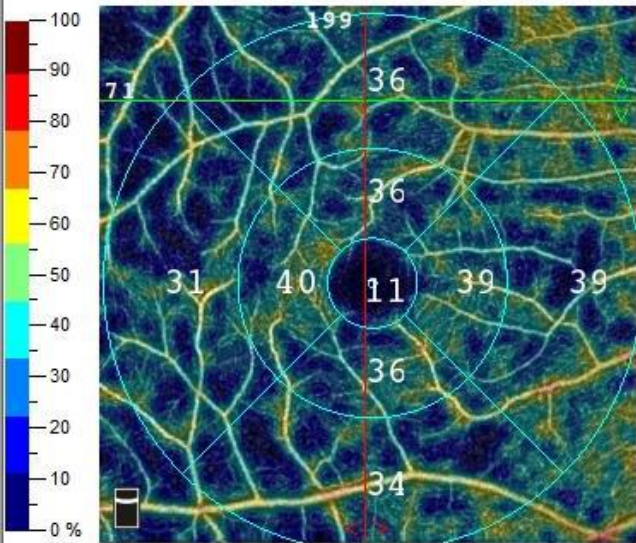
OverVue

☒ Show Lines

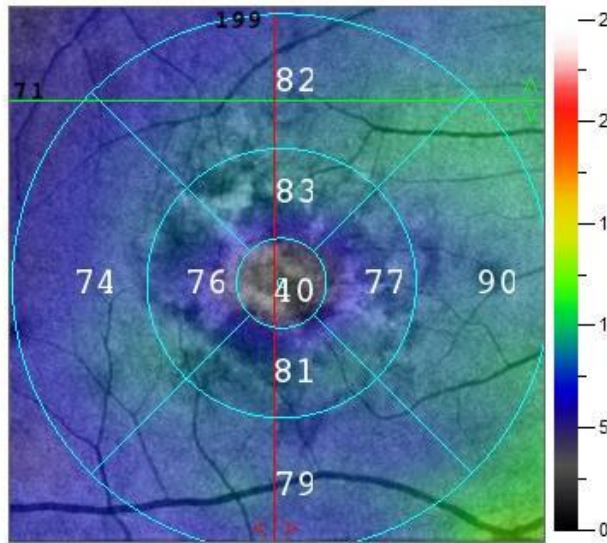
☐ Show Bnd

☒ Angio Overlay

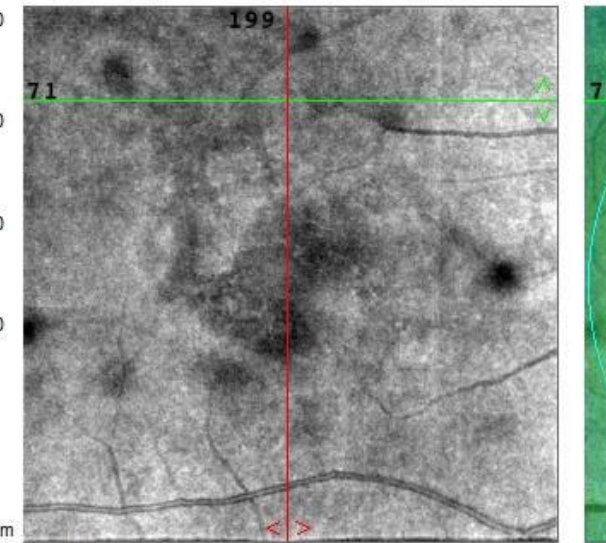
☒ Auto Zoom



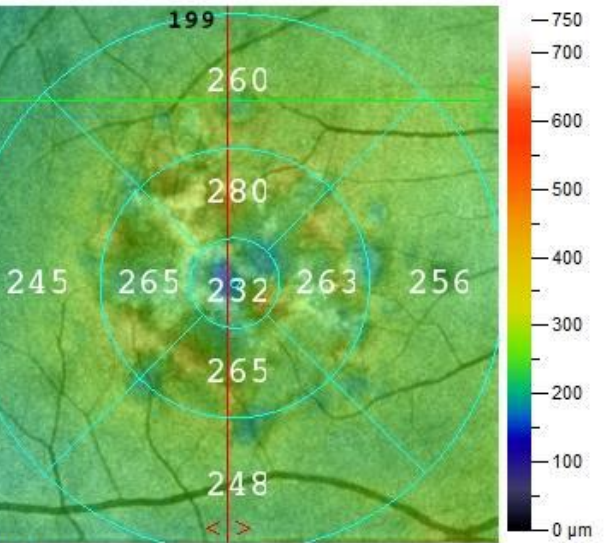
Vessel Density (Superficial)



Inner Thickness (ILM - IPL)



SLO



Full Thickness (ILM - RPE)

Thickness

☒ Full

☐ ILM Elevation

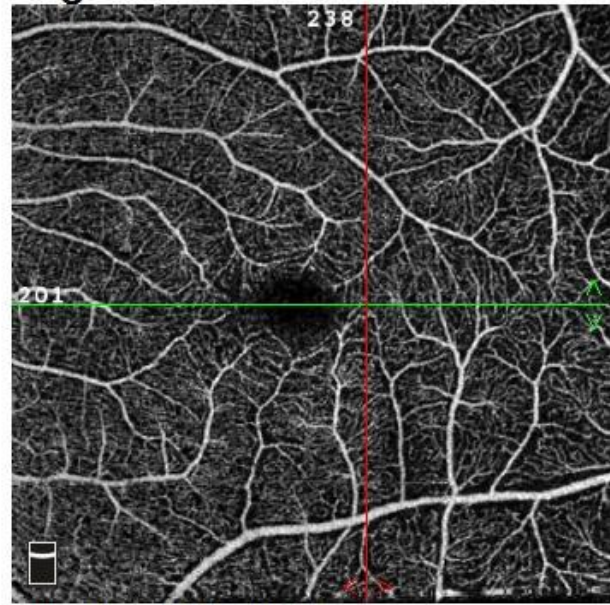
☒ ETDRS

Angio Retina QuickVue

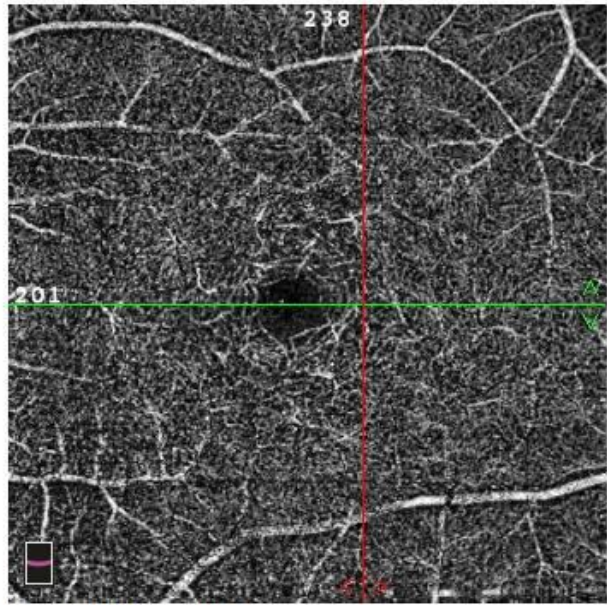
Scan Quality 9/10

6.0 x 6.0 Scan Size (mm)

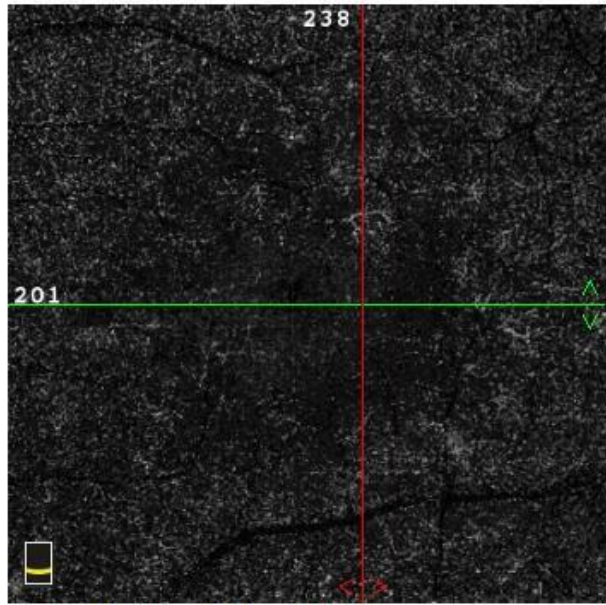
Left / OS



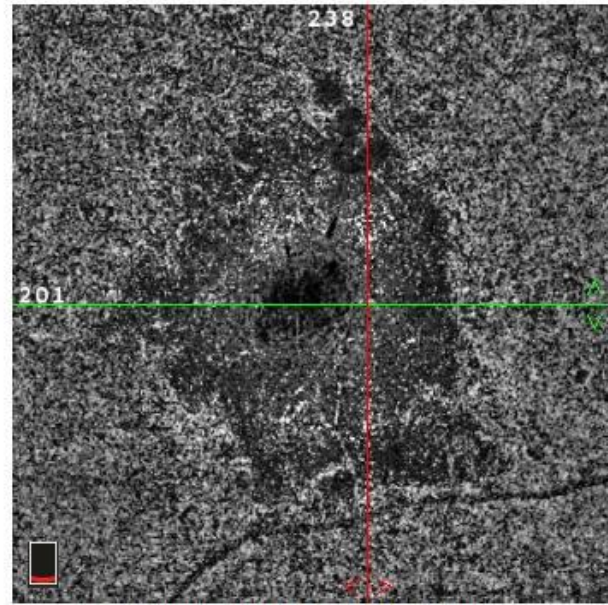
Superficial (ILM - IPL)



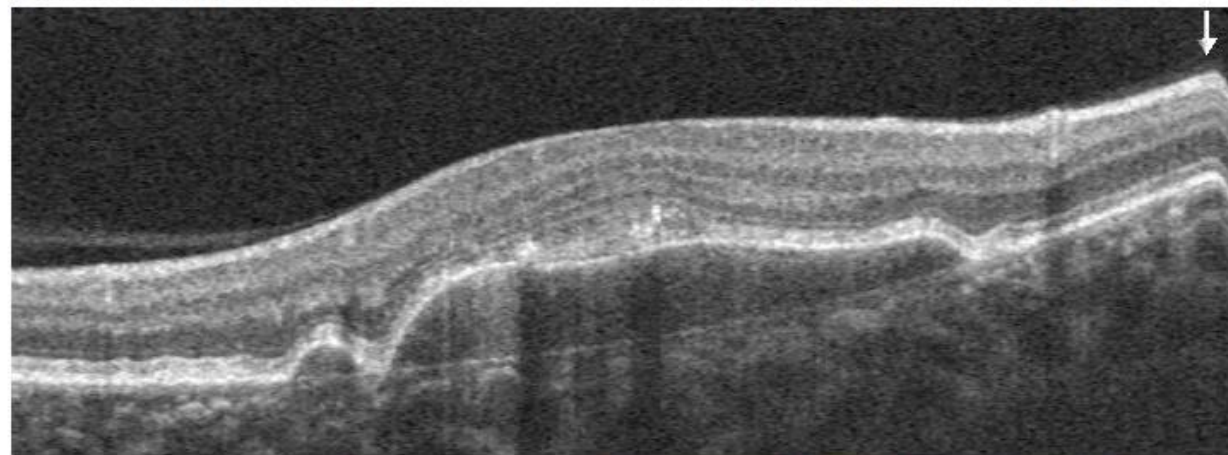
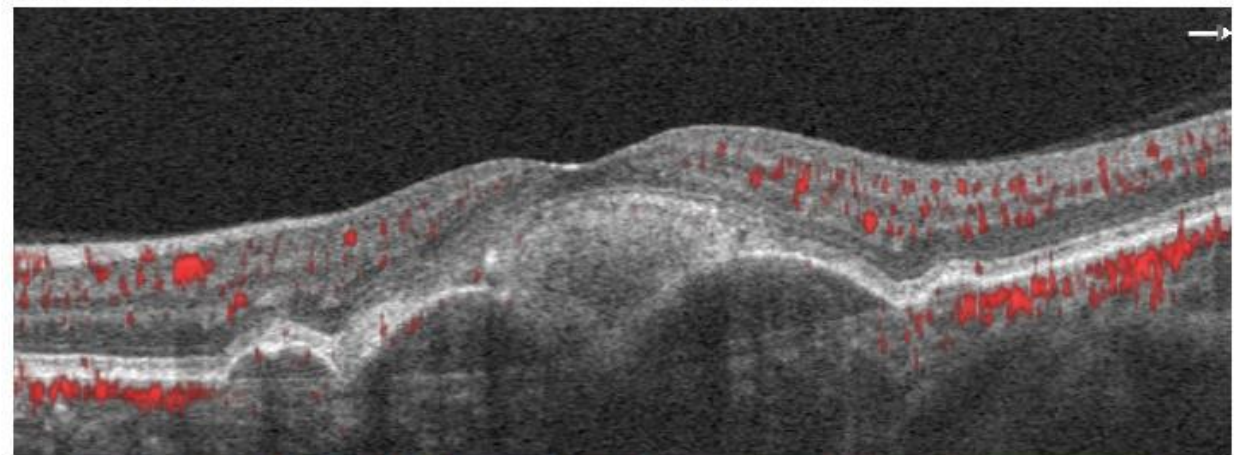
Deep (IPL - OPL)



Outer Retina (OPL - BRM)



Choriocapillaris (BRM - BRM+30µm)



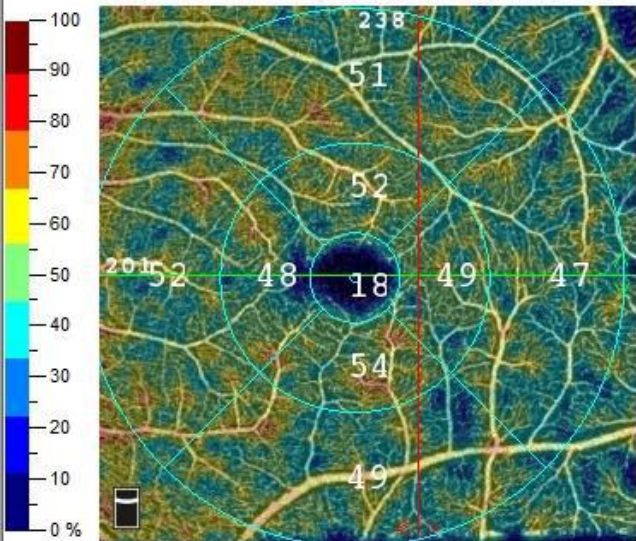
- Exit
- Print
- OverVue

☒ Show Lines

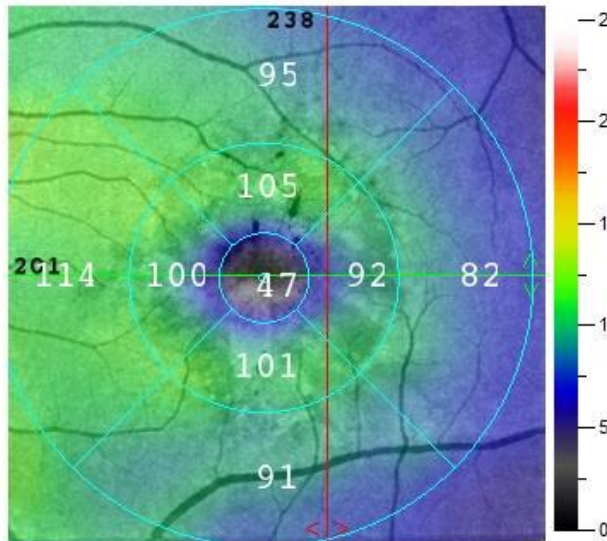
☐ Show Bnd

☒ Angio Overlay

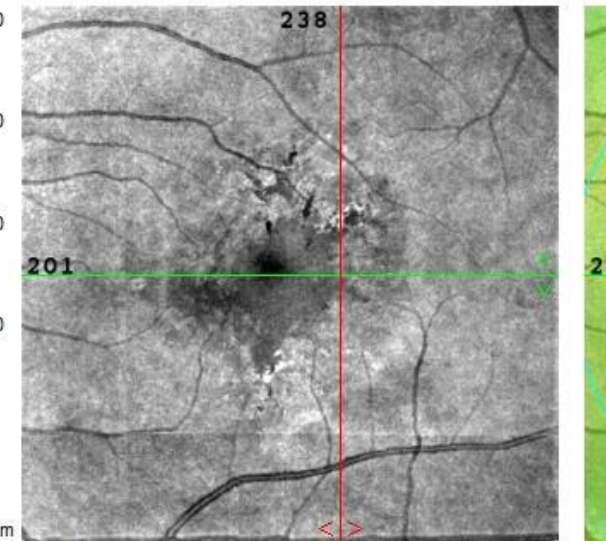
☒ Auto Zoom



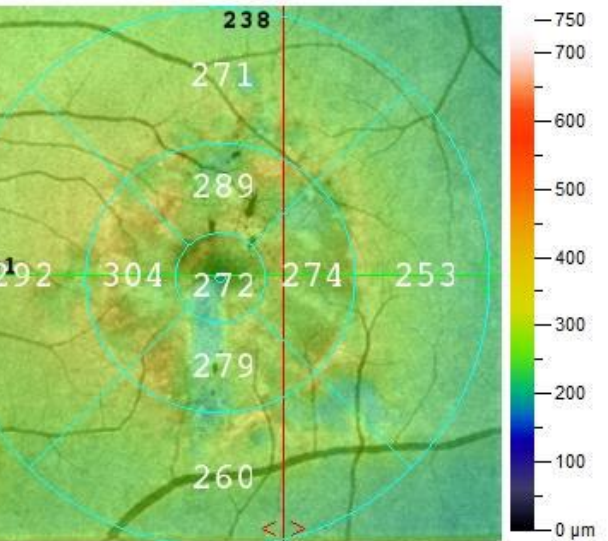
Vessel Density (Superficial)



Inner Thickness (ILM - IPL)

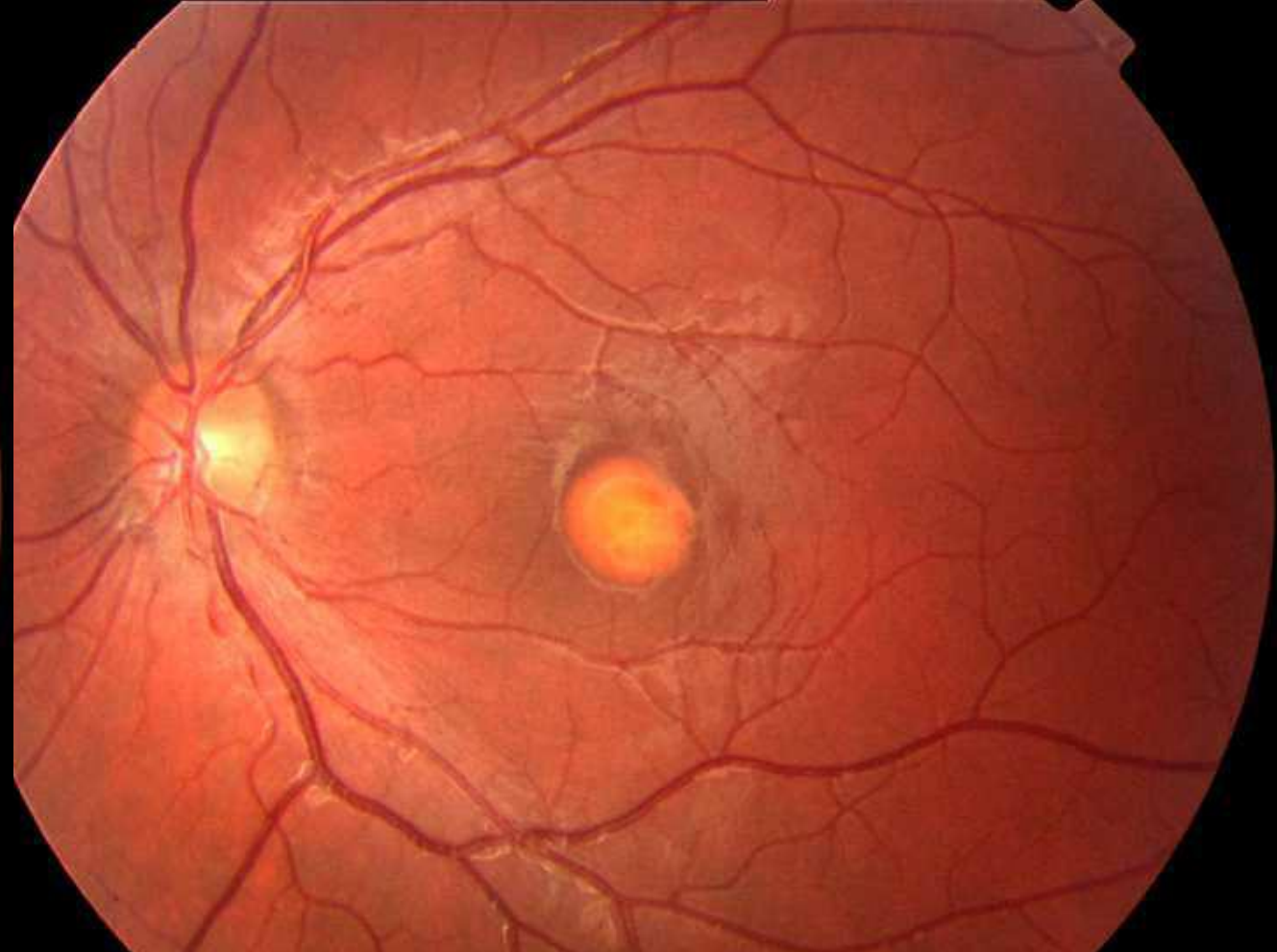
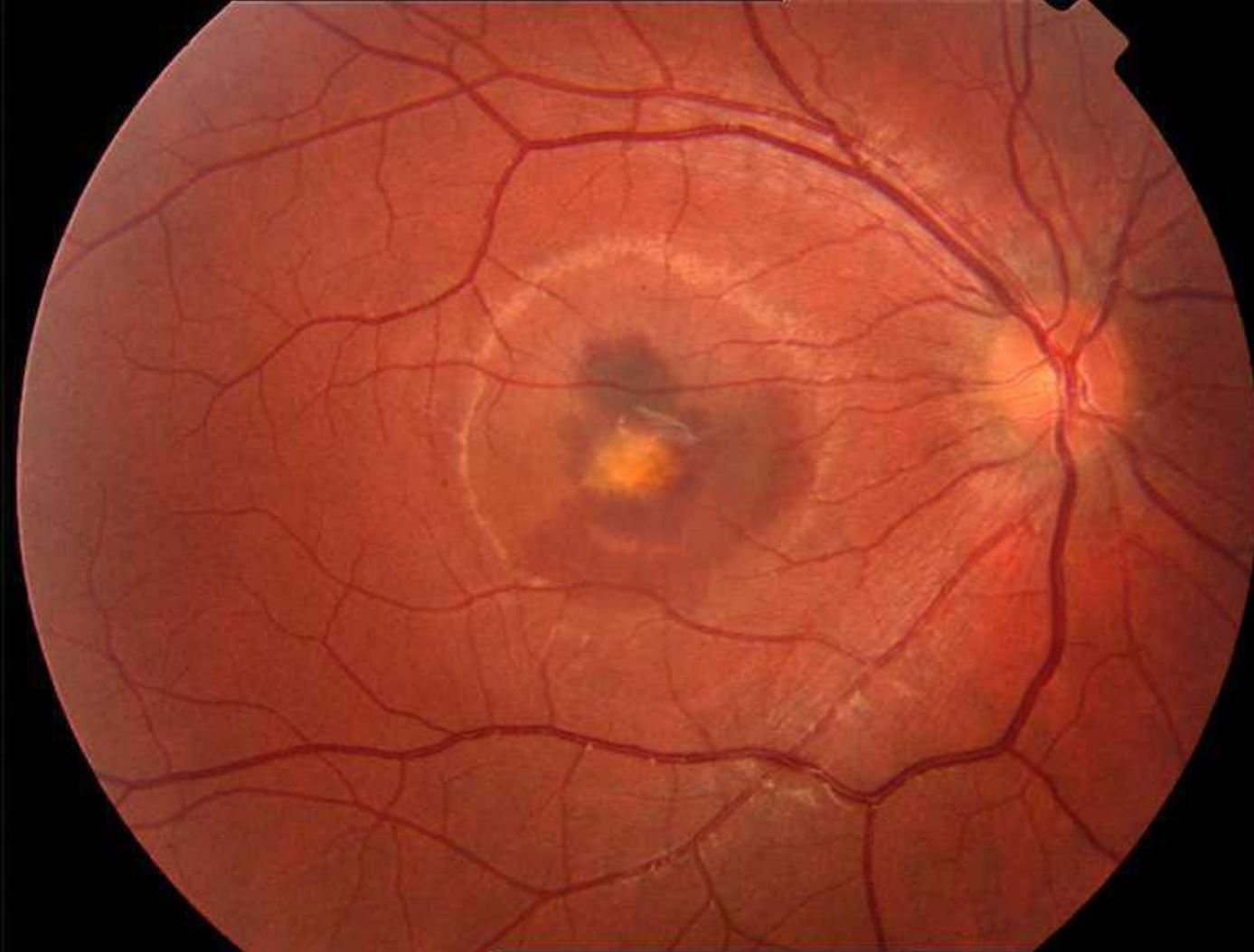


