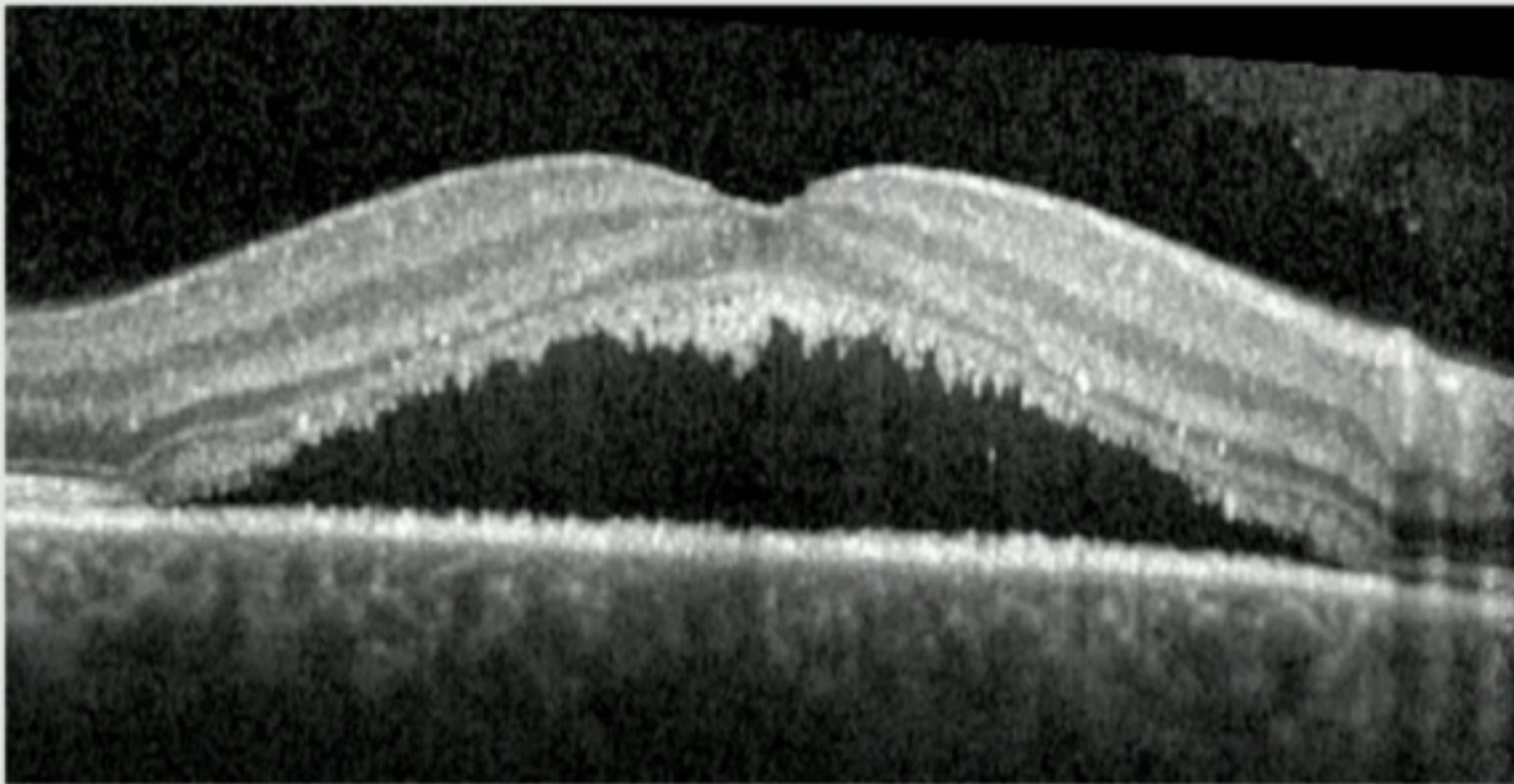


Beware of the broad differential diagnosis