SLO



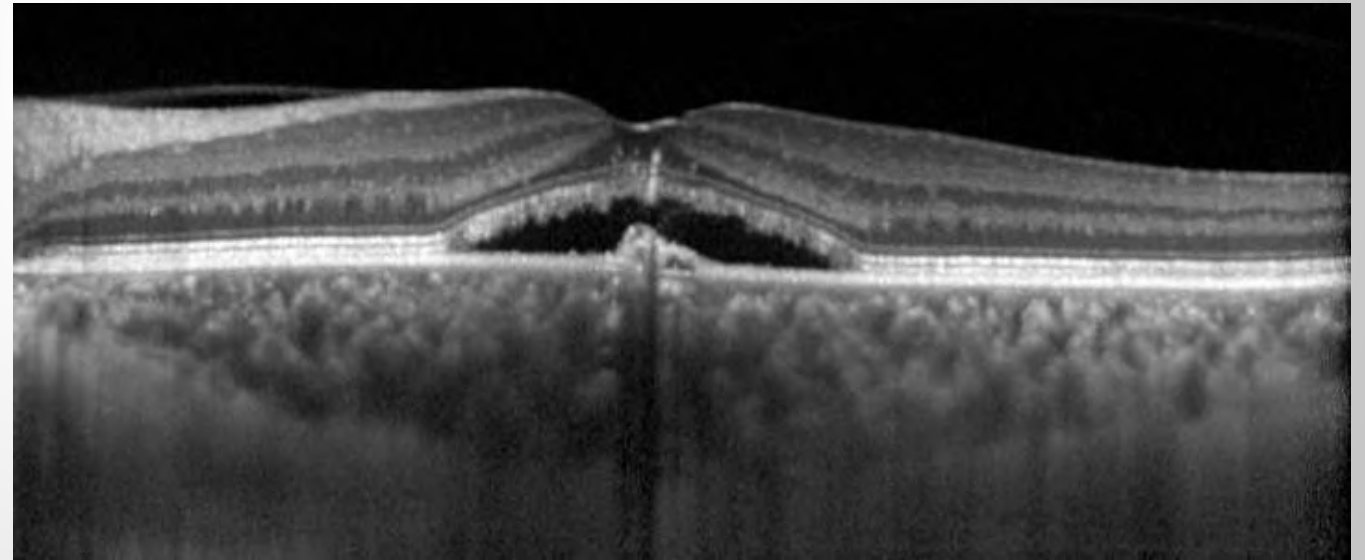
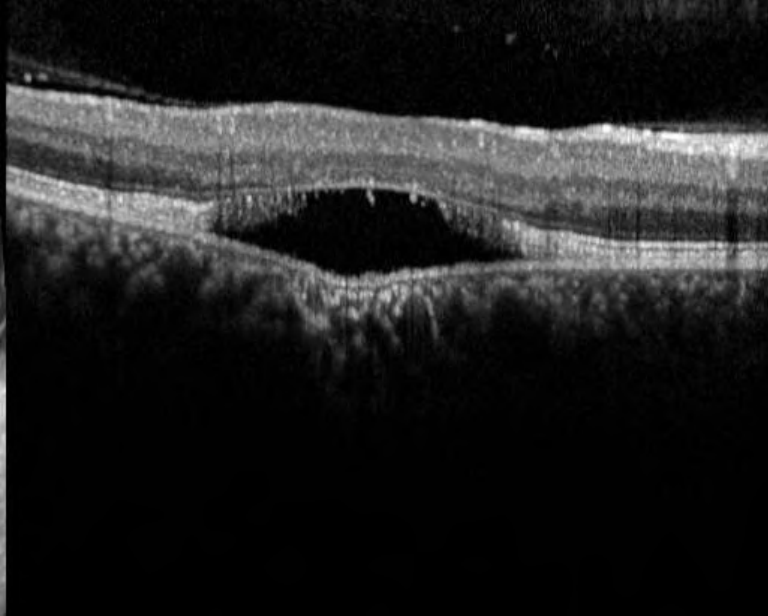
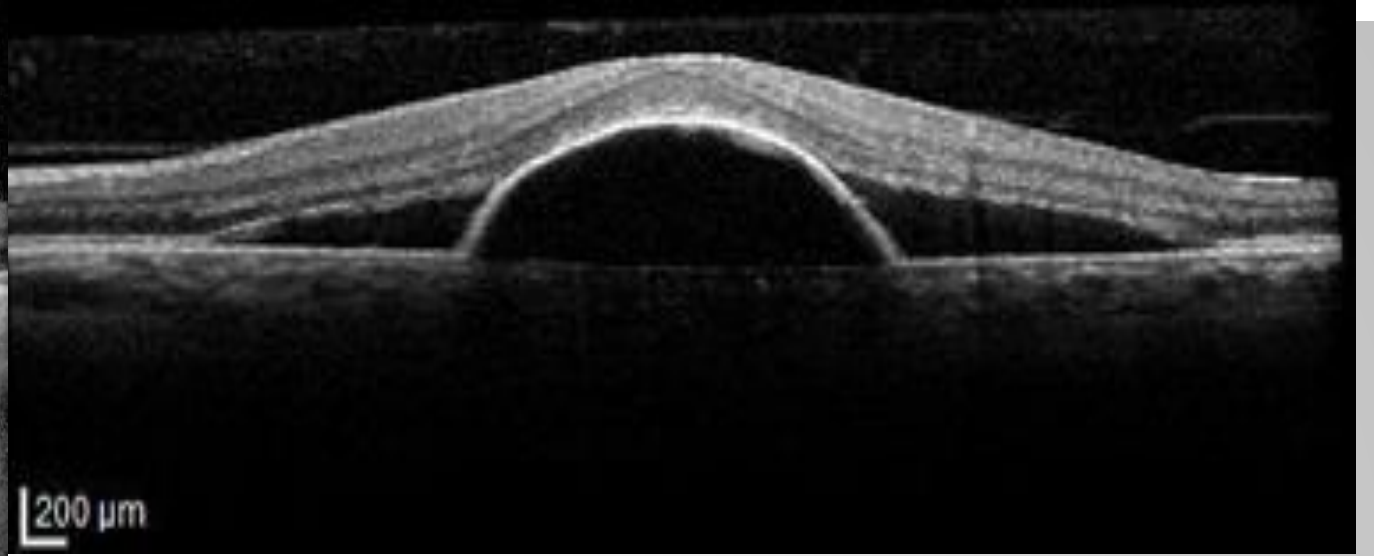
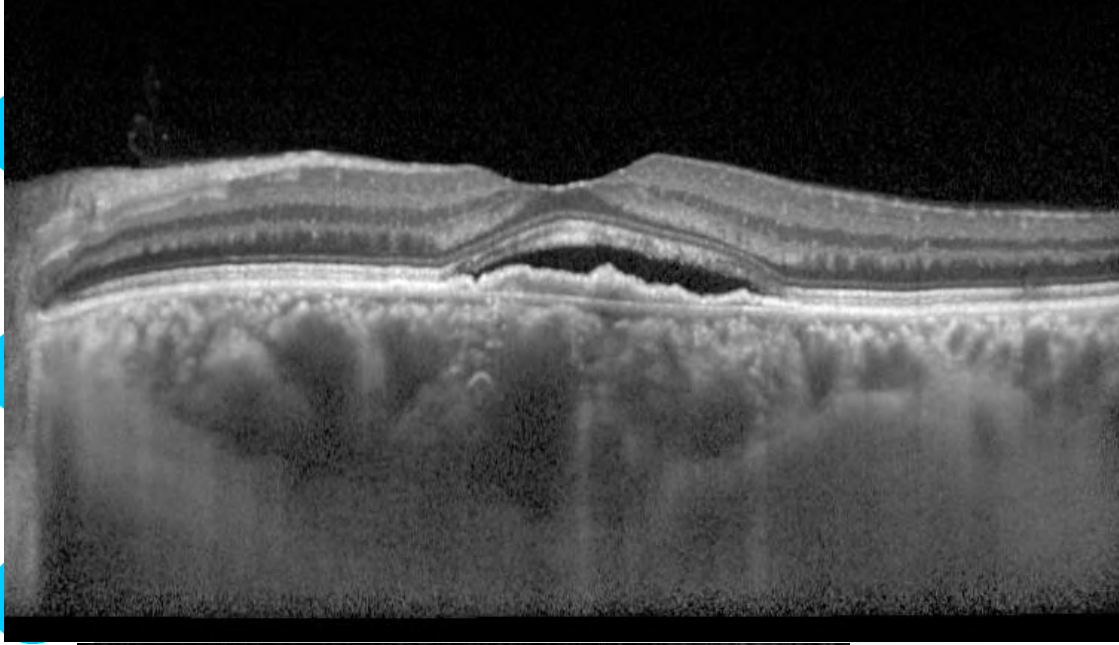
Full Thickness (ILM - RPE)

- Thickness
 - Full
 - ILM Elevation
- ☒ ETDRS

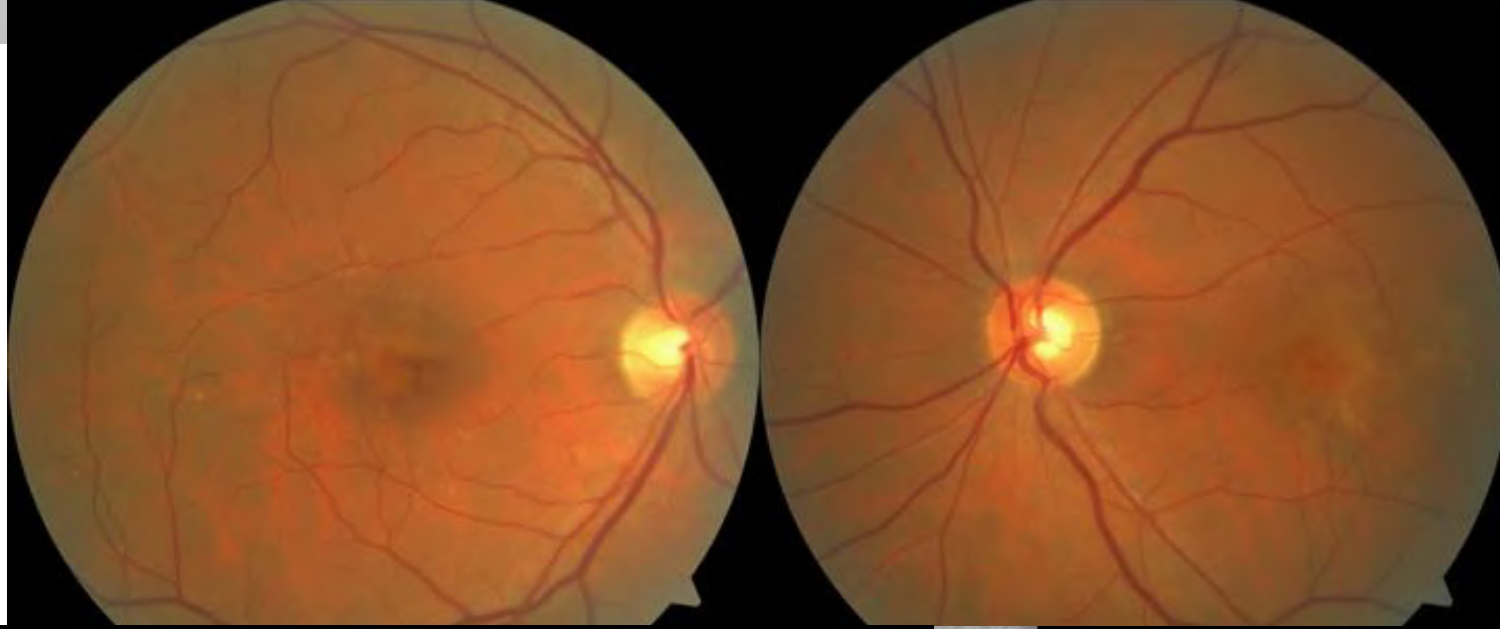


SSKR

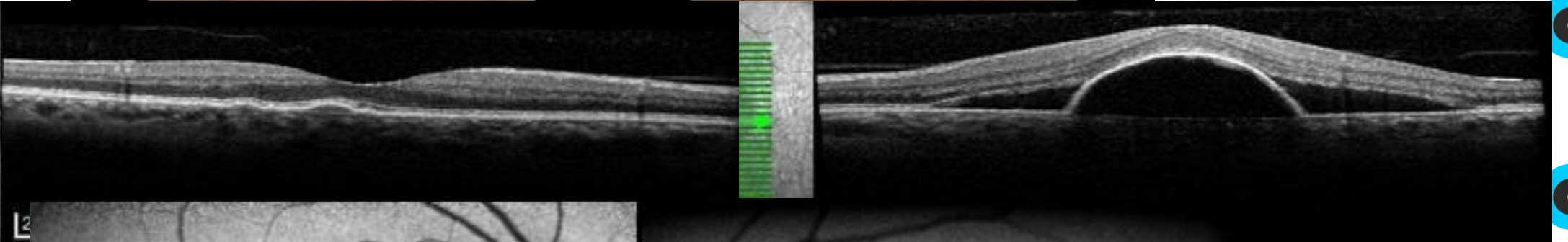
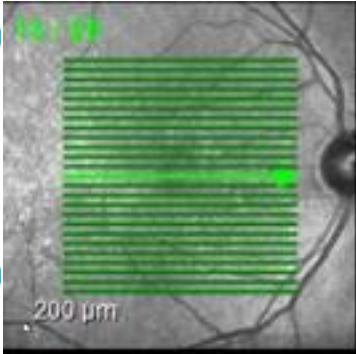
OCT-Ayırıcı tanı



SSKR



62y, K,
KG: 1.0/0.7



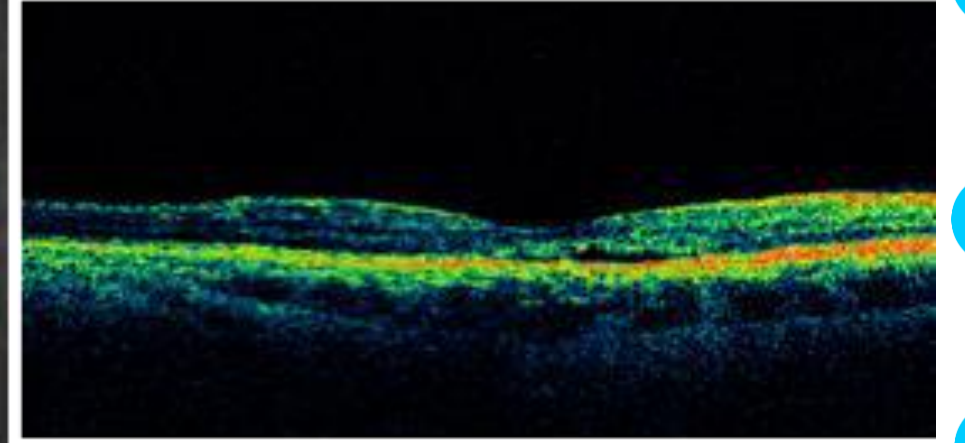
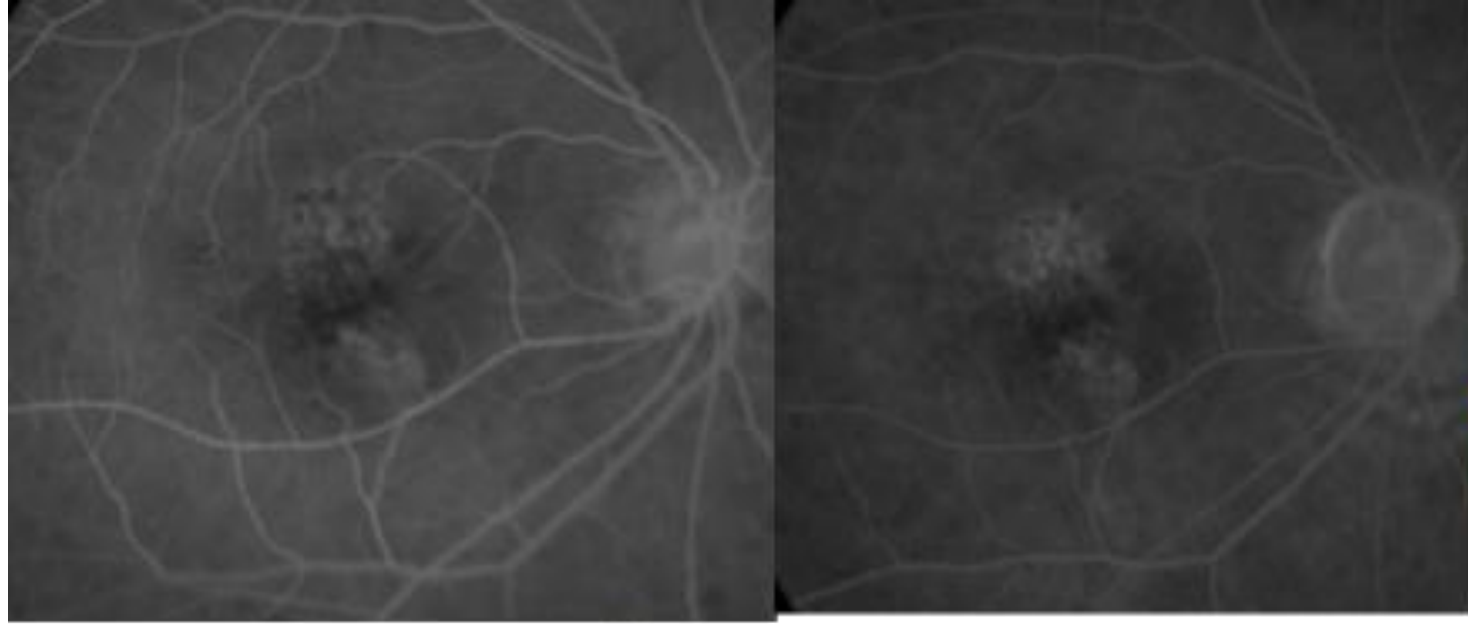
YBMD için 3X ENJEKSİYON: cevap yok!



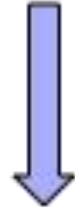


SSKR

55y, E, GK: 0.5

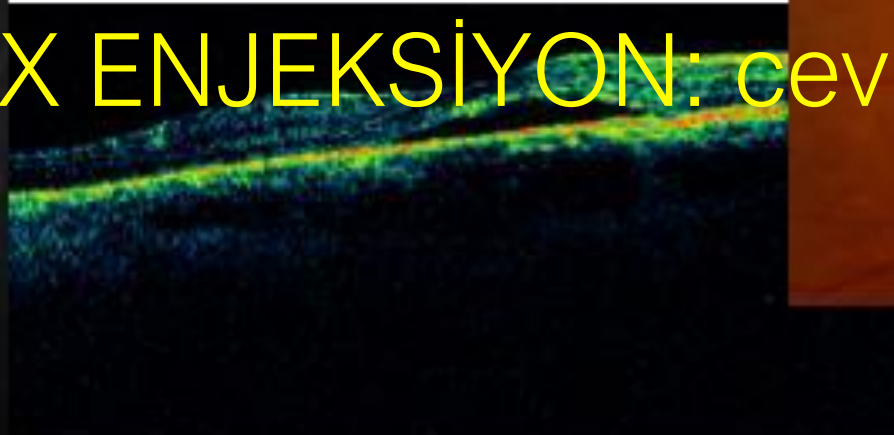


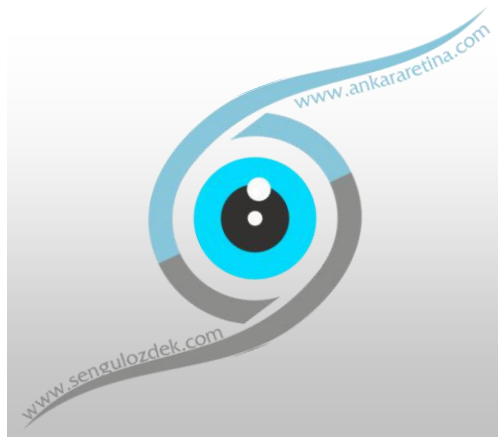
3X Lucentis



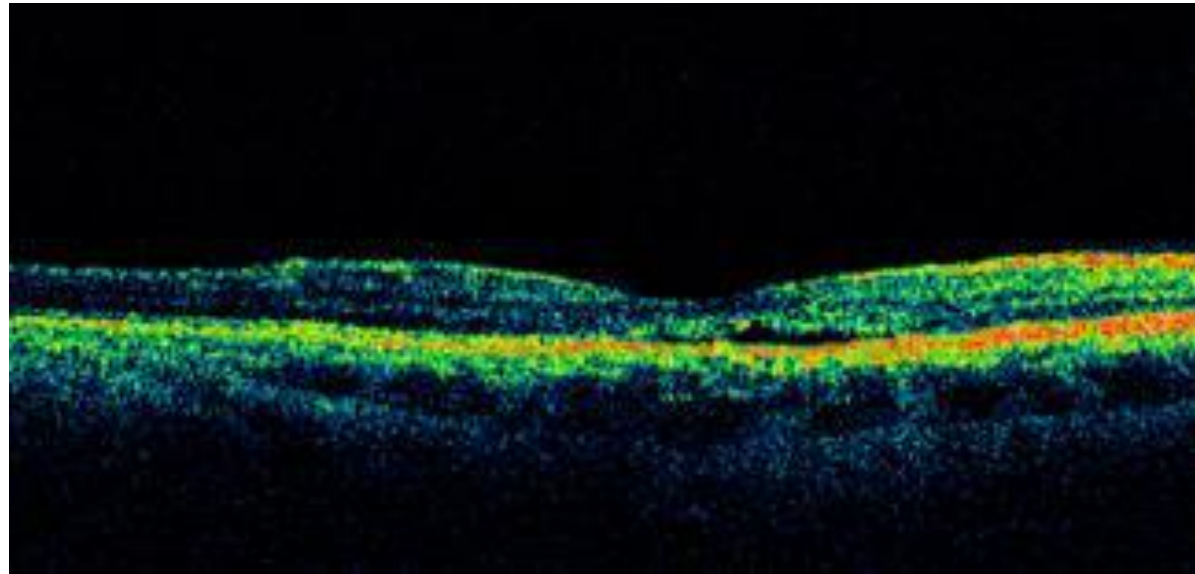
GK: 0,5

YBMD için 3X ENJEKSİYON: cevap yok!

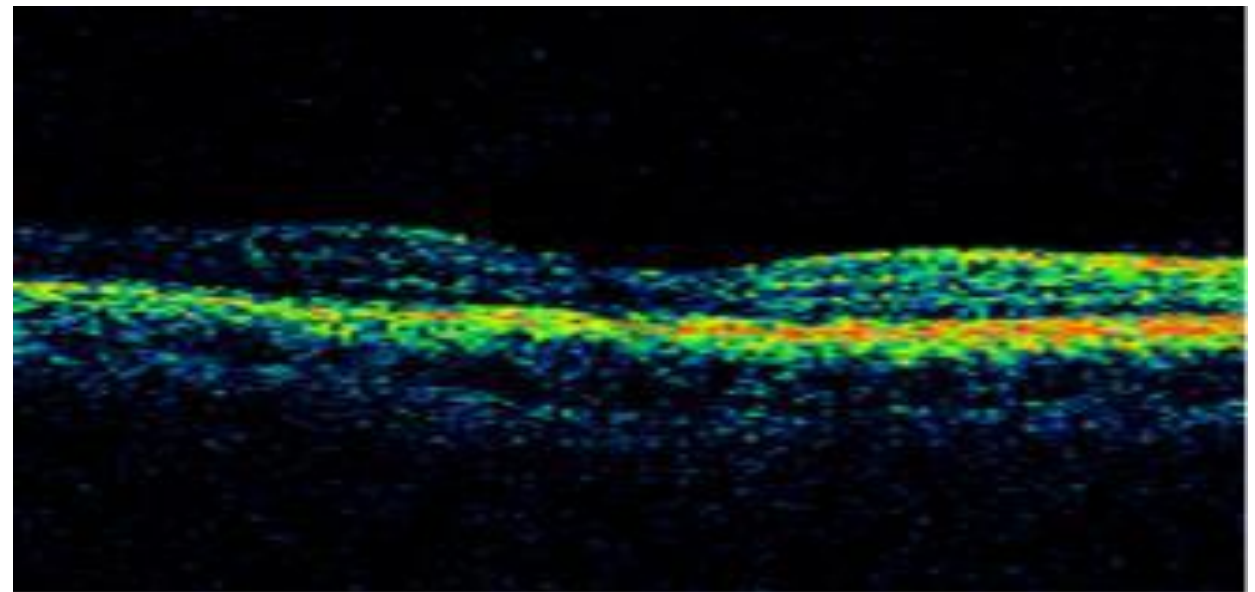




SSKR

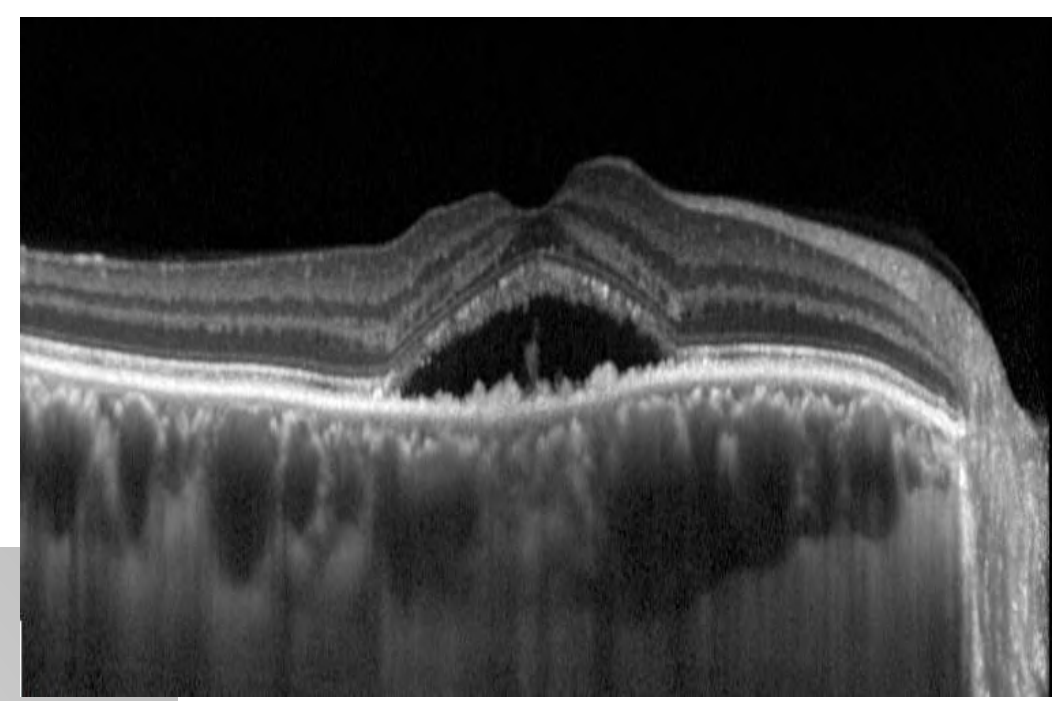


1/2 fluence PDT: 1. AY: GK: 0.7



13.ay: GK: 0.8

KRONİK SSKR



• Drusen yok! FOF: Tipik

• FA: Genellikle bilateral multiodaklı sızıntılar,

• OCT: Subfoveal sıvı ve PED (intraretinal sıvı -)

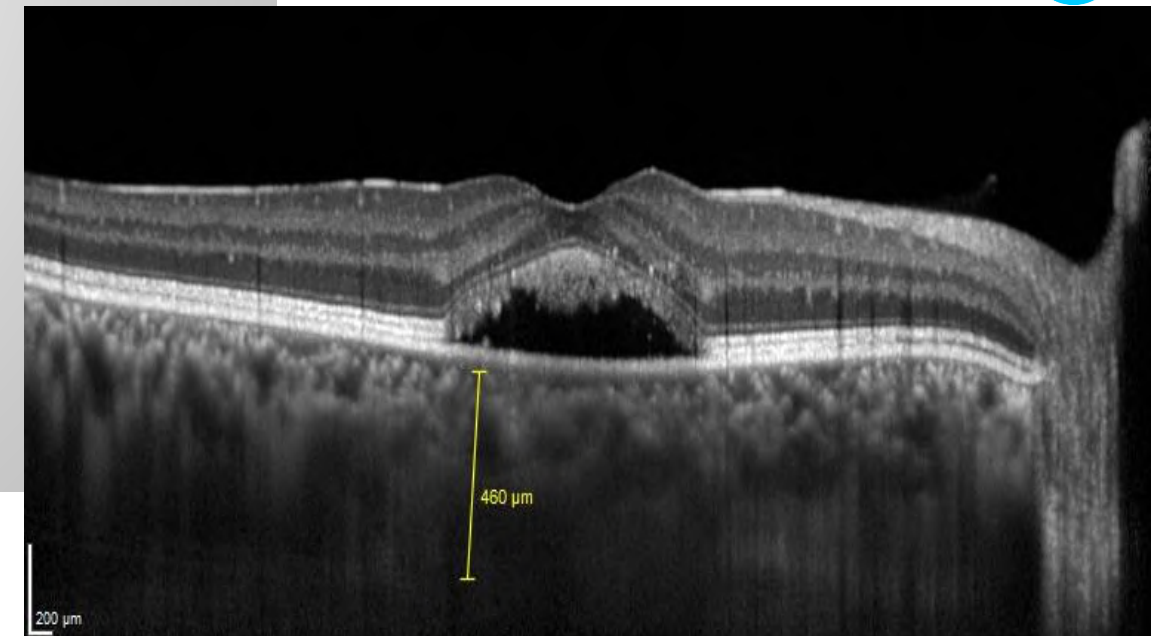
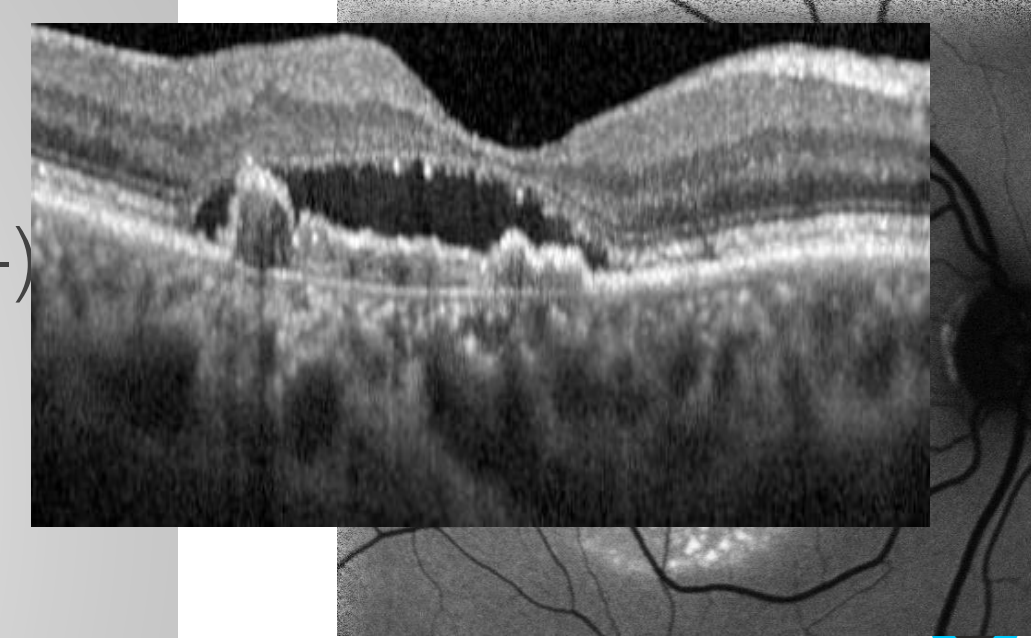
Fırçamsı kenar

• ICG: Koroidal hyperpermiabilite

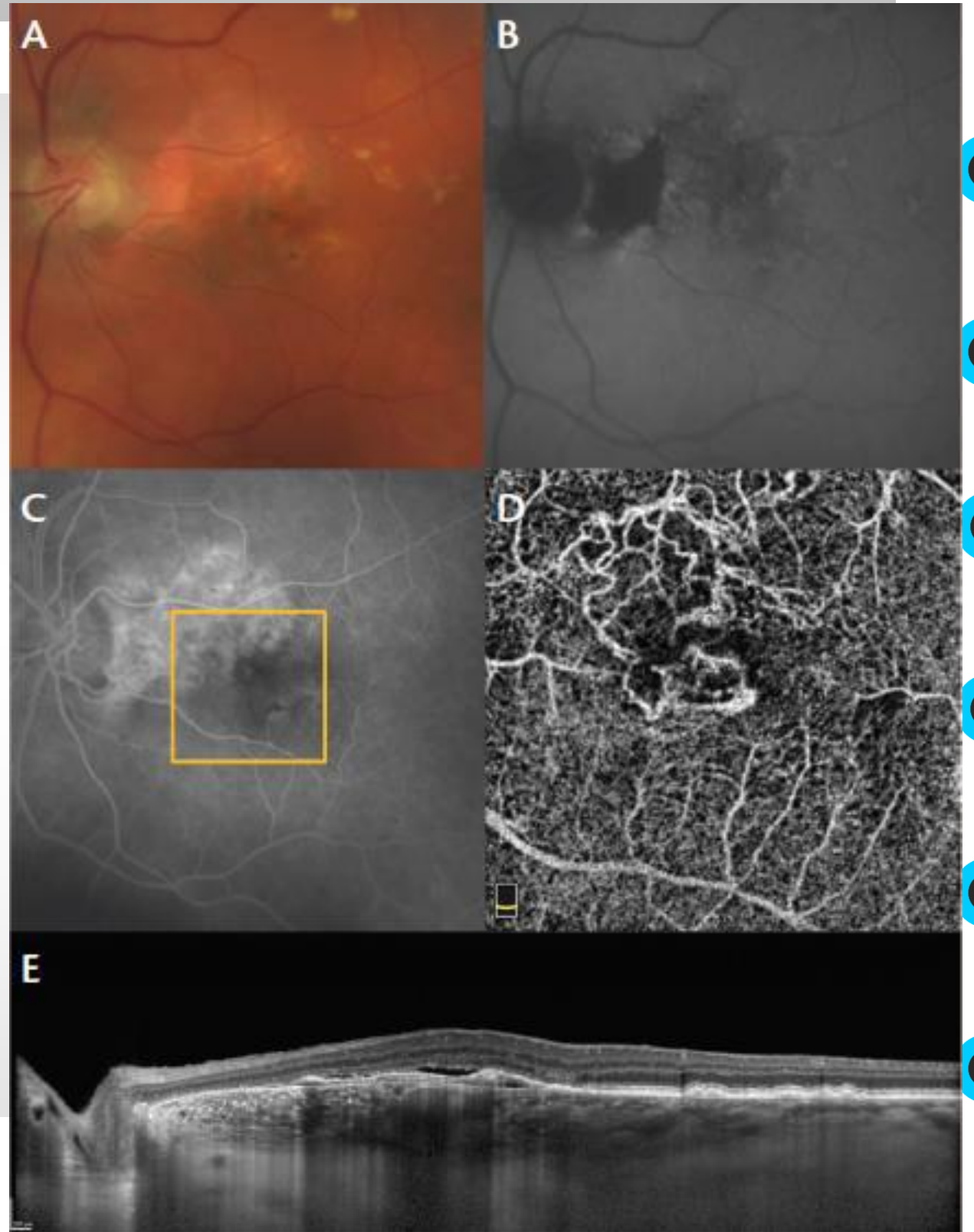
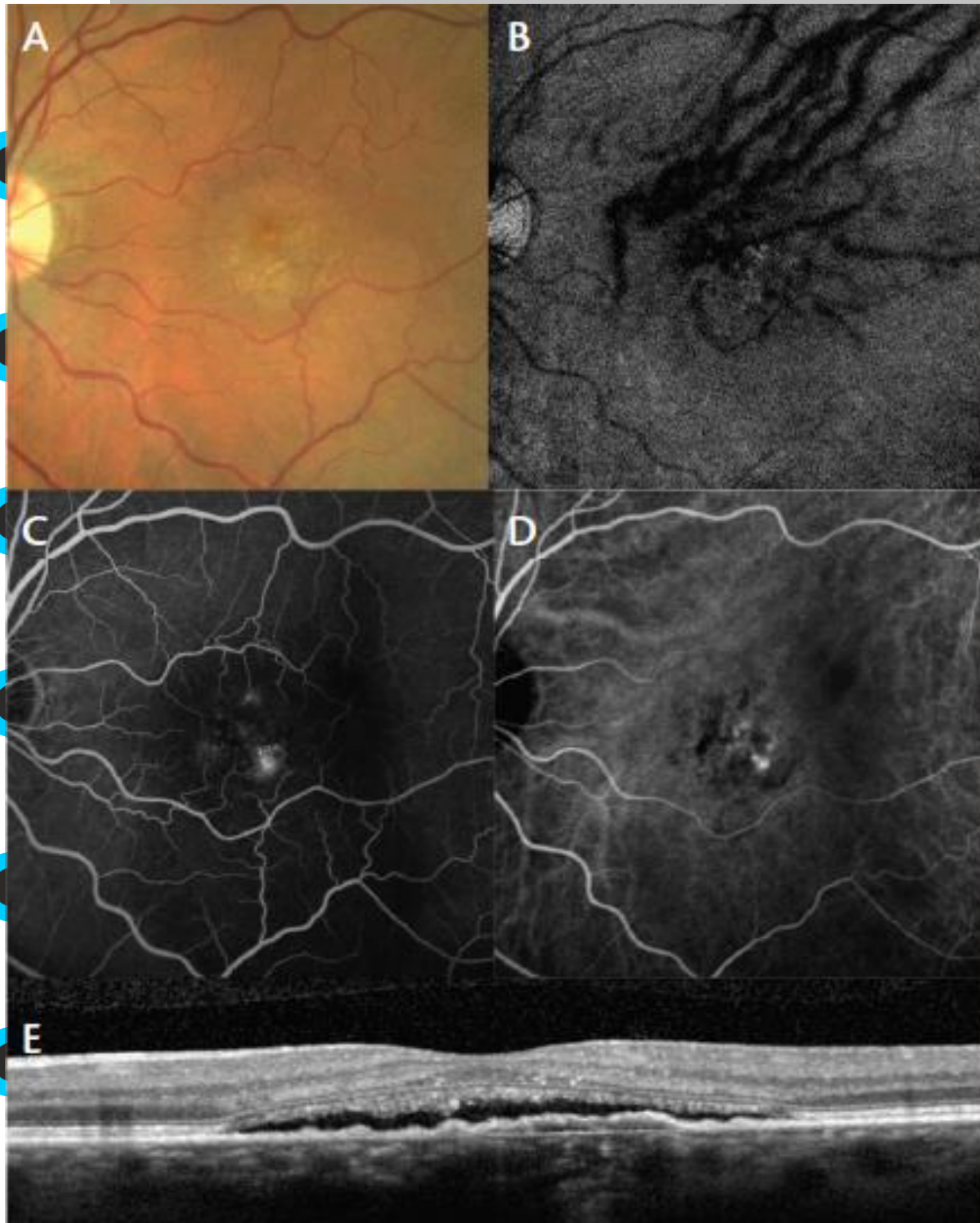
• EDI-OCT: Kalın koroid

• KVNМ seyrek (Anti-VEGF)

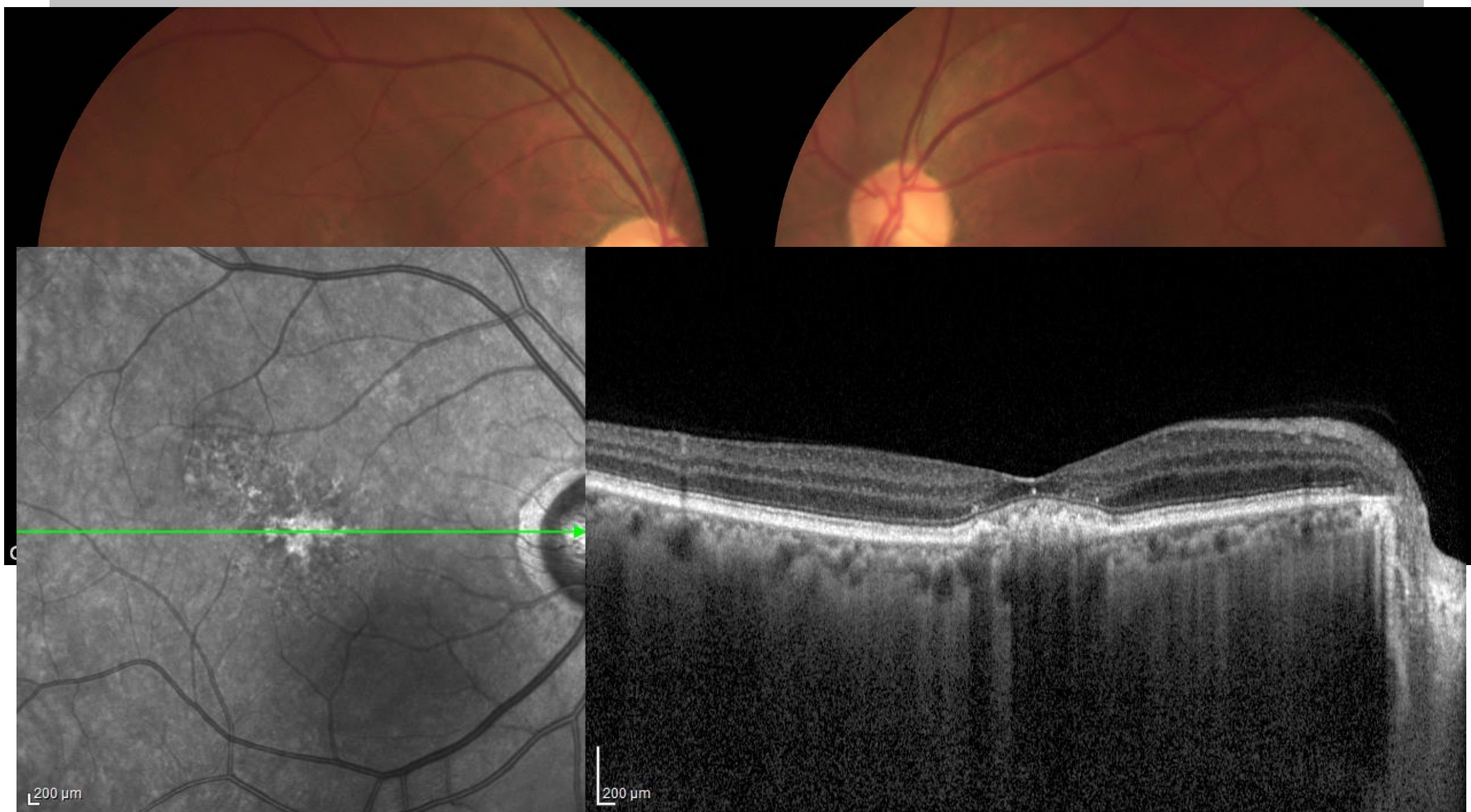
• Tedavi: PDT



Kronik SSKR-Pakikoroid NV



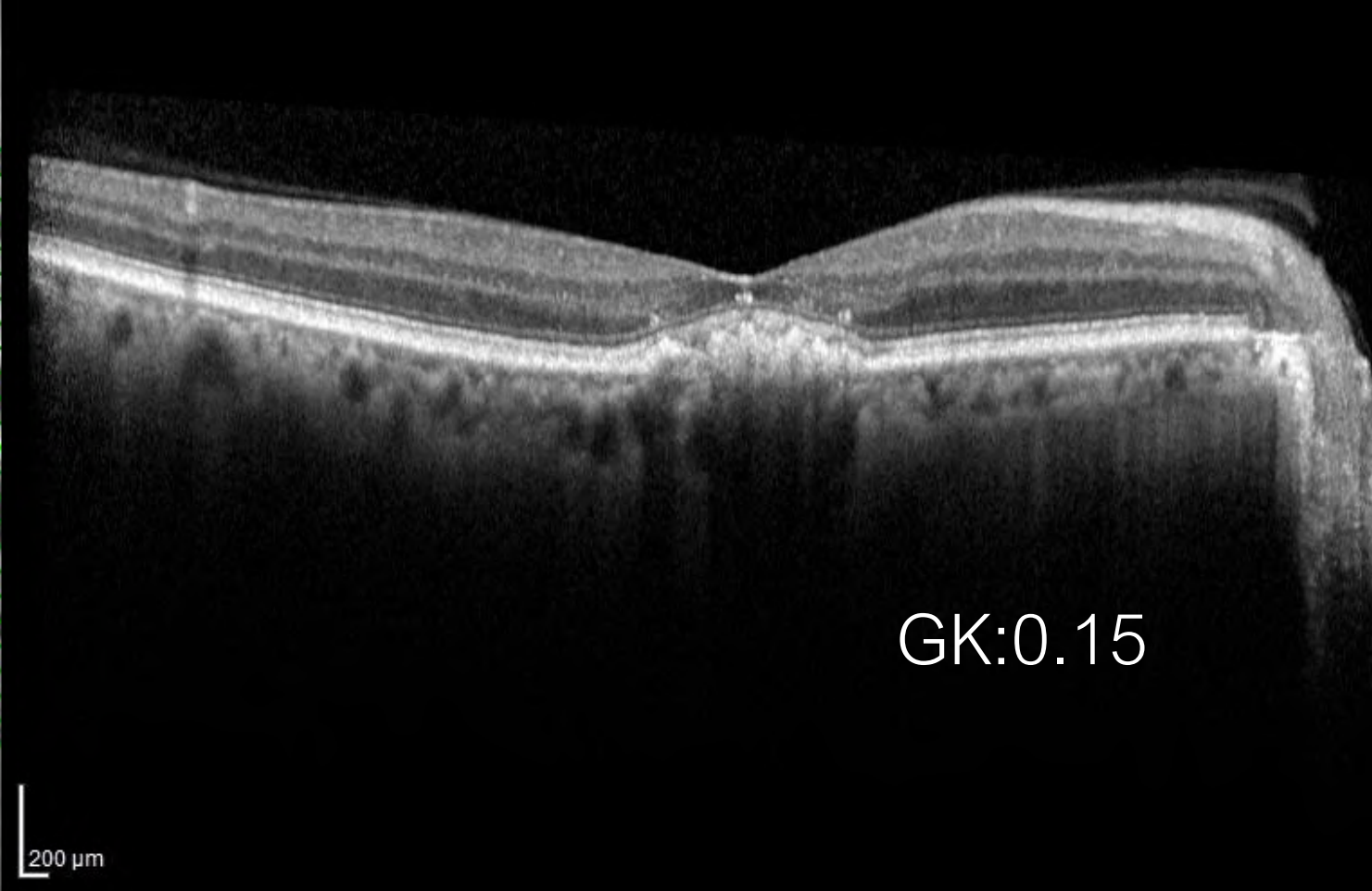
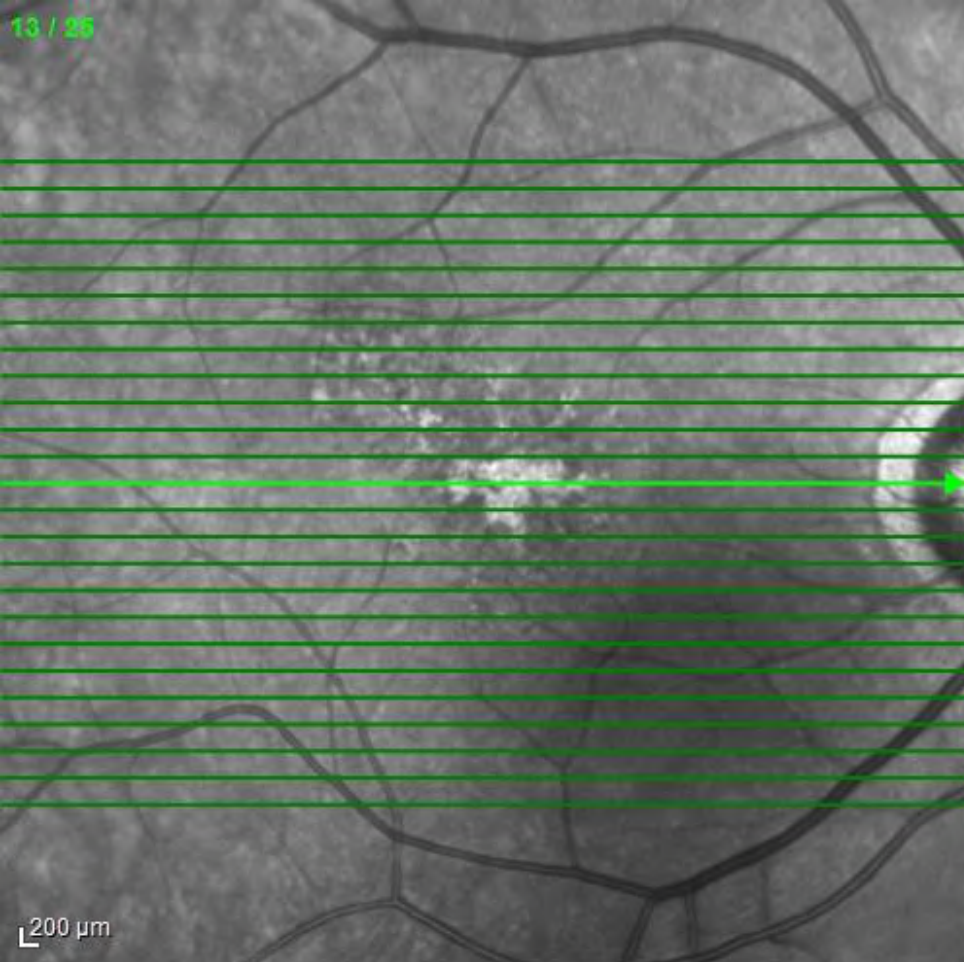
62, E
GK: 0.15/.0.7



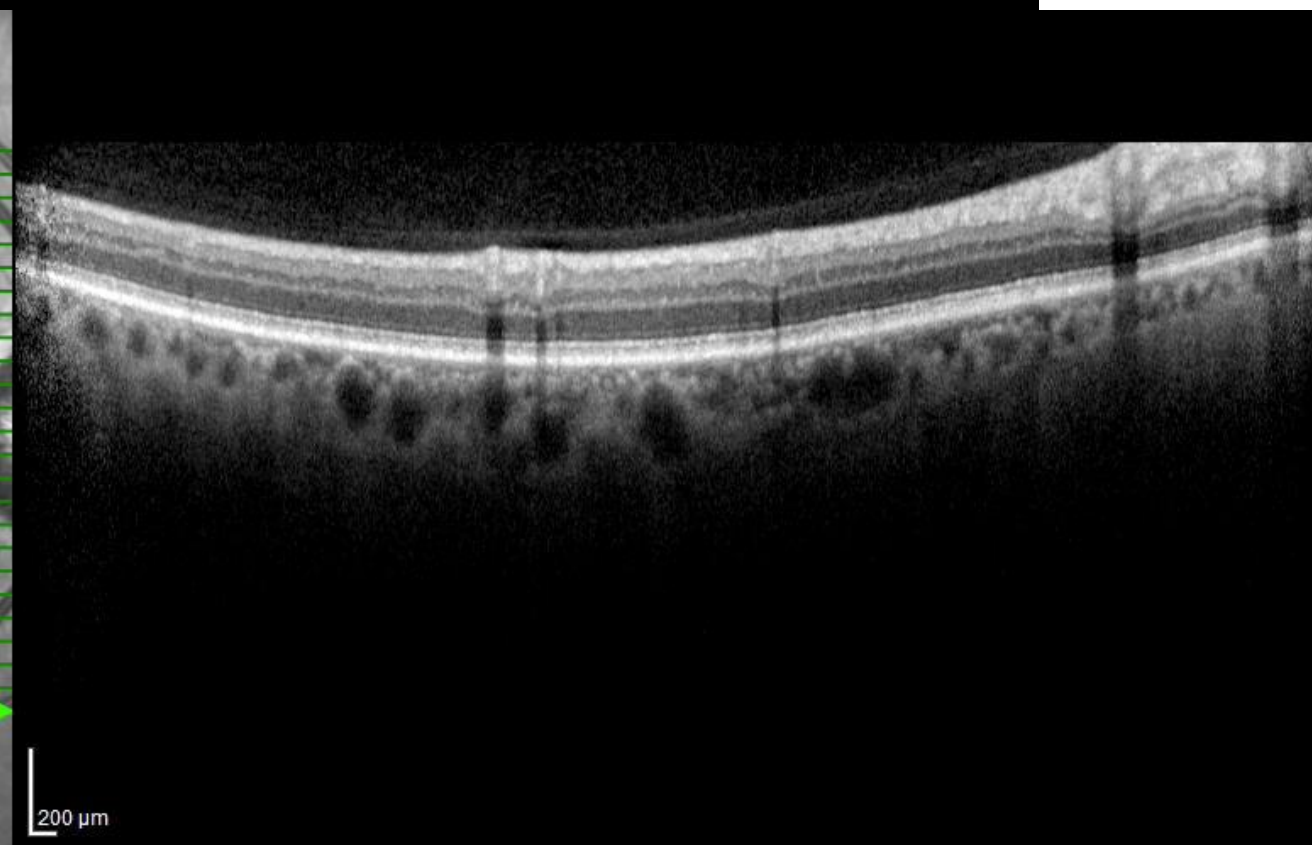
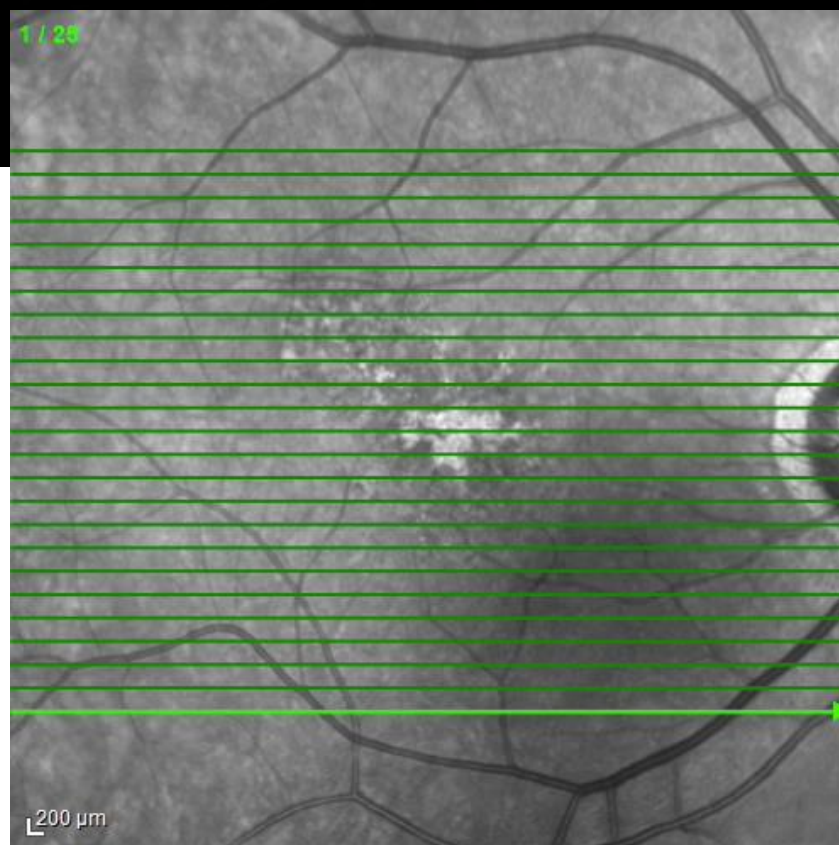
21.12.2017, OD

IR&OCT 30° FDI [HS] ART(13) Q: 28

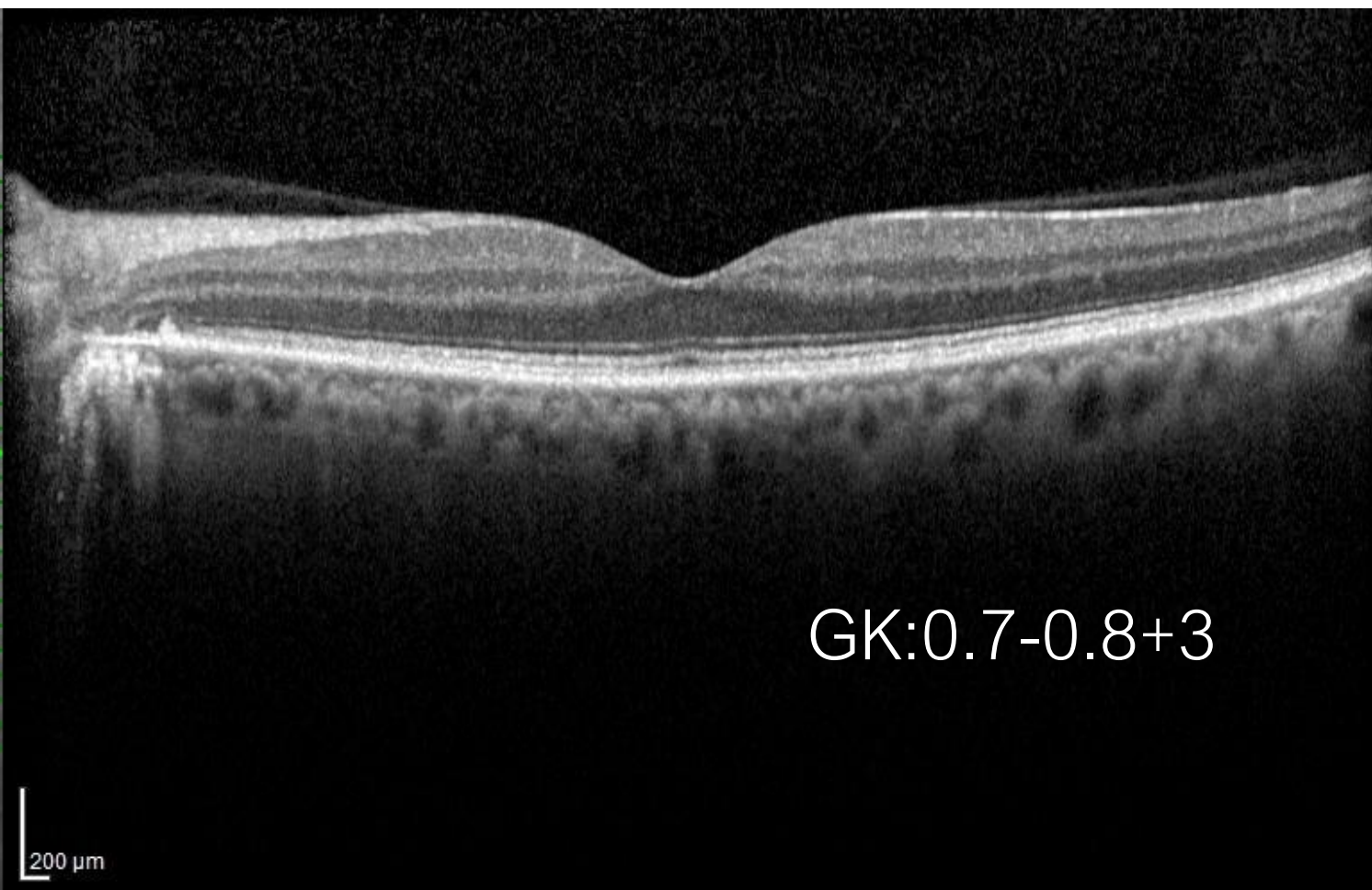
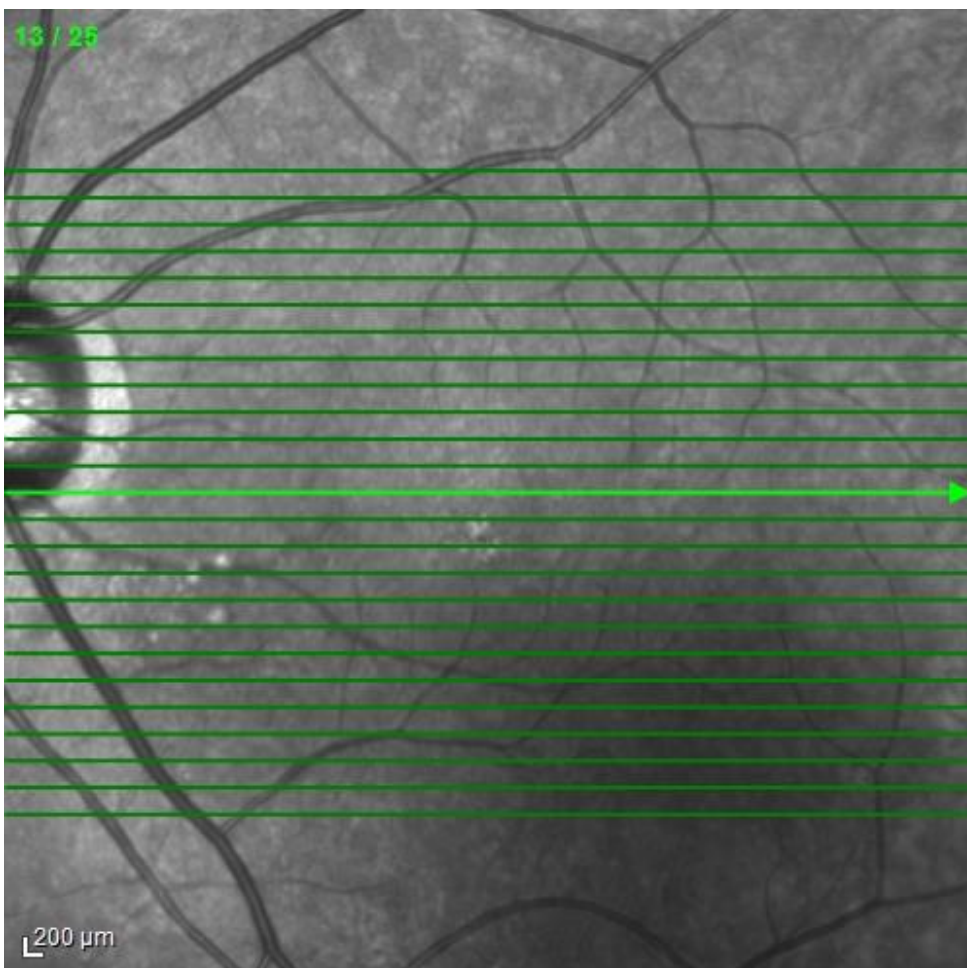
HEIDELBERG



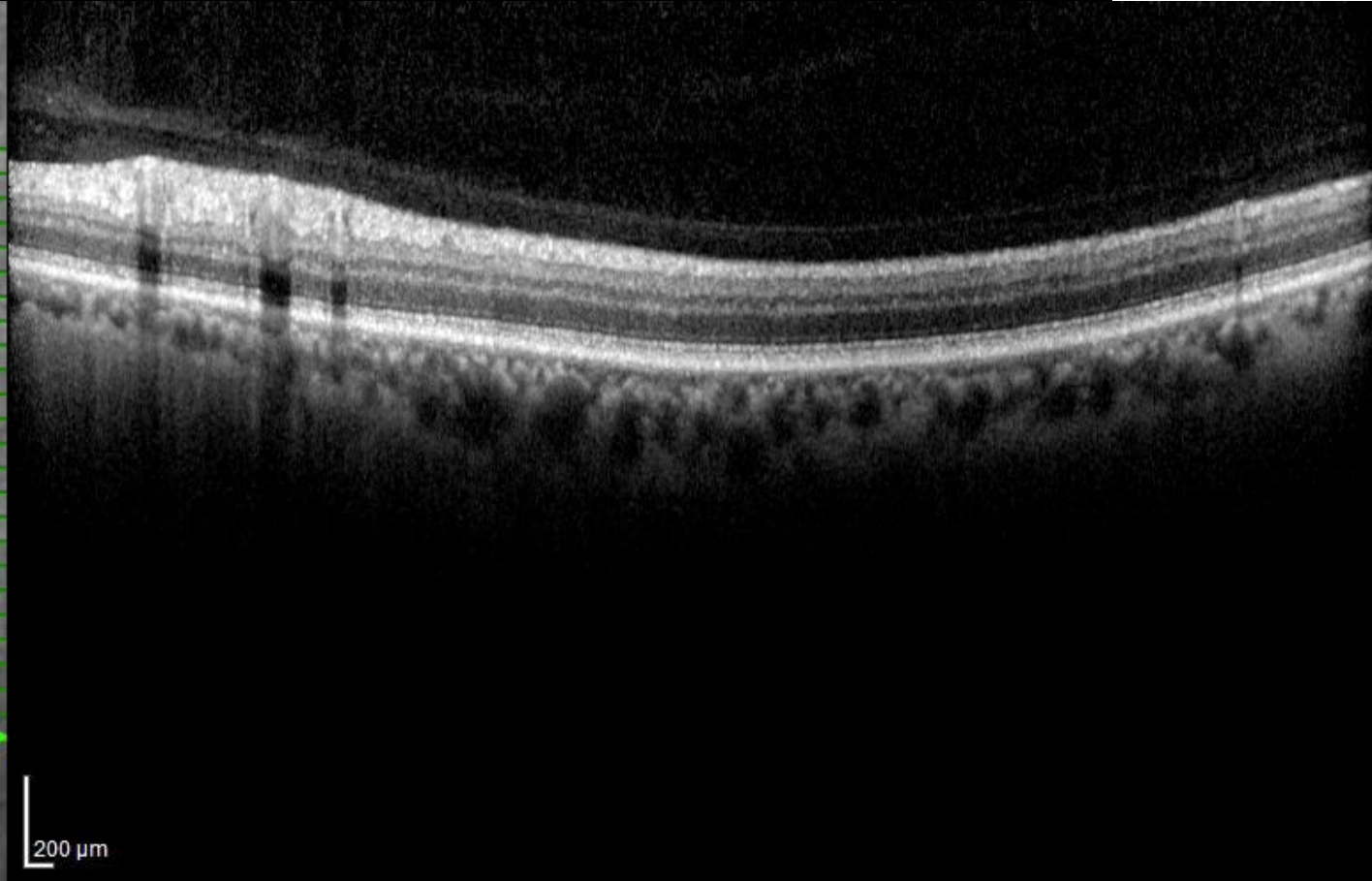
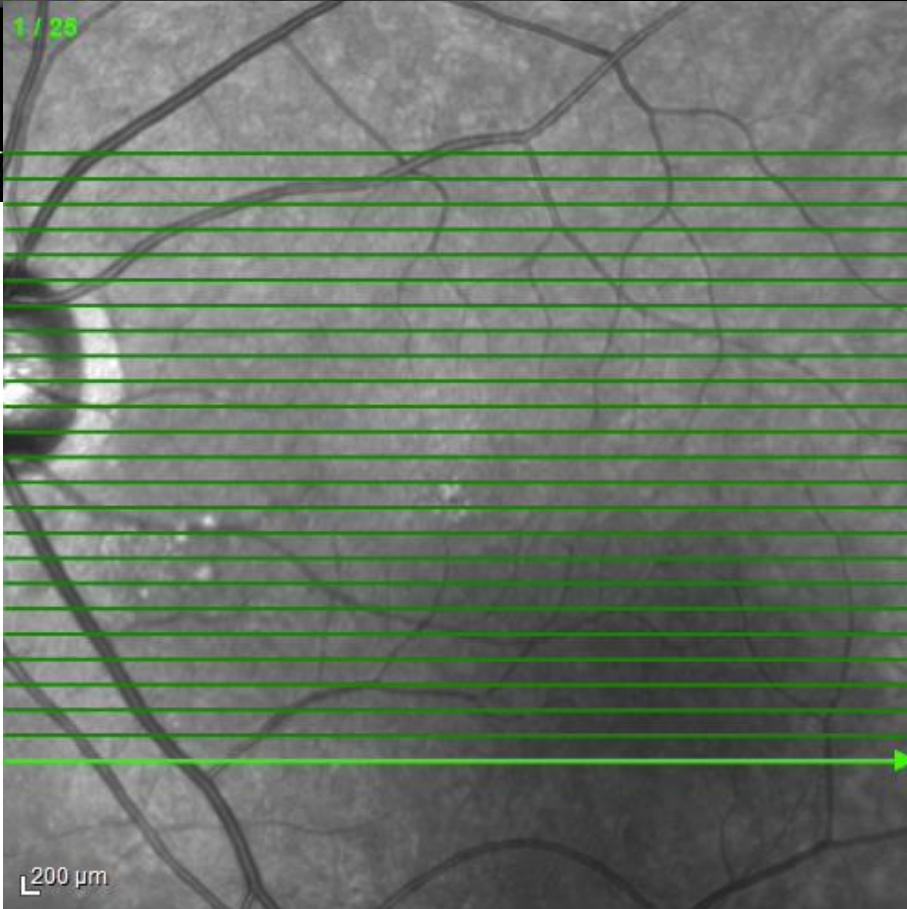
21.12.2017, OD
IR&OCT 30° ART [HS] ART(12) Q: 33



21.12.2017, OD
IR&OCT 30° ART [HS] ART(12) Q: 33



21.12.2017, OS
IR&OCT 30° ART [HS] ART



21.12.2017, OS
IR&OCT 30° ART [HS] ART(12) Q: 32



22.01.2018, OS
FA 2:59.51 35° ART(16)

HEIDELBERG
ENGINEERING



22.01.2018, OD
FA 0:27.58 35° ART(14)

HEIDELBERG
ENGINEERING



22.01.2018, OD
FA 3:07.51 35° ART(8)

HEIDELBERG
ENGINEERING

HD Angio Retina

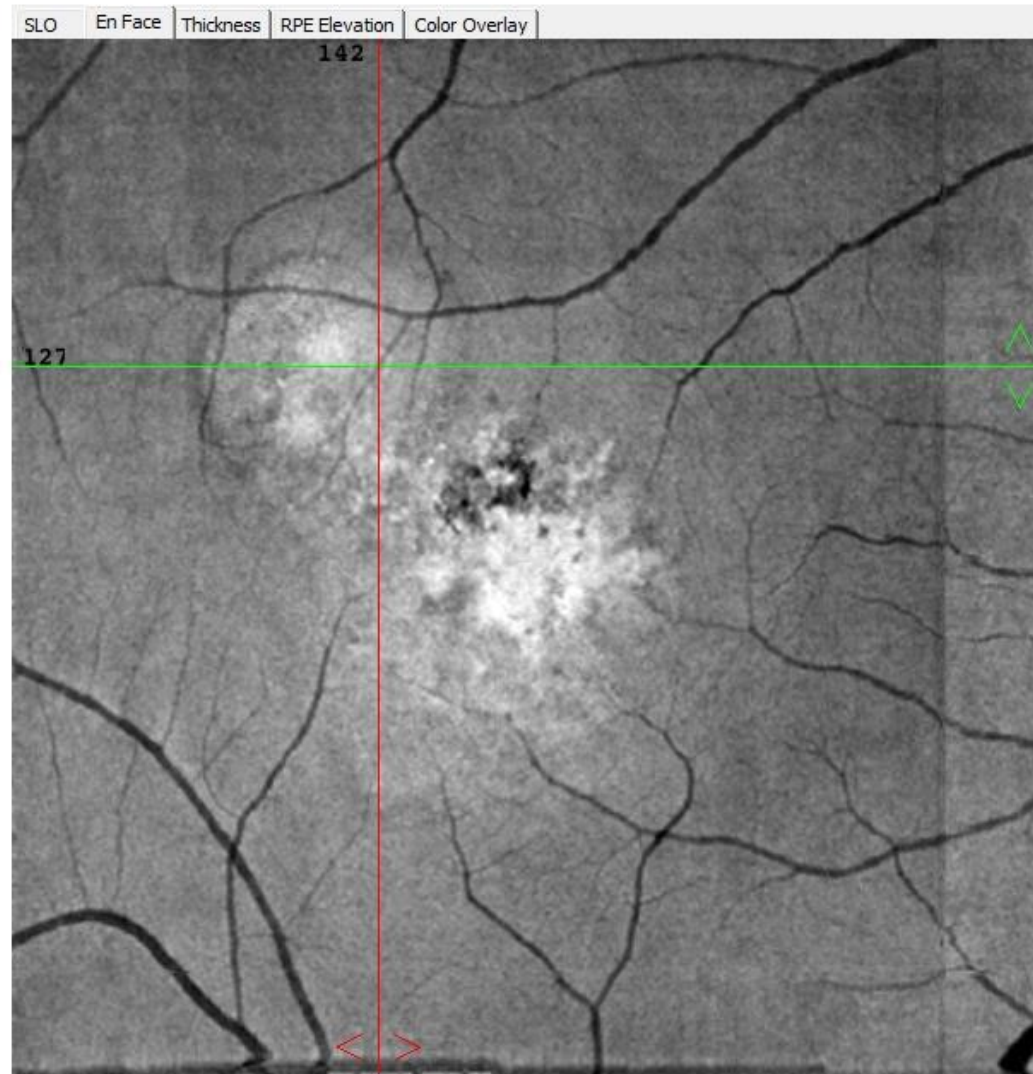
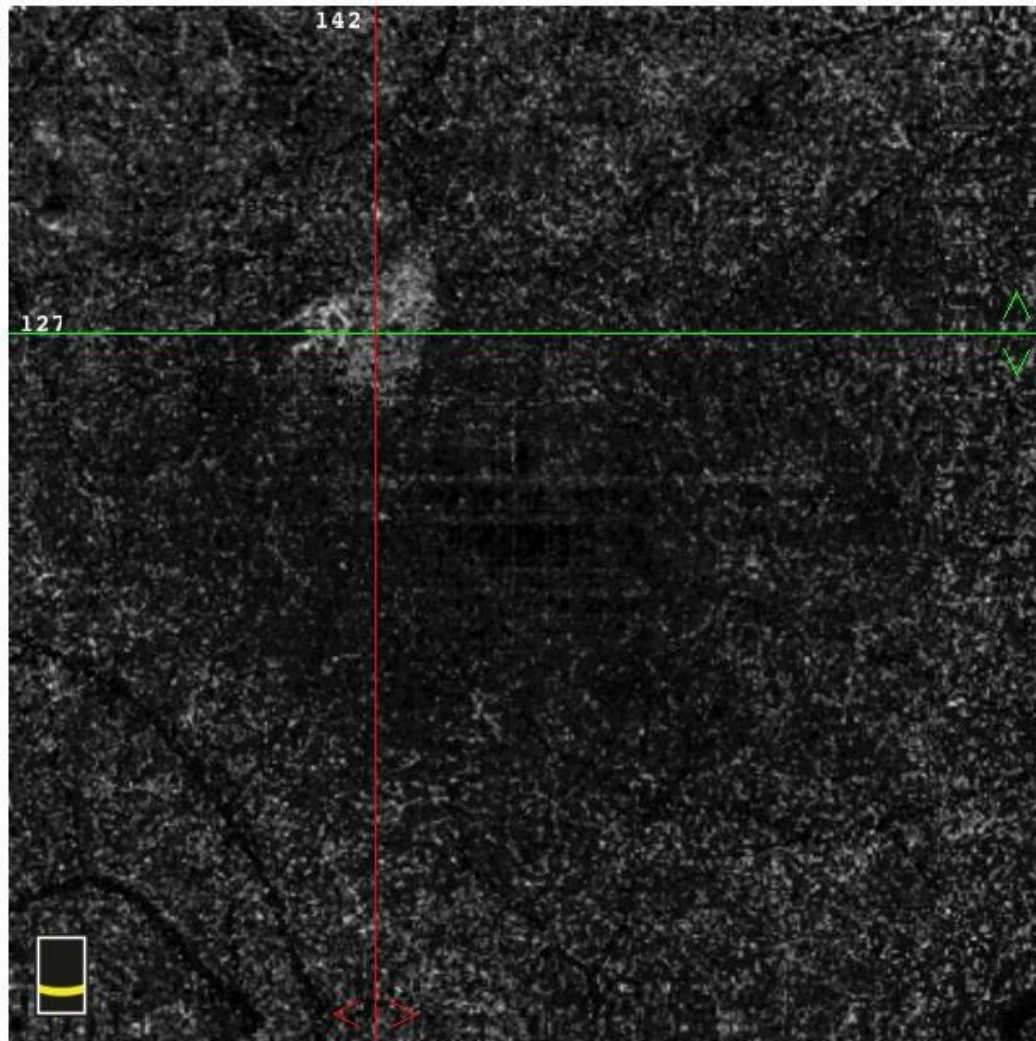
Scan Quality 8/10

Right / OD

6.00 x 6.00 Scan Size (mm)

Measure
Off

Export Angio



☐ Edit Bnd

Restore Settings

OverVue

QuickVue

Play

☒ Show Bnd

En Face Slab
☐ Superficial
☐ Deep
☒ Outer Retina
☐ Choriocapillaris
☐ Retina
☐ Custom

☐ Color

☒ Show Lines

Upper - OPL
Offset(um)

9

Lower - BRM
Offset(um)

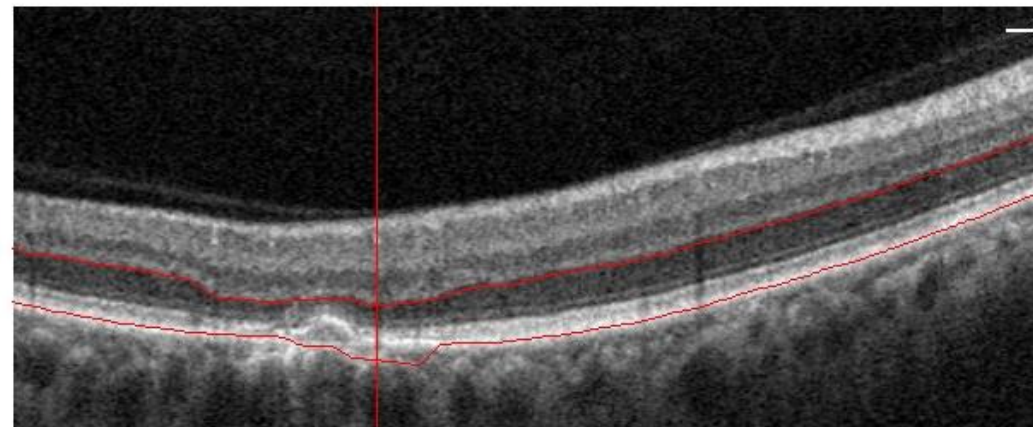
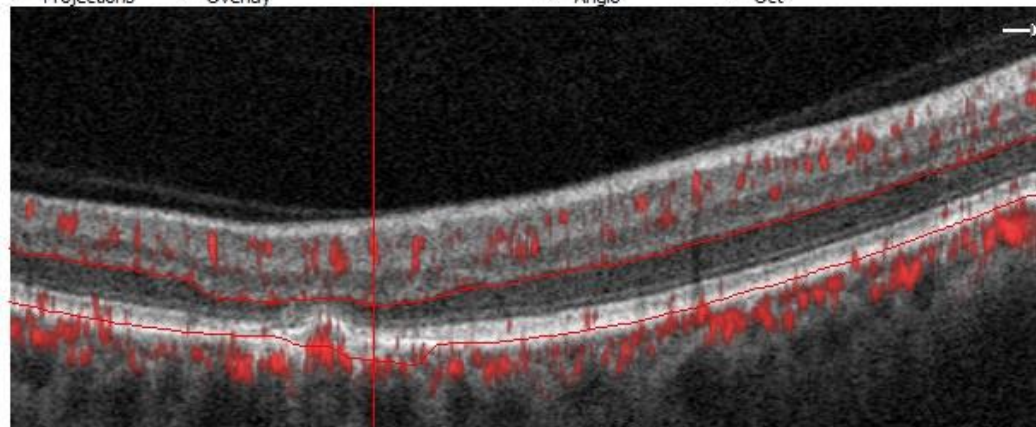
-9

☒ Remove
Projections

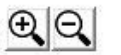
☒ Angio
Overlay

☒ Large
Angio

☐ Large
Oct



☒ Auto Zoom

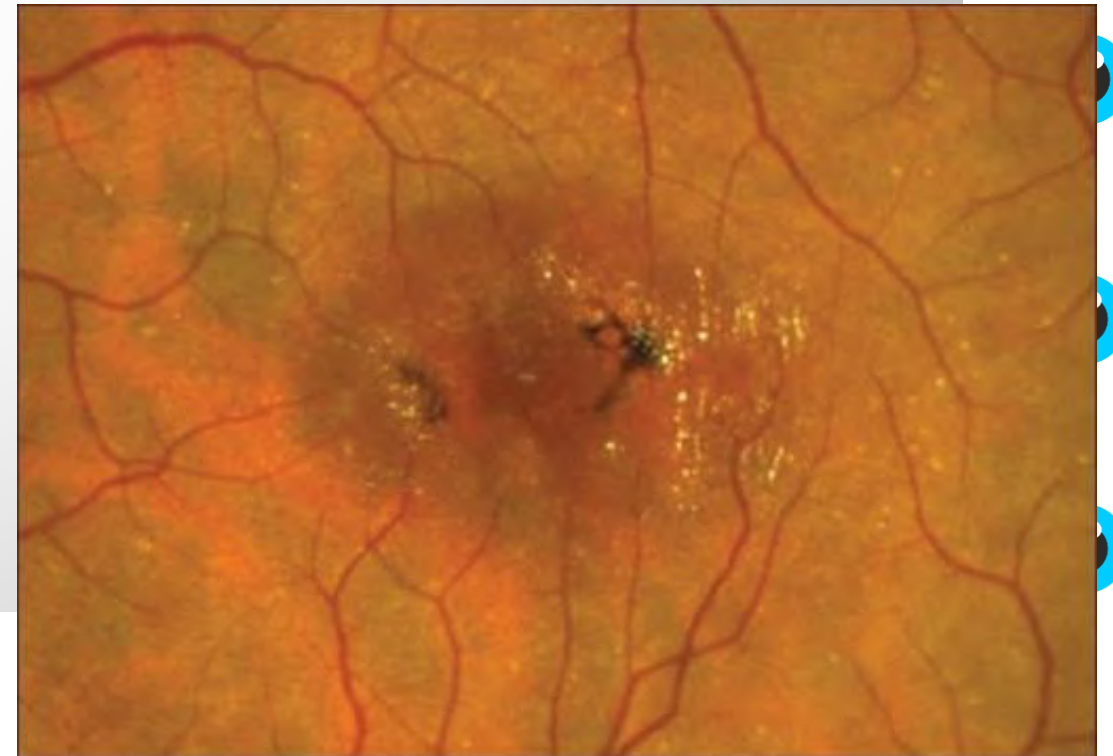
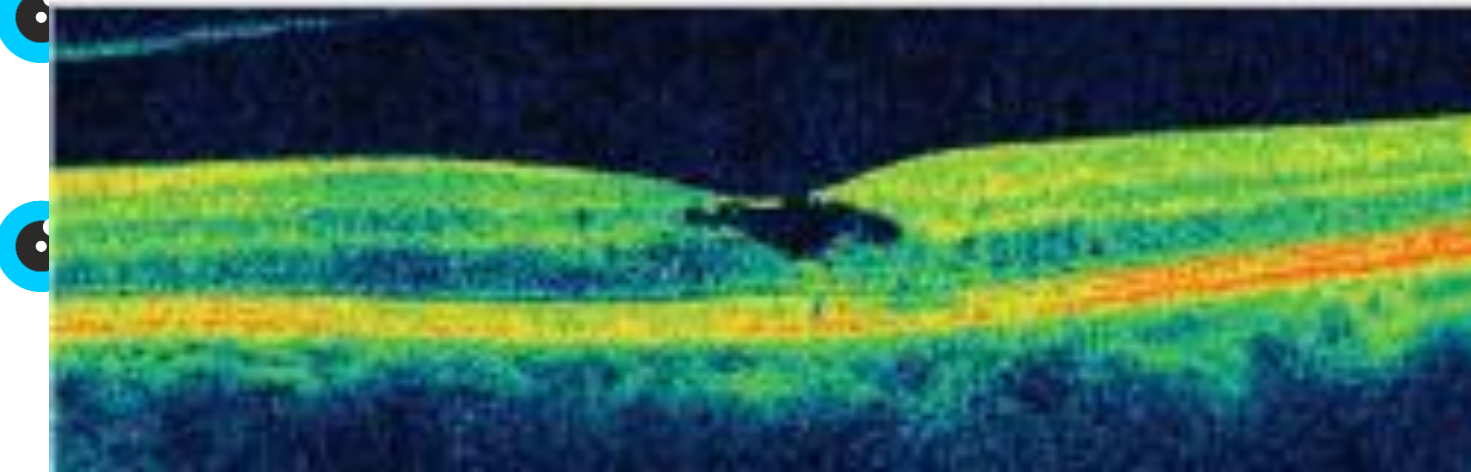
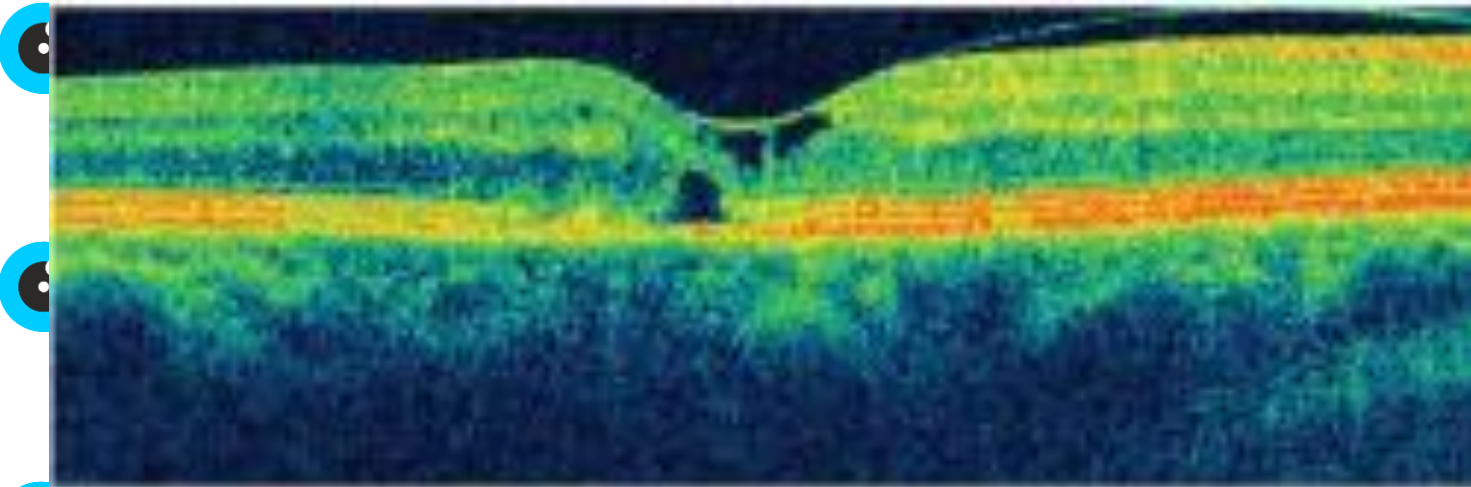
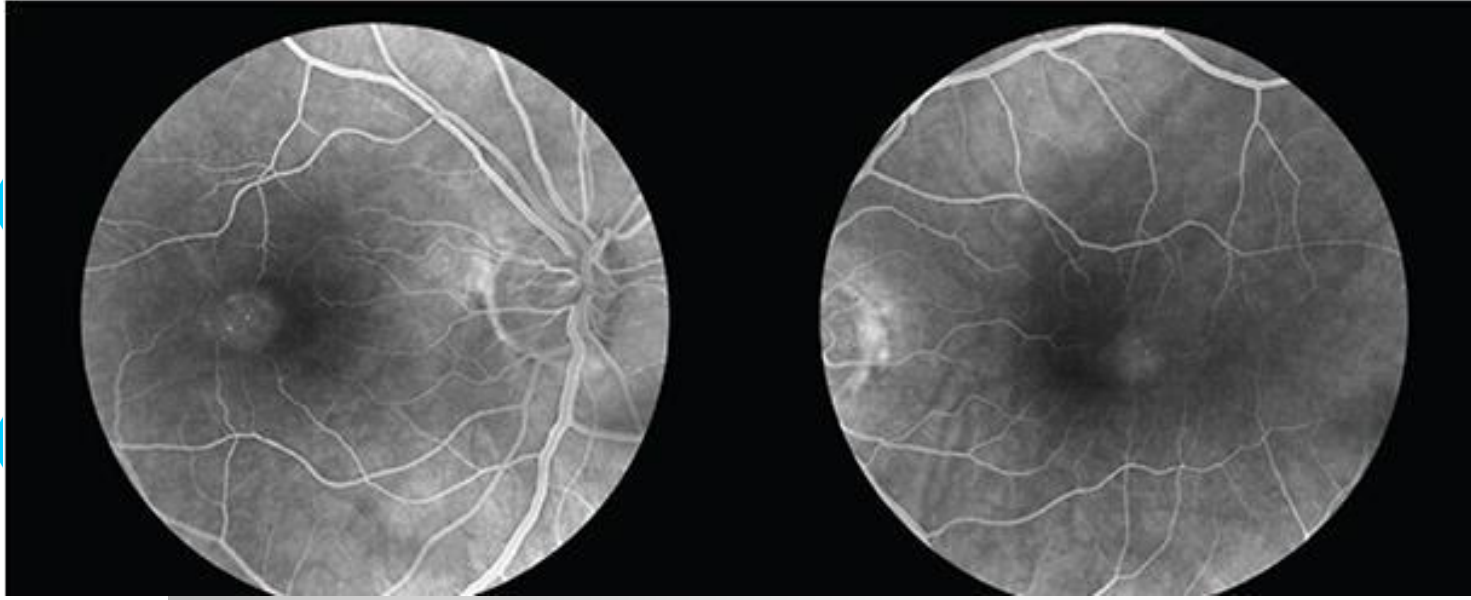


Print

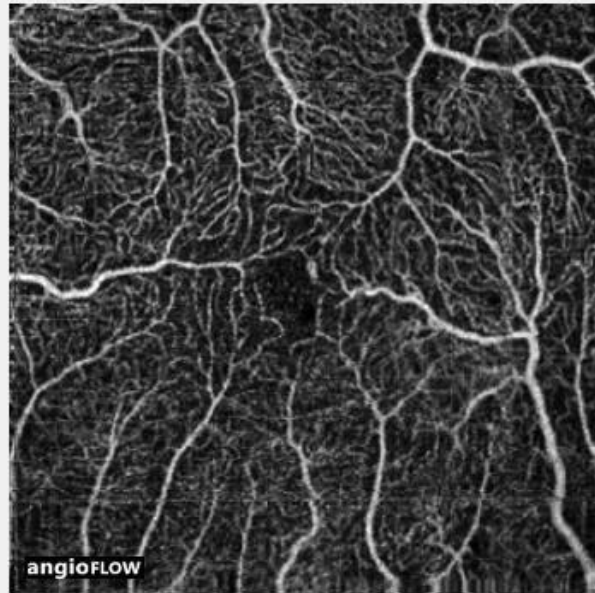
Comment



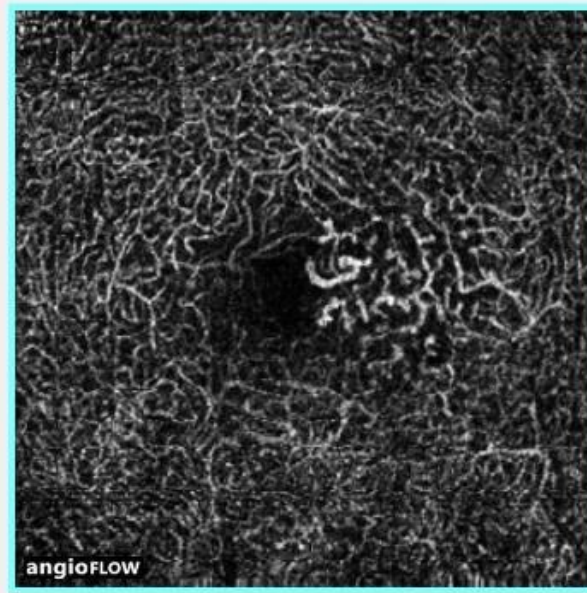
MAKÜLER TELANJİEKTAZİ



MAKÜLER TELANJİEKTAZİ



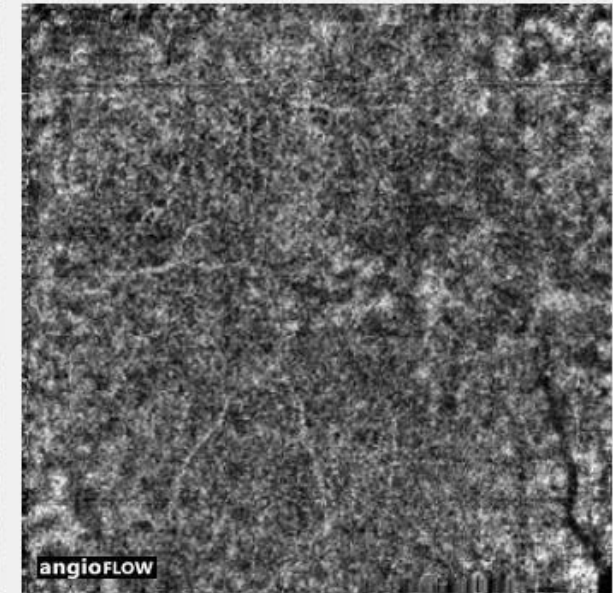
Angio - Superficial



Angio - Deep



Angio - Outer Retina



Angio - Choroid Capillary

Exit

Print

Save Angio

Reset View

☐ Invert

☐ Color

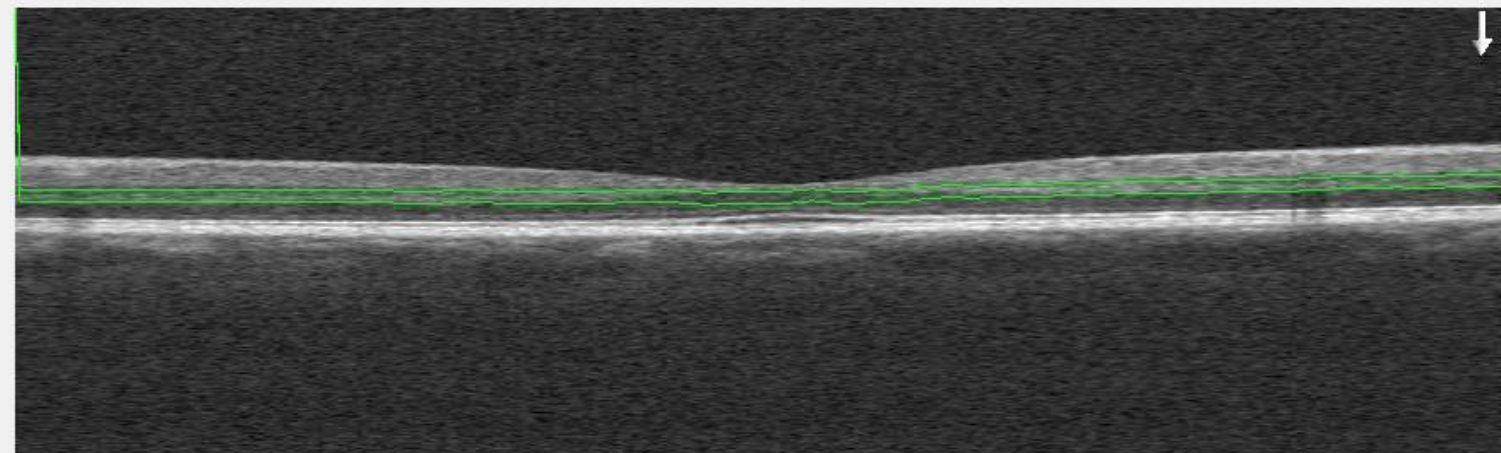
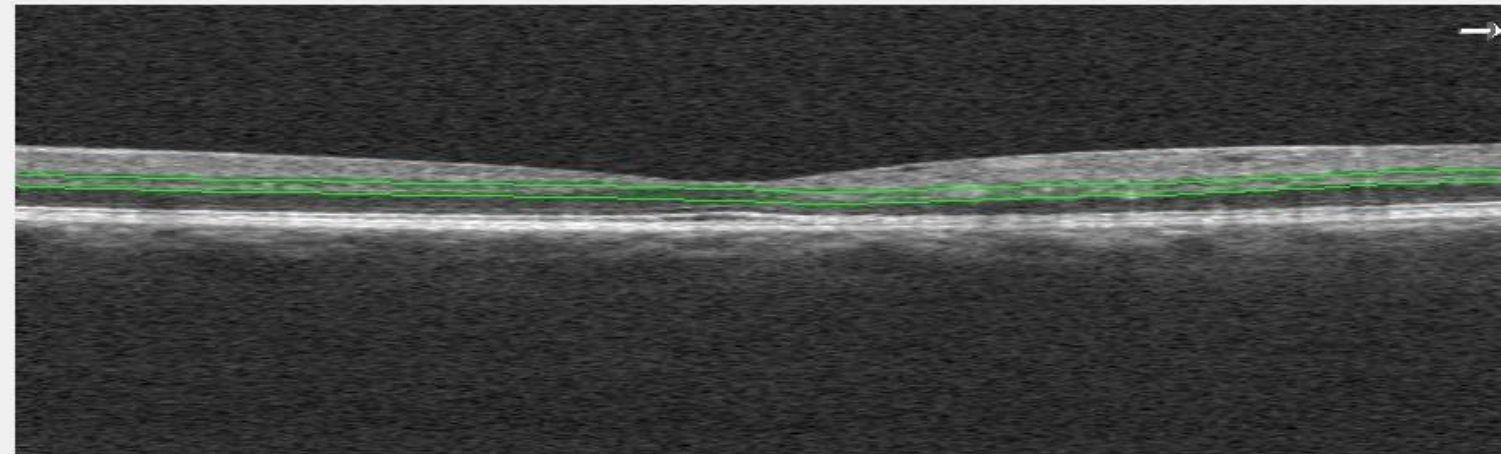
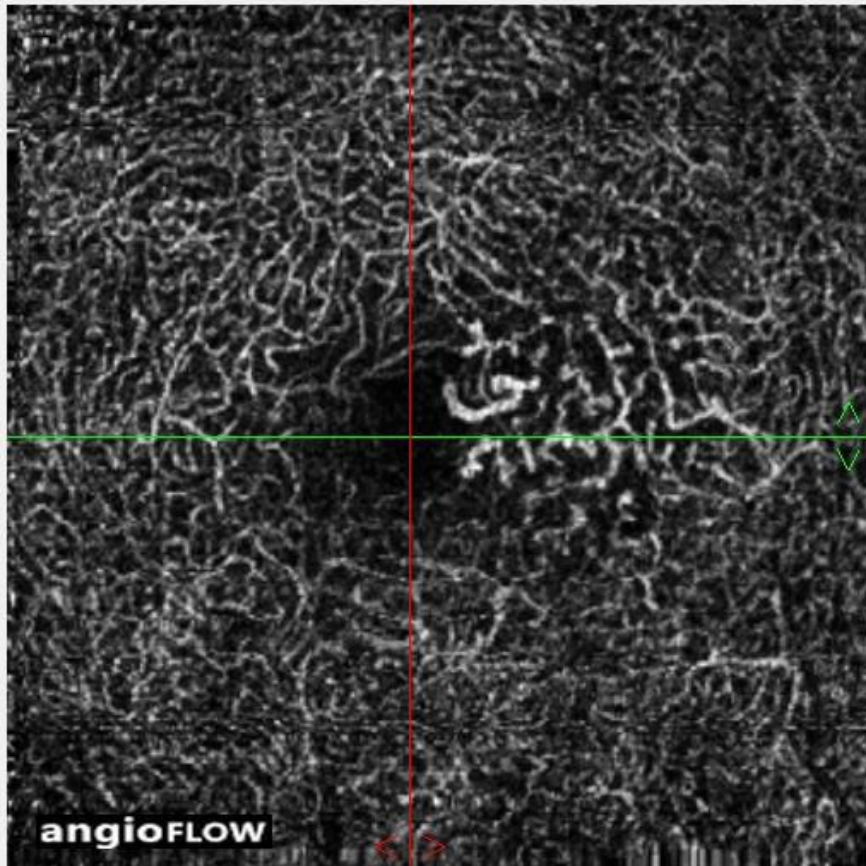
☐ Show Lines

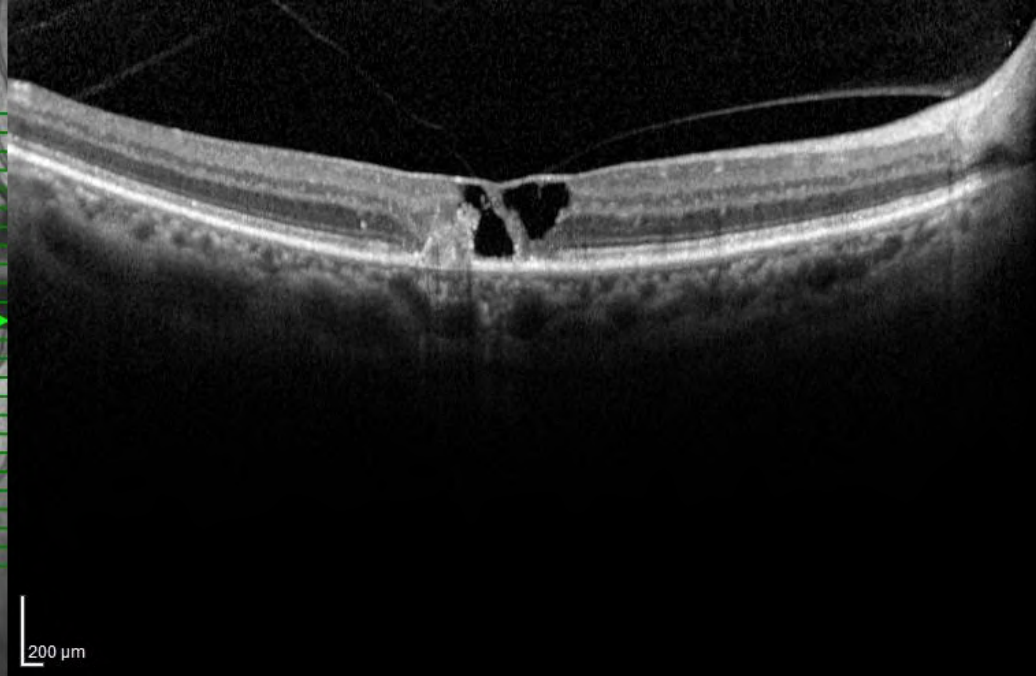
☒ Show Bnd

☒ Angio

☐ OCT

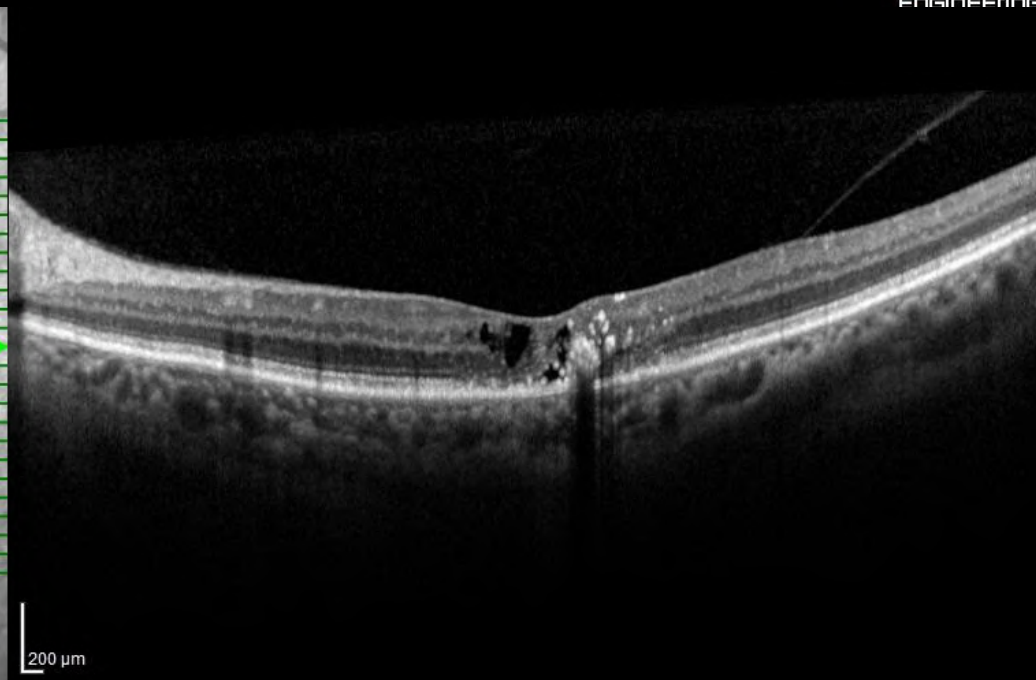
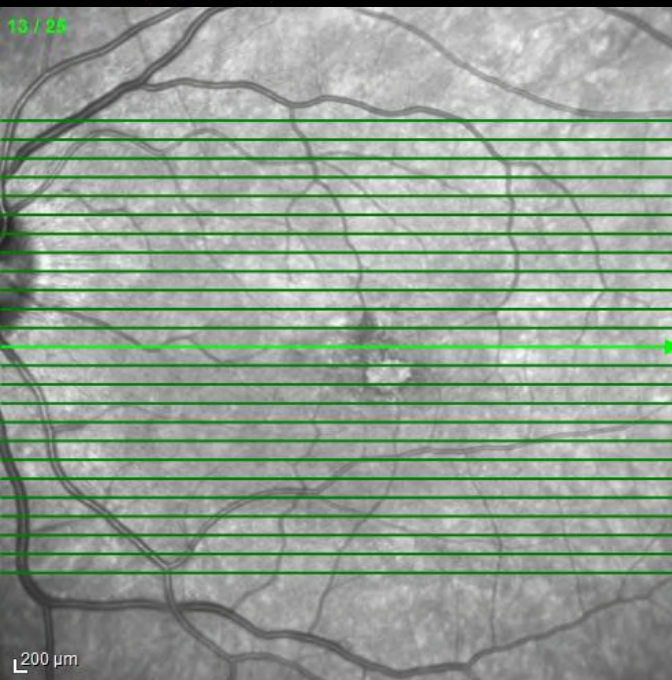
☐ Angio / OCT





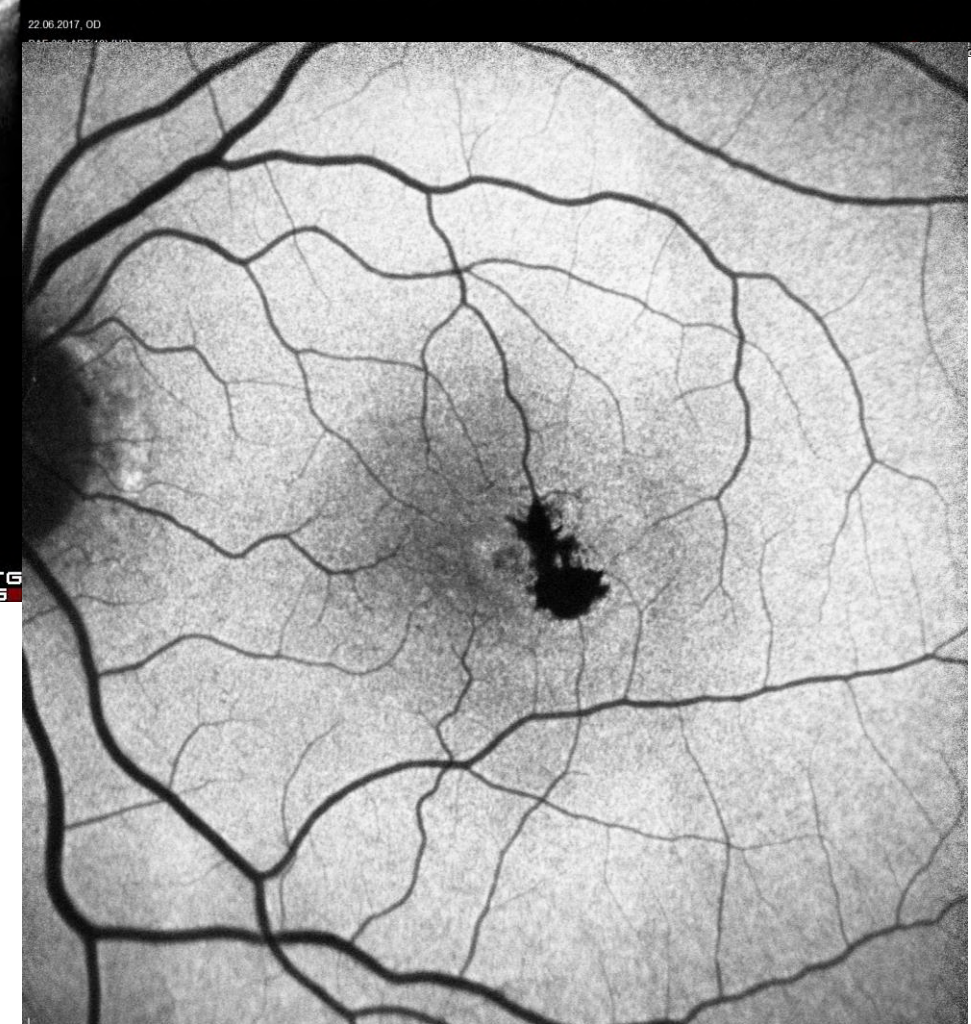
22.06.2017, OD
IR&OCT 30° [HS] ART(12) Q: 34

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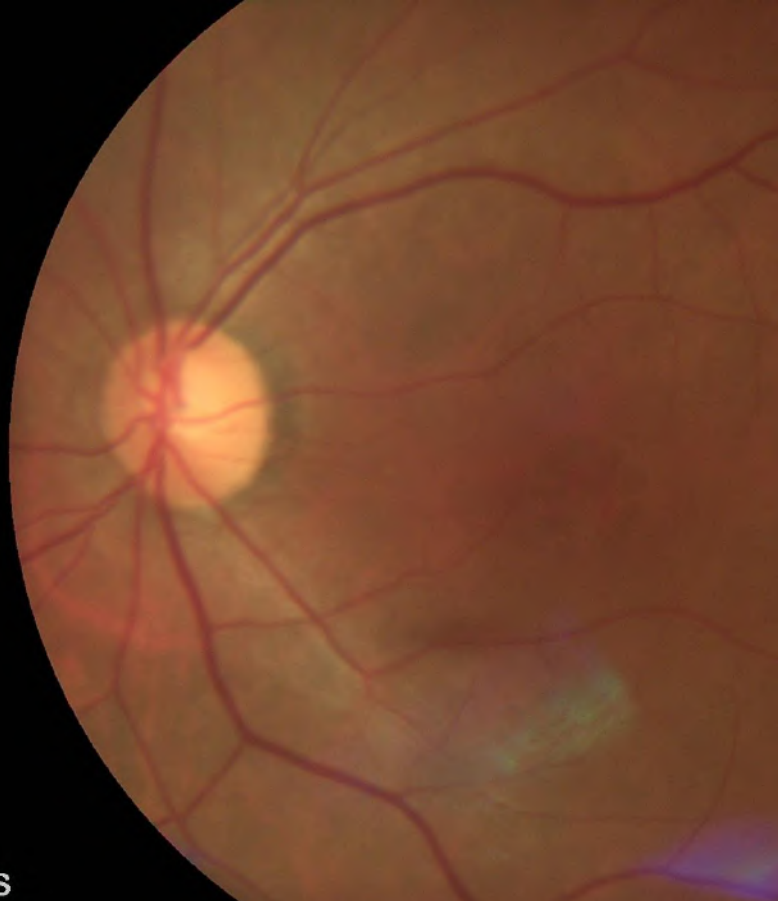


22.06.2017, OS
IR&OCT 30° ART [HS] ART(13) Q: 33

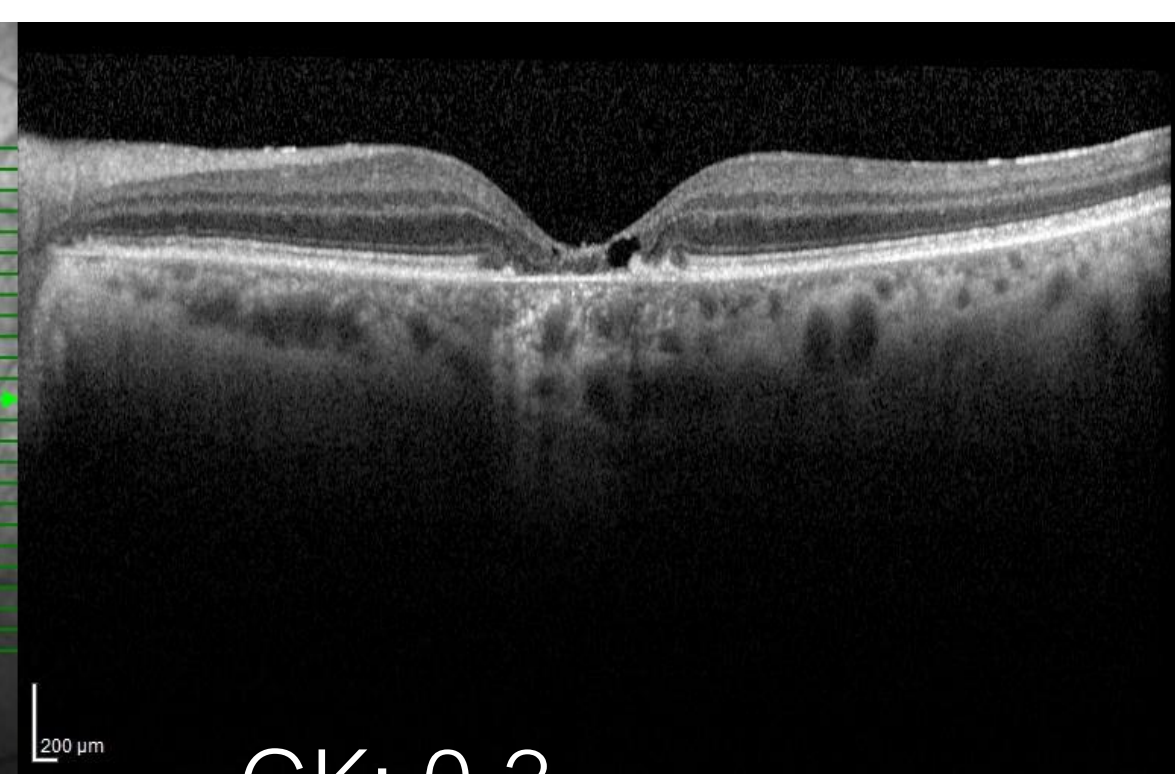
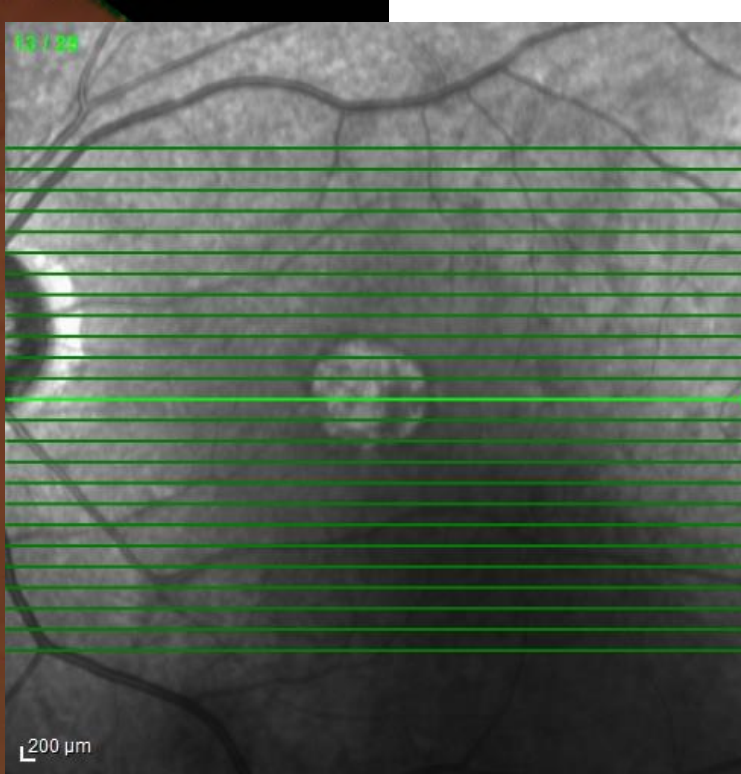
HEIDELBERG
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- 65y, K, GK: 0.3-.0.4



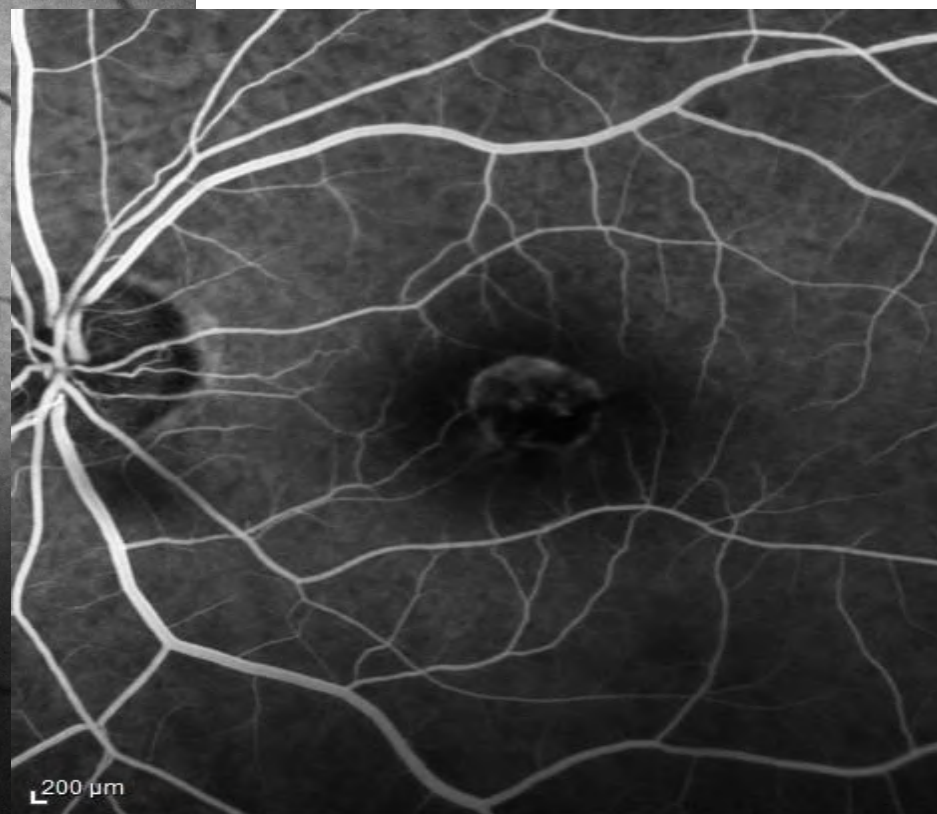
OS



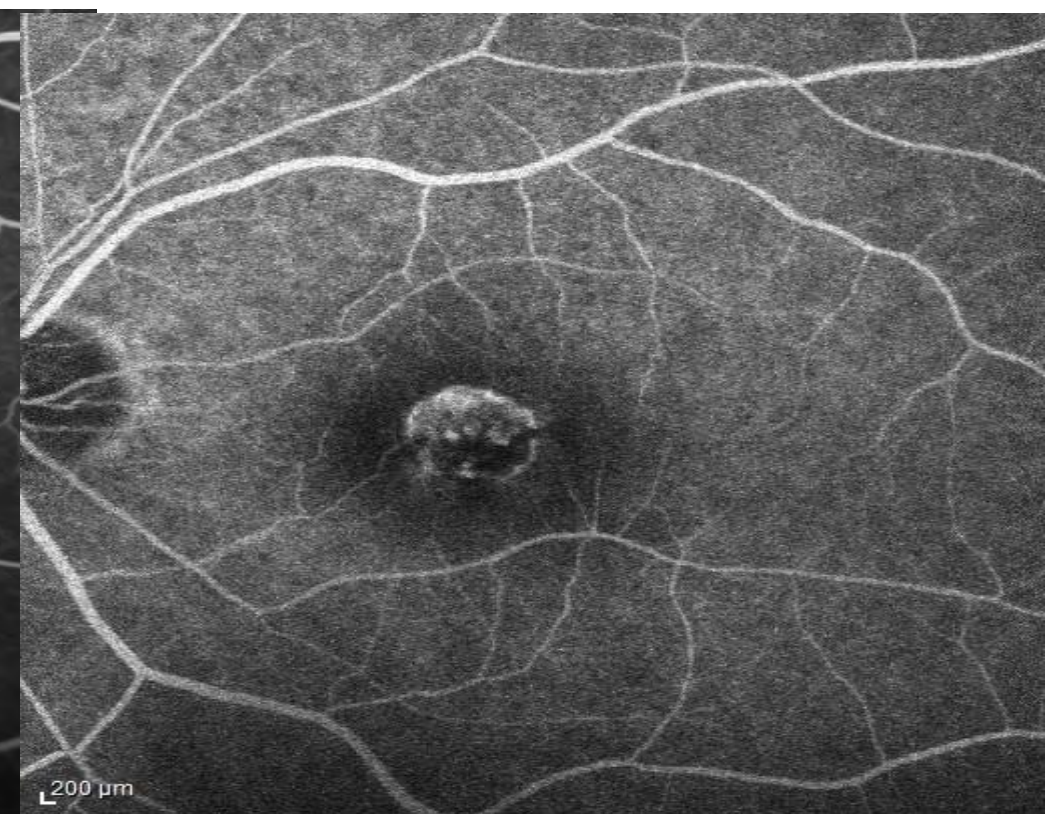
GK: 0.3

25.12.2017, OS
IR&OCT 30° ART [HS] ART(12) Q: 33

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29.12.2017, OS
FA 0:44.87 35° ART(15)



29.12.2017, OS
FA 3:44.91 35°

HEIDELBERG
ENGINEERING

HEIDELBERG
ENGINEERING

25.12.2017, OS
BAF 30° ART(30) [HR]

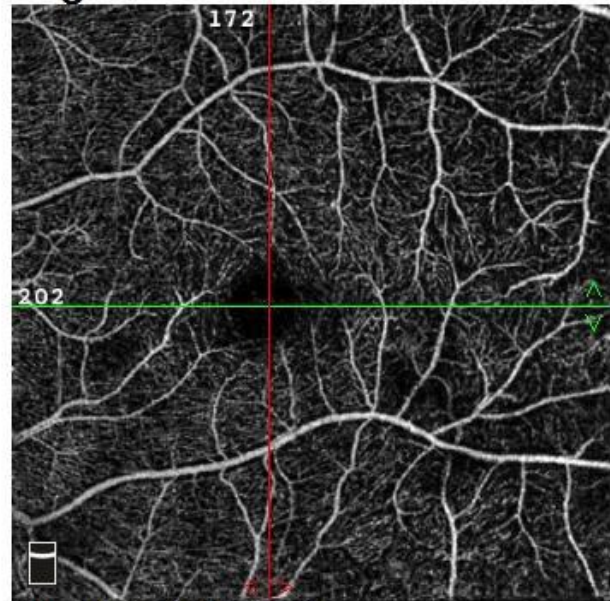
HEIDELBERG
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Angio Retina QuickVue

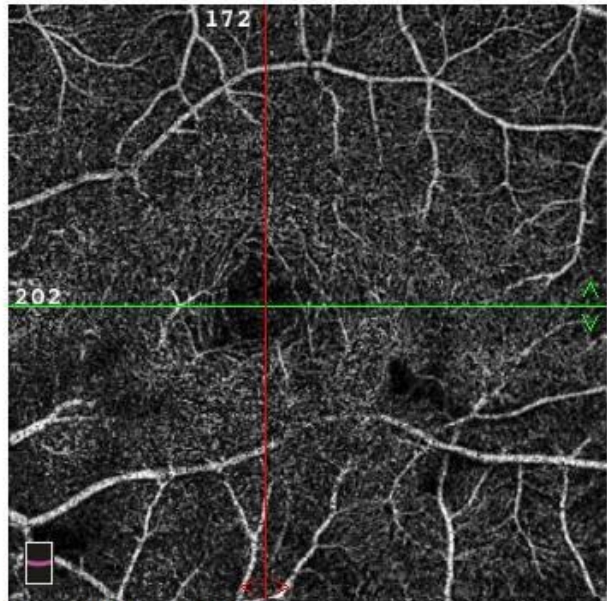
Scan Quality 7/10

6.0 x 6.0 Scan Size (mm)

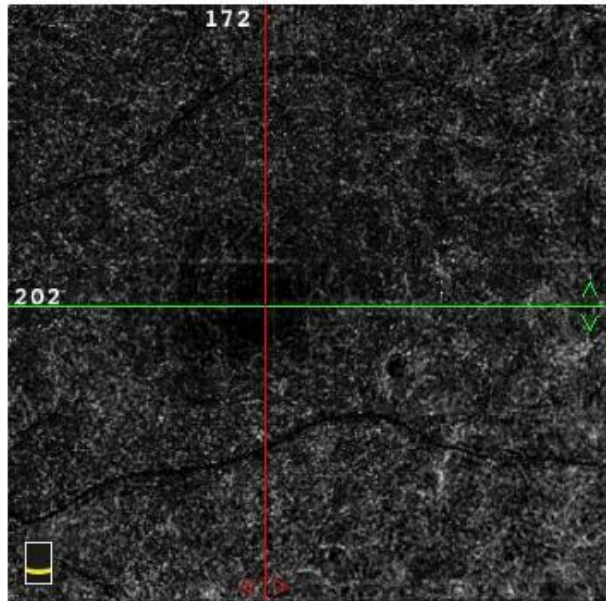
Left / OS



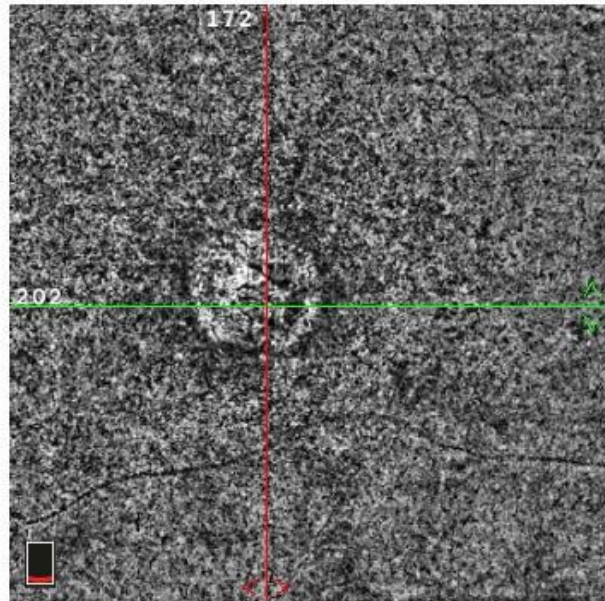
Superficial (ILM - IPL)



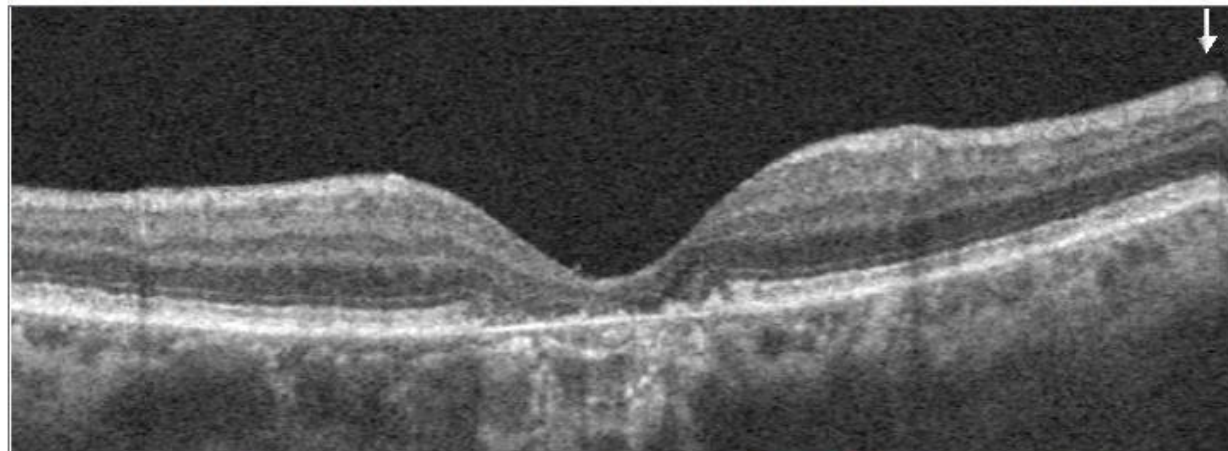
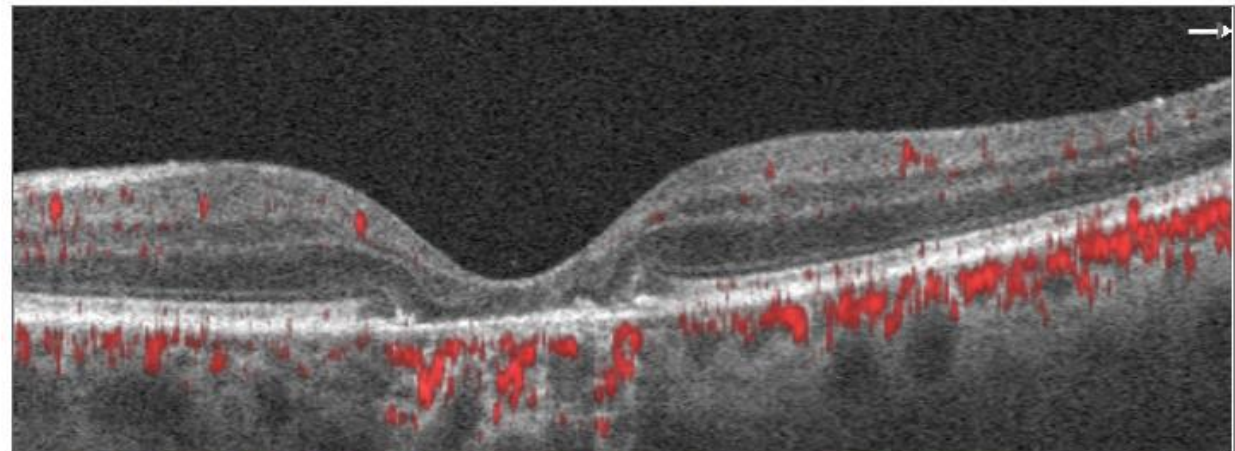
Deep (IPL - OPL)



Outer Retina (OPL - BRM)



Choriocapillaris (BRM - BRM+30µm)



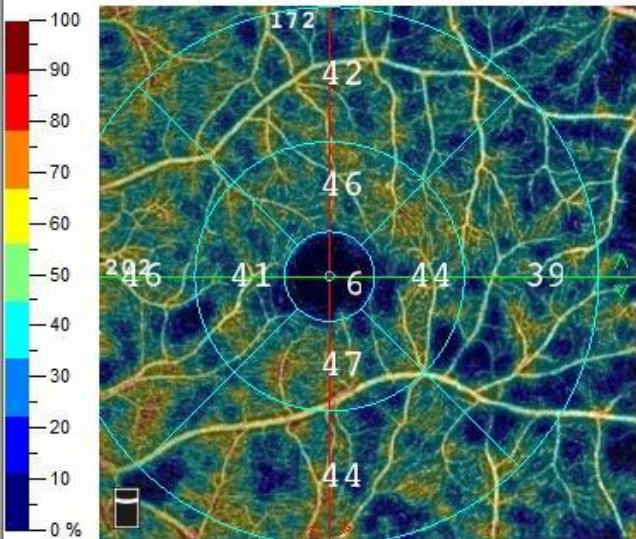
- Exit
- Print
- OverVue

☒ Show Lines

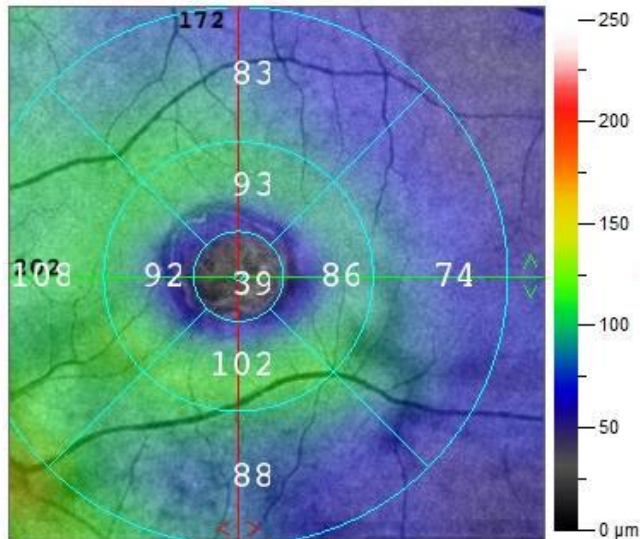
☐ Show Bnd

☒ Angio Overlay

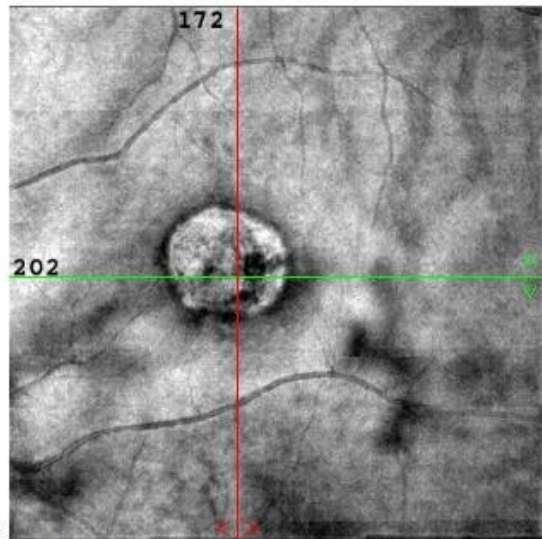
☒ Auto Zoom



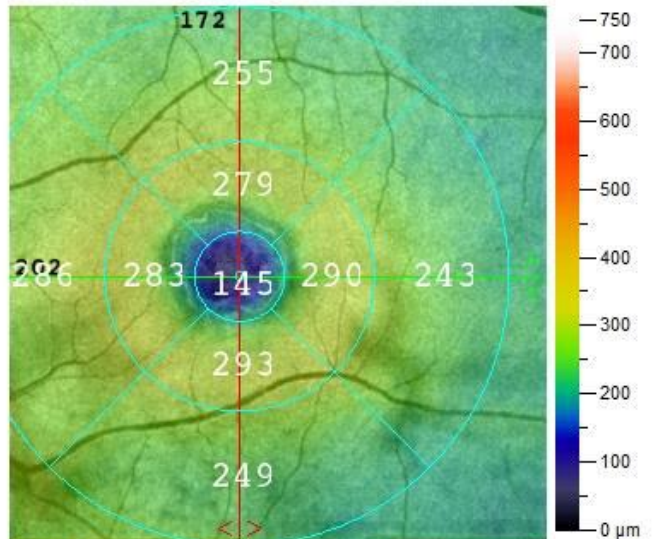
Vessel Density (Superficial)



Inner Thickness (ILM - IPL)



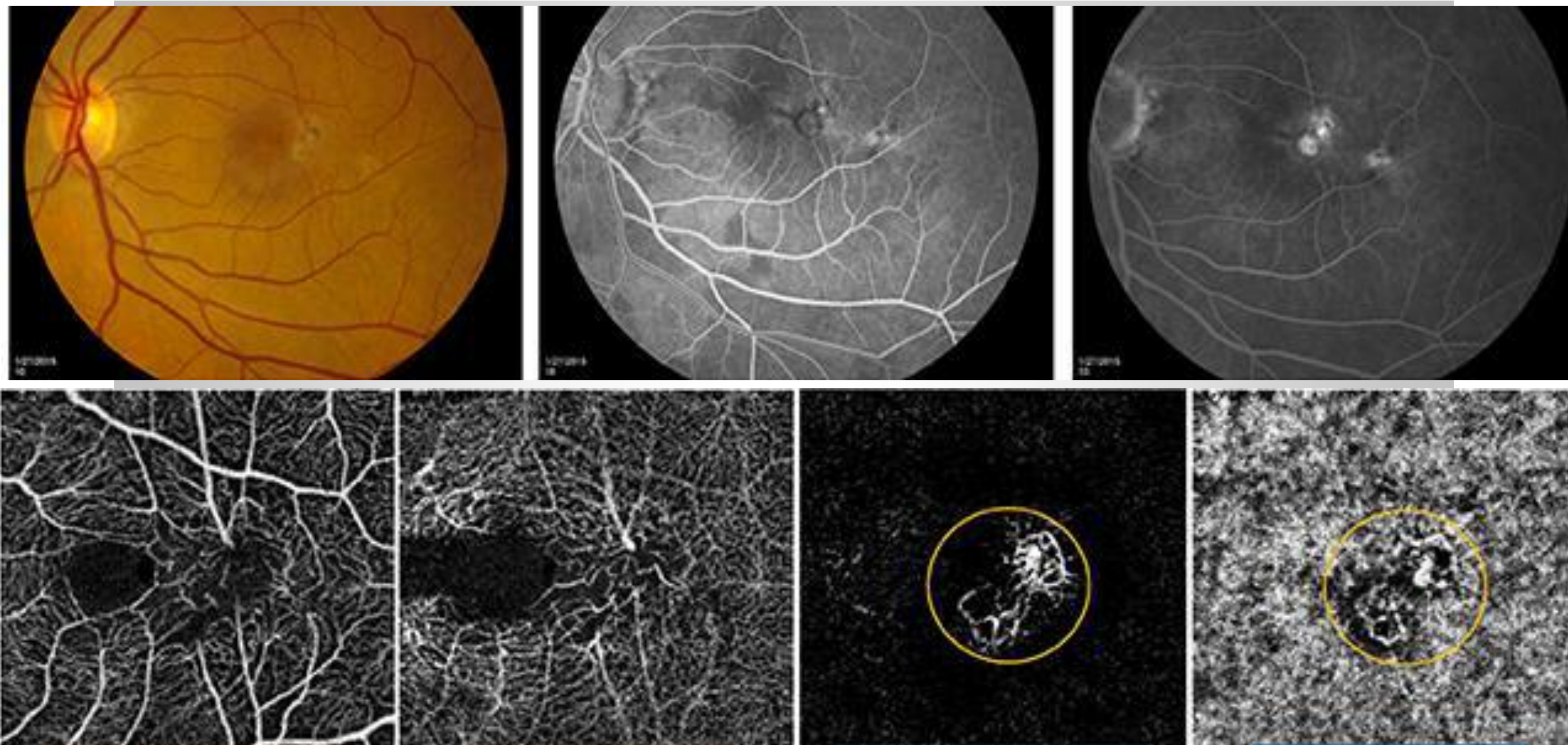
SLO



Full Thickness (ILM - RPE)

- Thickness
- ☒ Full
- ☐ ILM Elevation
- ☒ ETDRS

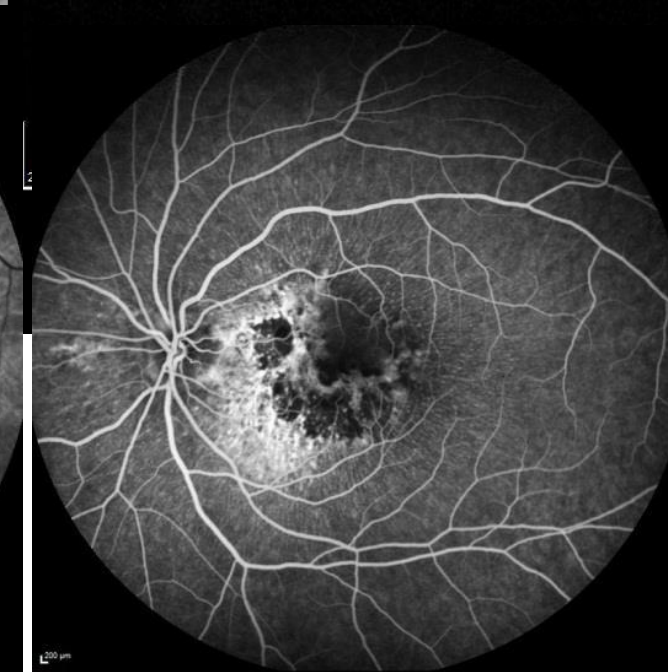
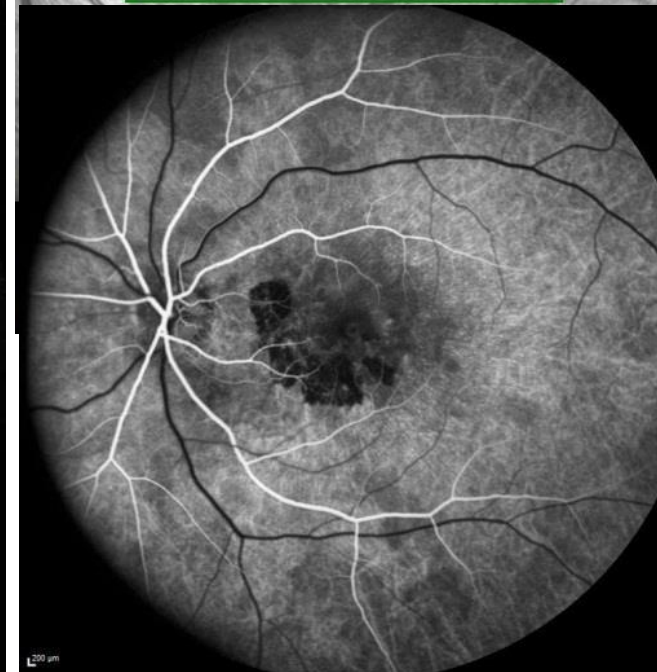
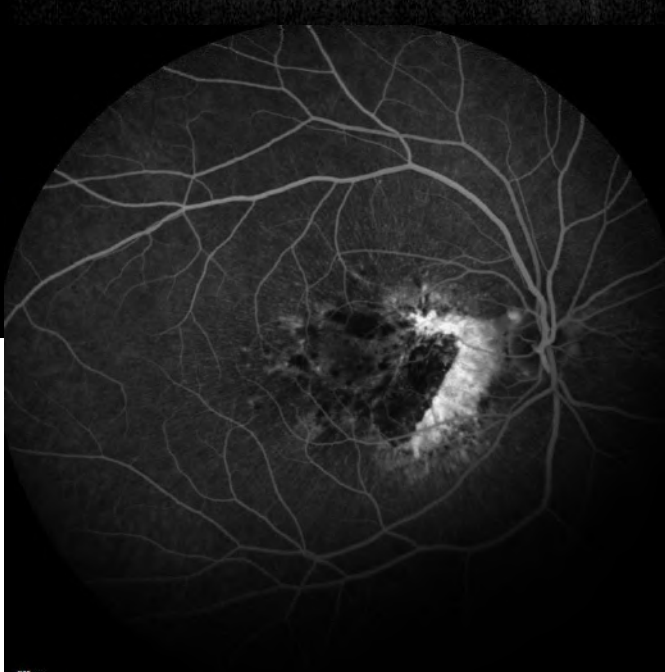
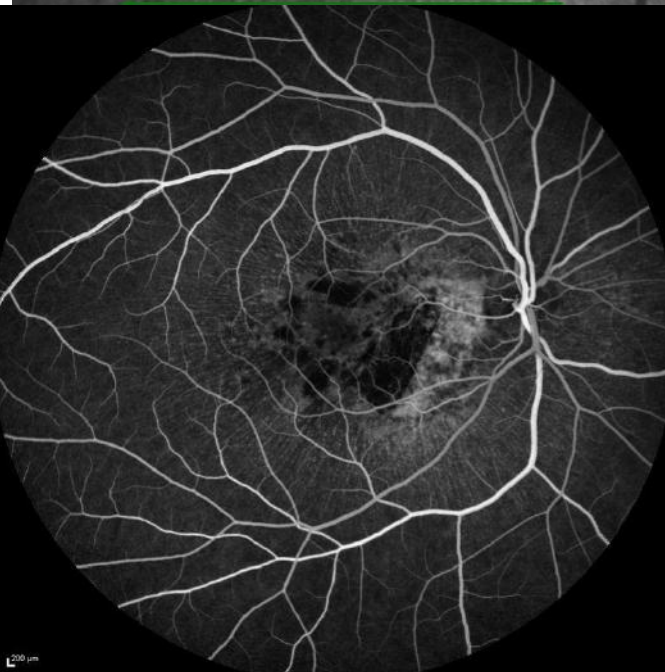
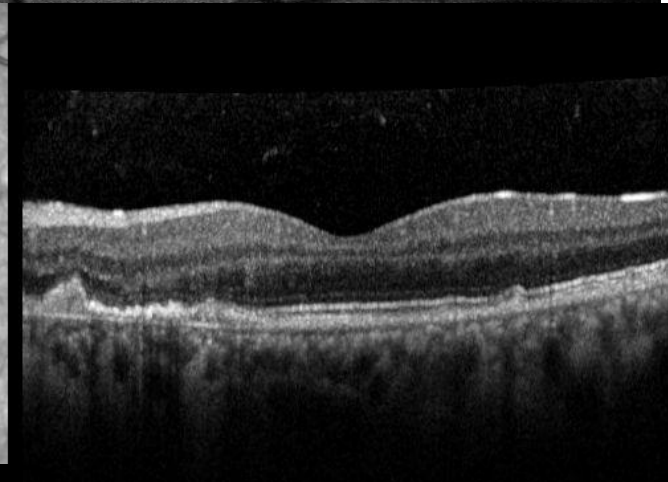
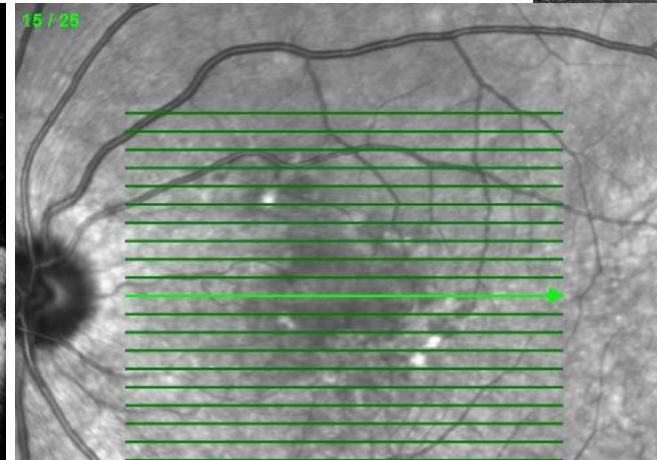
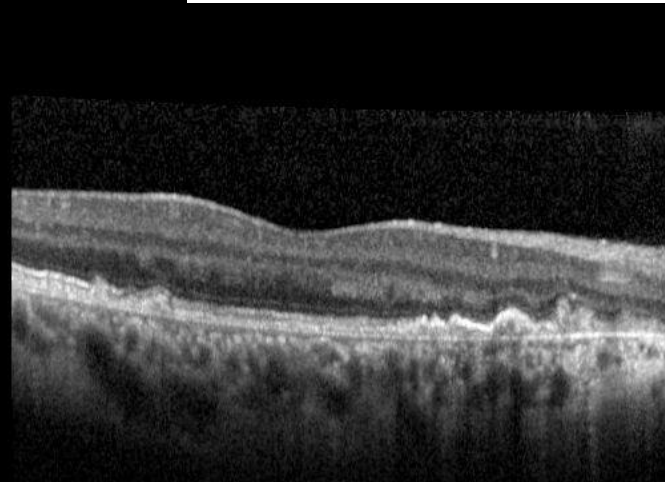
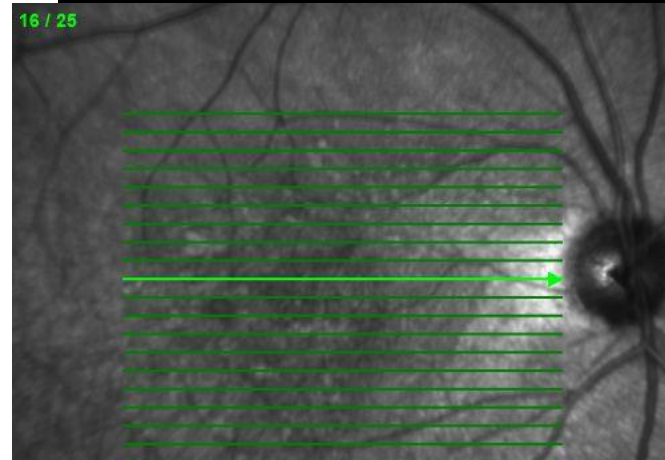
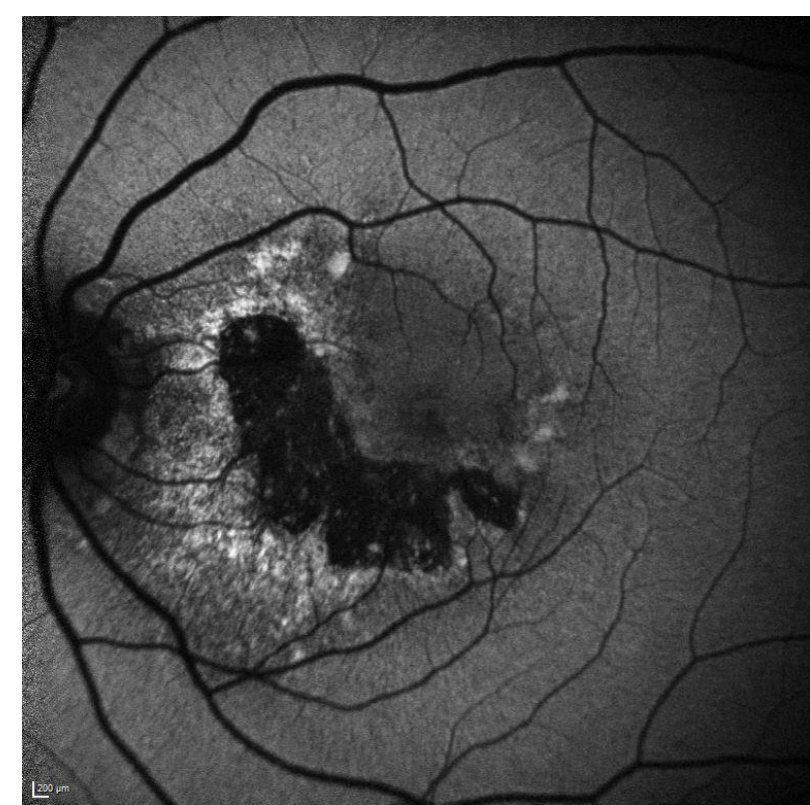
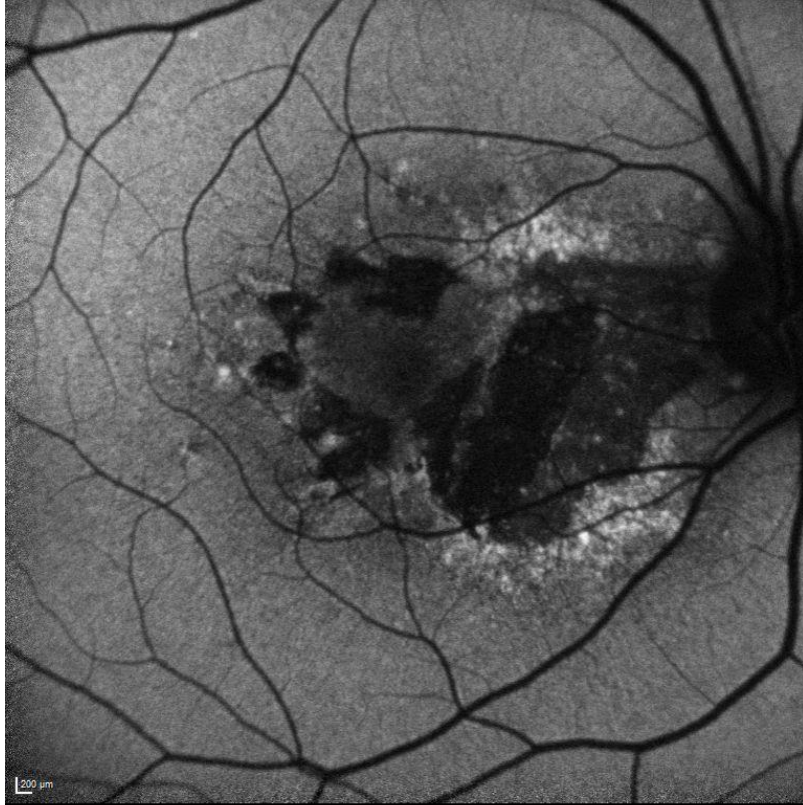
MAK TEL - KNV

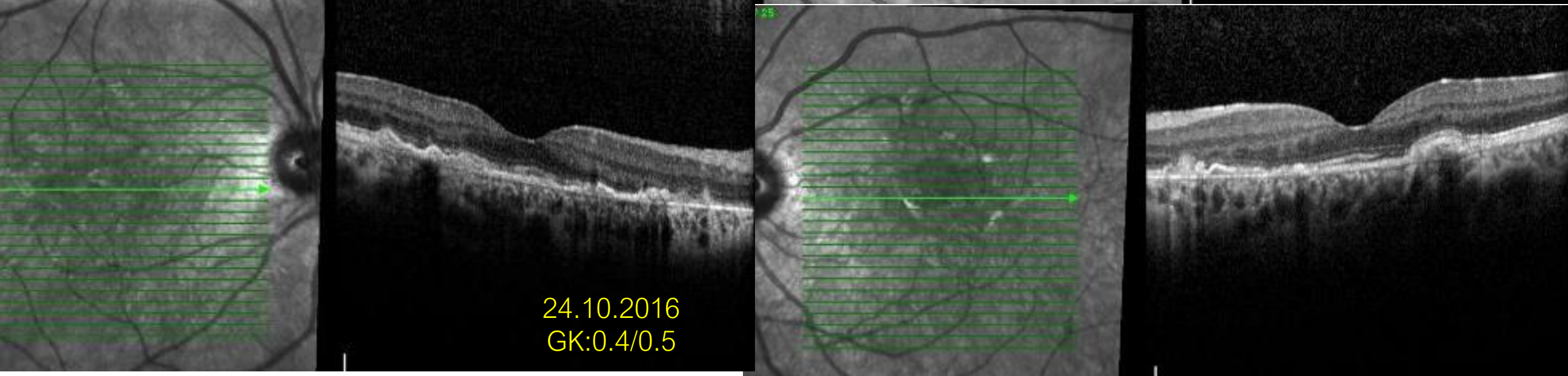
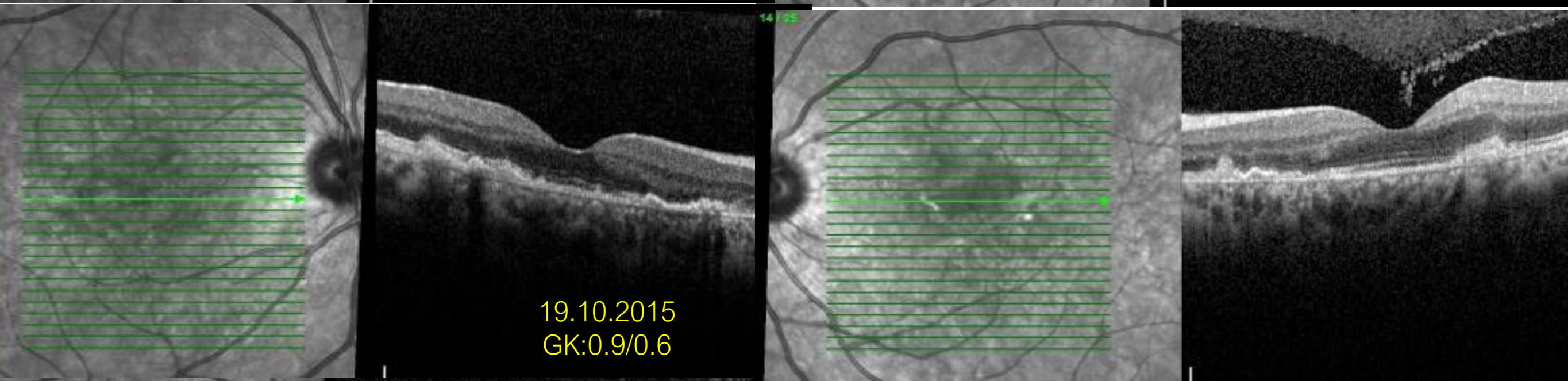
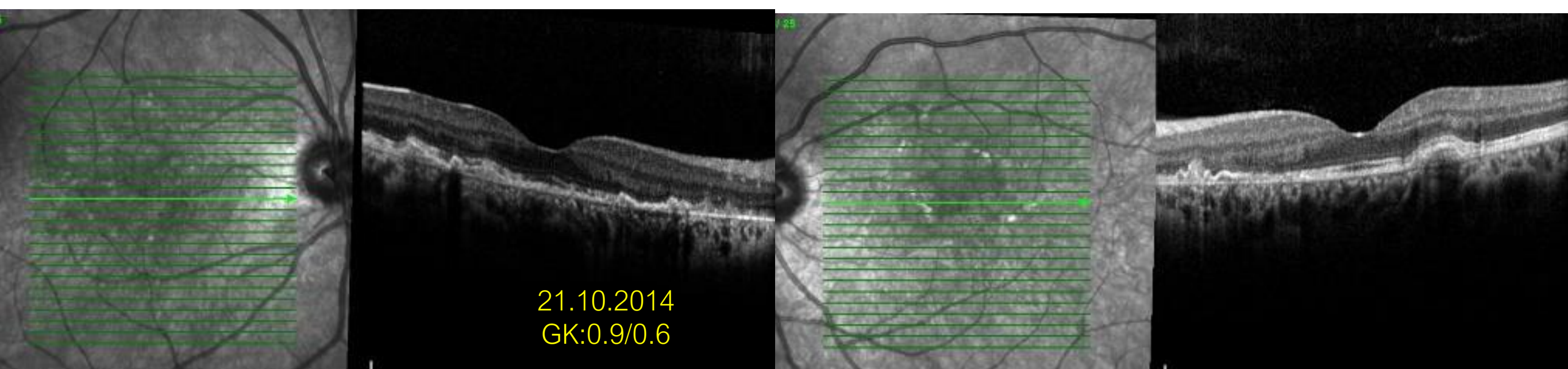


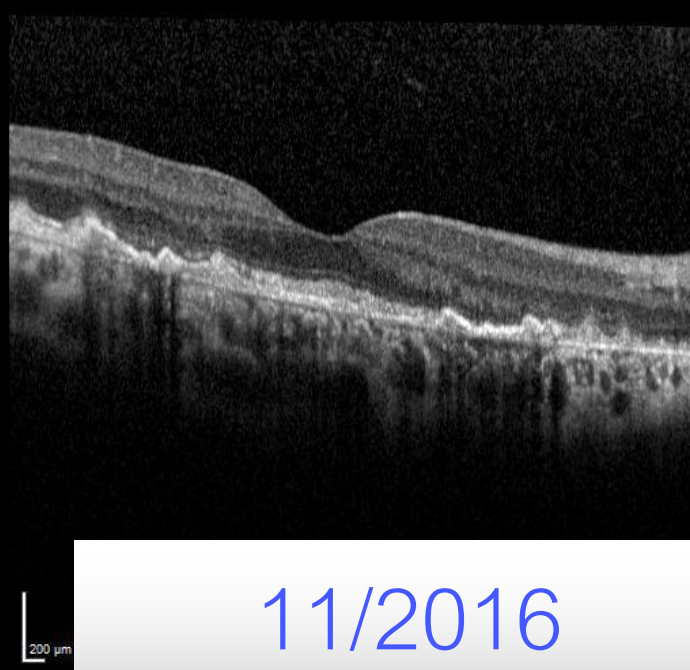
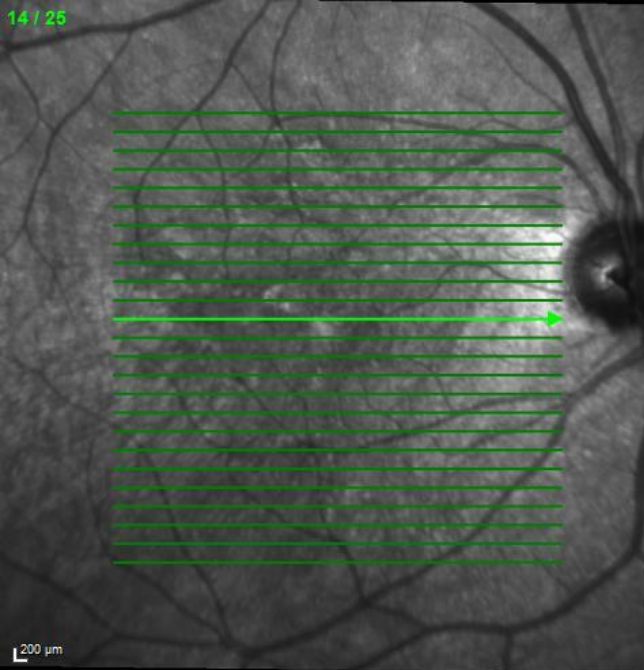
33y K, solda görmede azalma
GK: Tam/Tam

- Koni distrofisi tanısı almış
- Baba ve kuzende de görme sorunu

2013
GK: 1.0/1.0

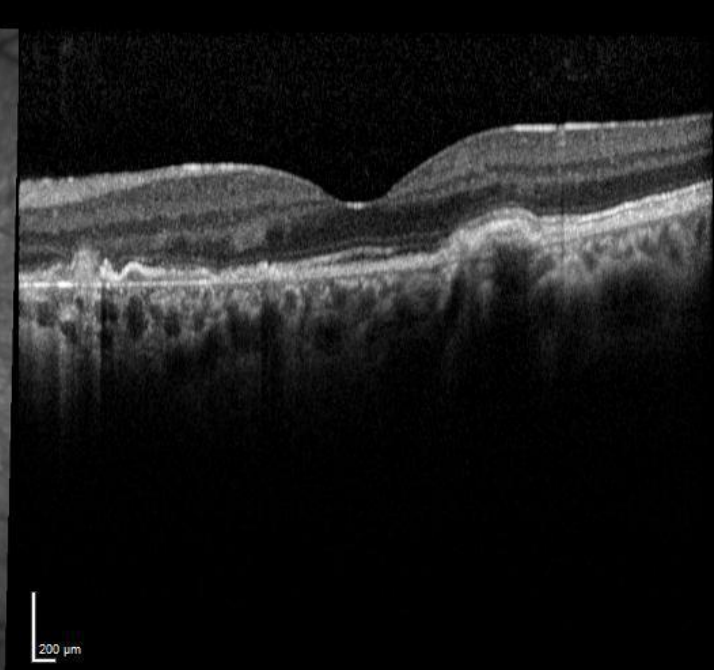
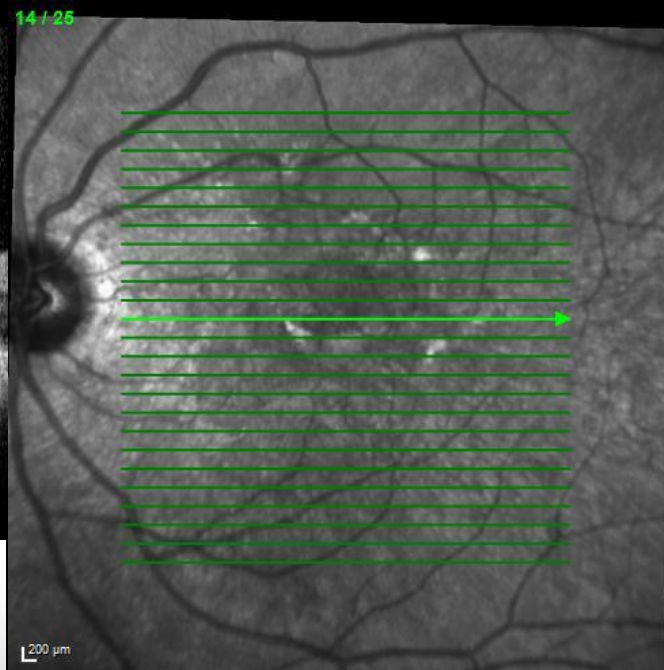






11/2016
GK: 0.2/1.15

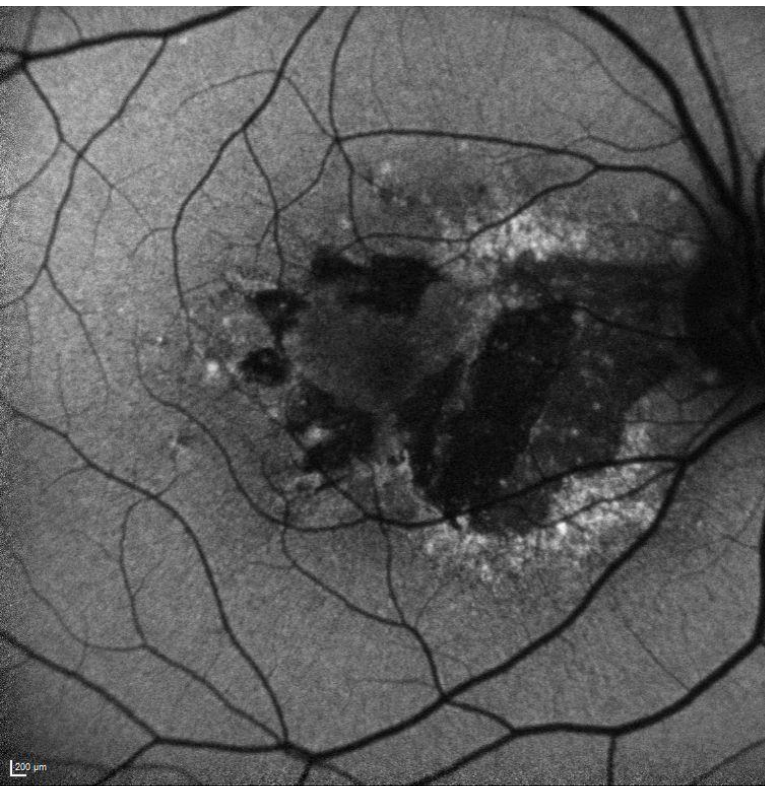
24.11.2016, OD
IR&OCT 30° ART [HS] ART(10) Q: 28



24.11.2016, OS
IR&OCT 30° ART [HS] ART(11) Q: 31

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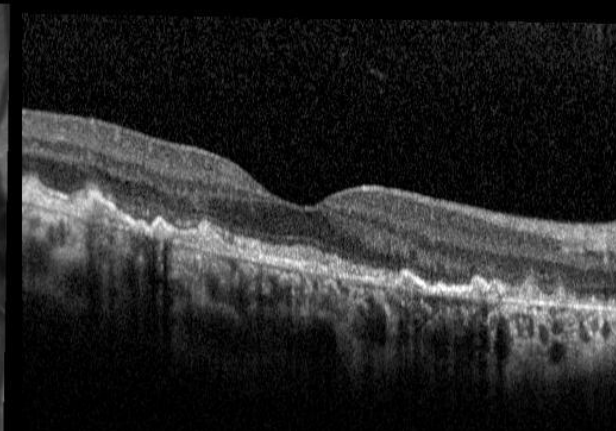
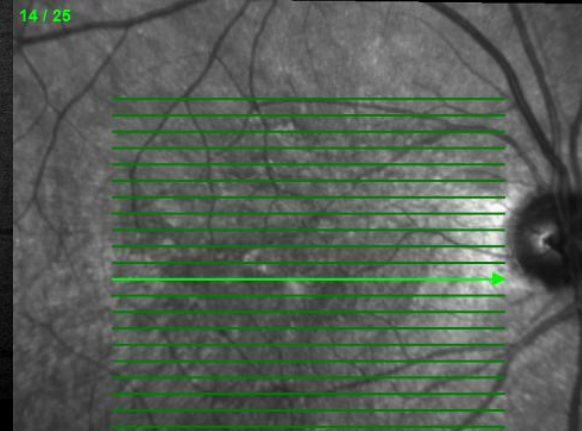
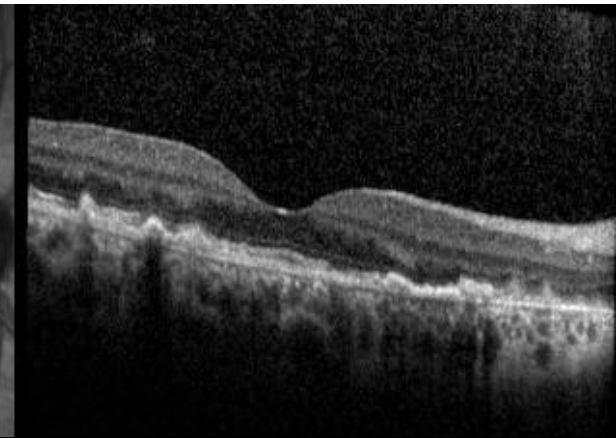
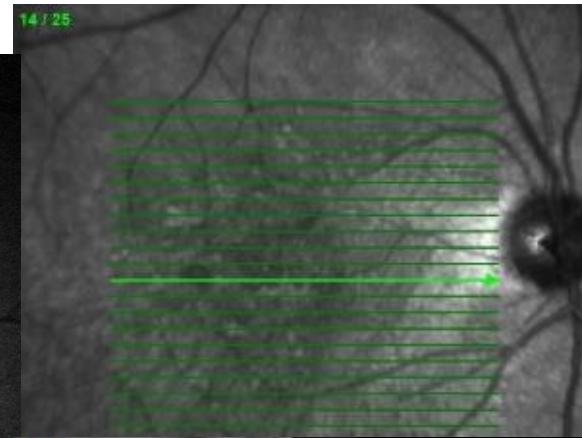




23.12.2013, OD
BAF 30° ART(13)



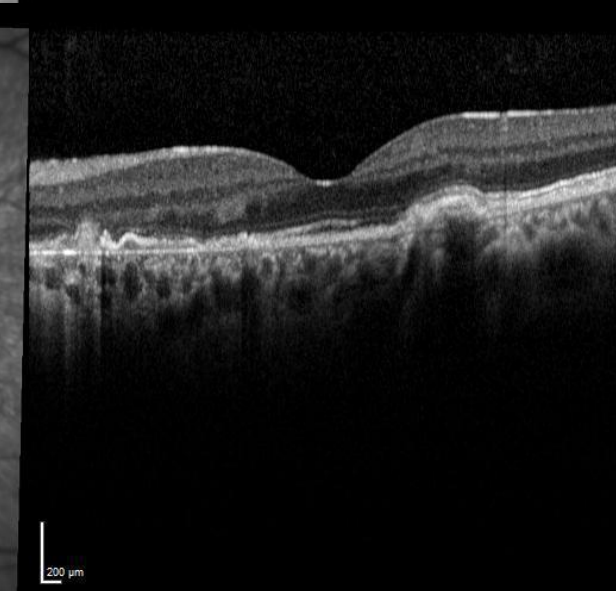
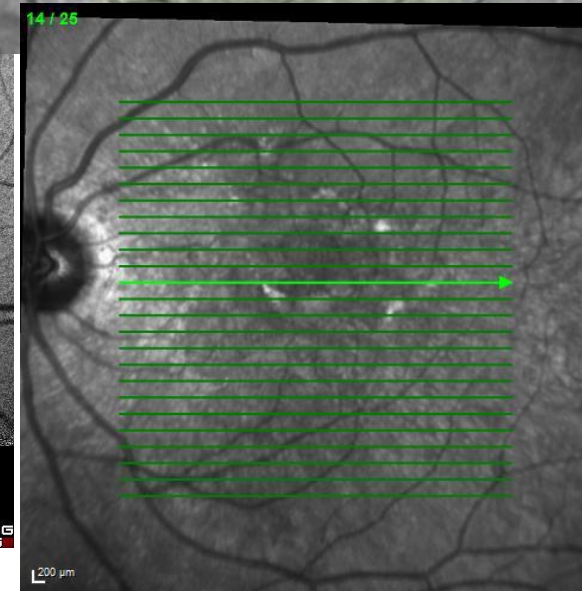
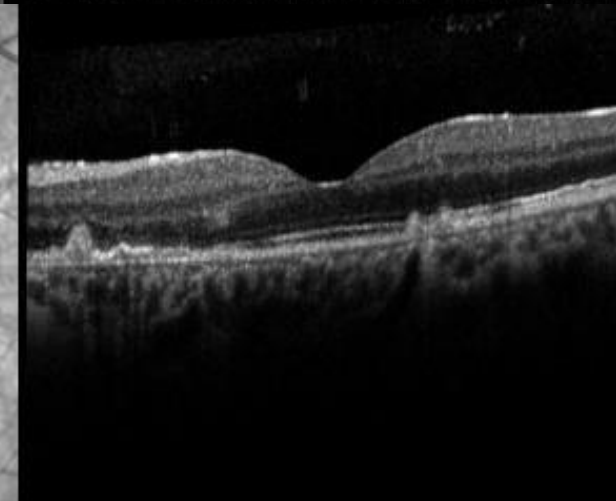
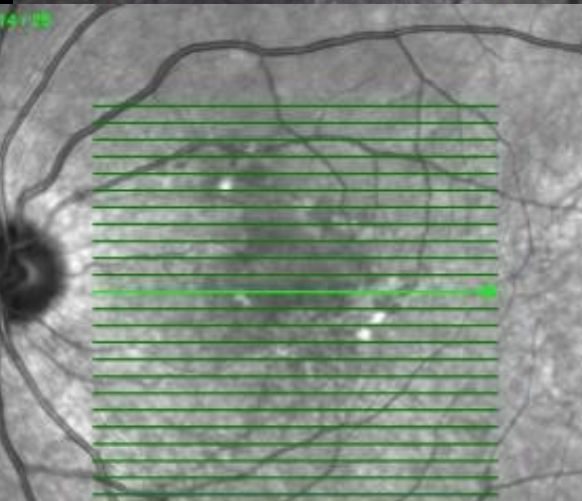
23.12.2013, OS
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ENGINEERING BAF 30° ART(17)



28.11.2016, OD
BAF 30° ART(11)

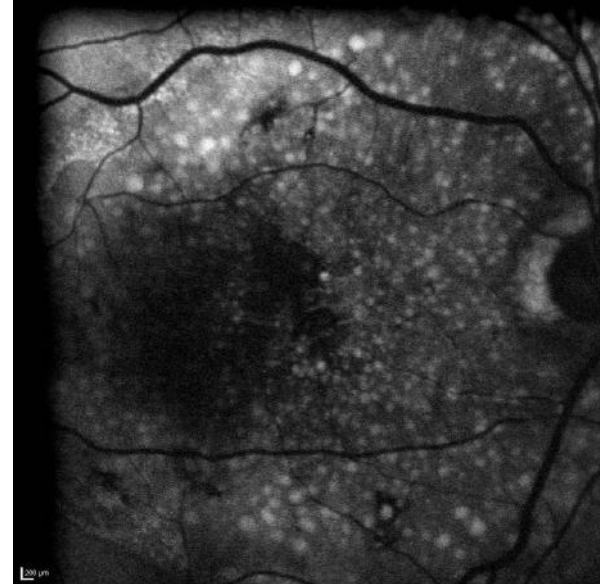


28.11.2016, OS
HEIDELBERG
ENGINEERING BAF 30° ART(12)



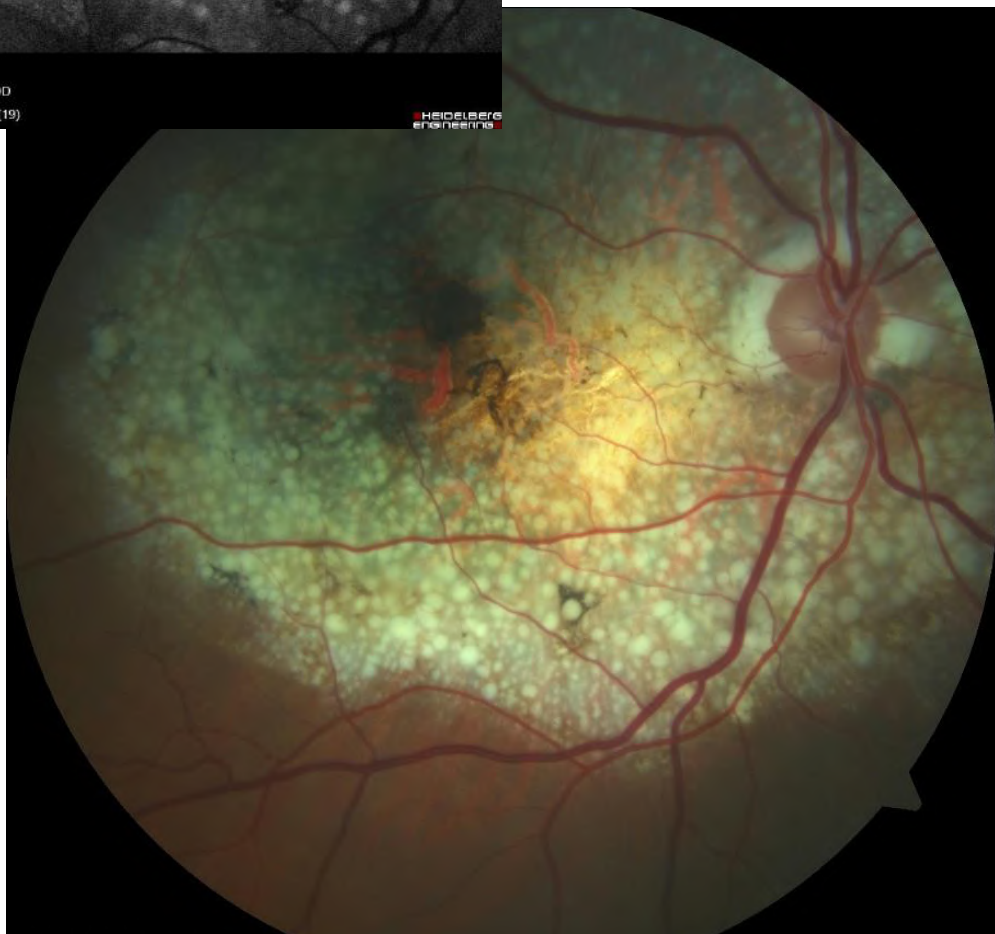
24.11.2016, OS

55y baba, GK:0.1/0.05,
15 yıldır görme azlığı



28.11.2016, OD
BAF 30° ART(19)

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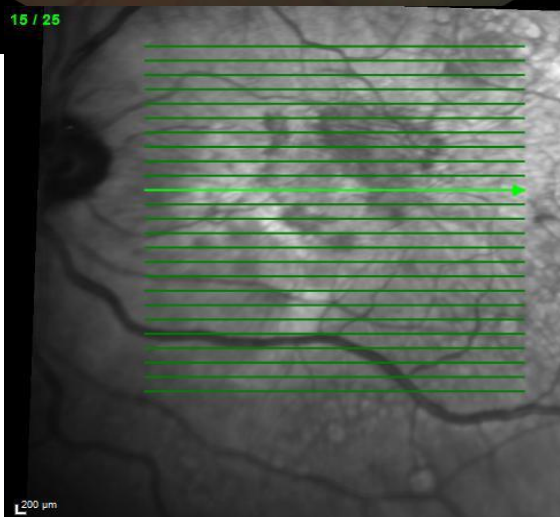


15.02.2017, OS
BAF 30° ART(10)

HEIDELBERG
ENGINEERING

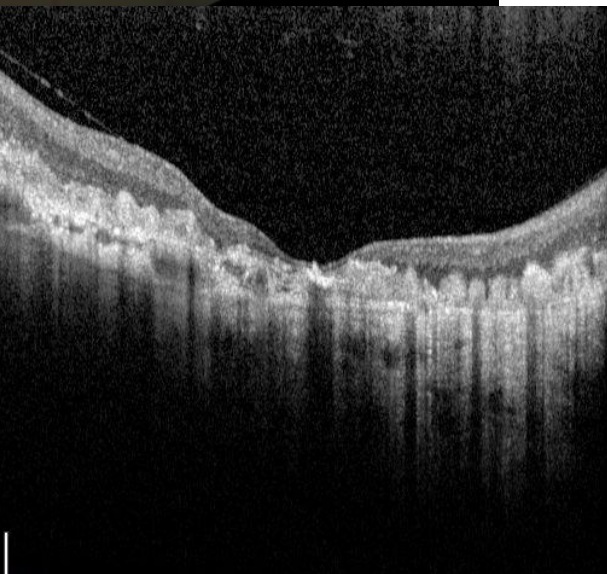
15/02/2017 13:16:24.5

15 / 25



15.02.2017, OS
IR&OCT 30° ART [HS] ART(10) Q: 19

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TANI: Dominant Drusen Sendromu, Familial Drusen

- Doyne Honeycomb Retinal Distrofi=Malattia Leventinese
- 1899, İngiltere, Doyne tarafından
- 1925, İsviçre Leventine Eyaleti
- Sıklıkla 4-5. dekat (nadiren geç çocukluk döneminde)
- Multiple, küçük, yuvarlak sarı-beyaz drusen
- Makula & makula OD arası bölge (nazal makulada mozaik/bal peteği görünümü radyal patern)
- Retinal atrofi ile giden parapapiller drusen, Makulada pigmente skar, Simetrik tutulum
- FBLN (EFEM1) gen

HEKİMLİK BİR SANATTIR...

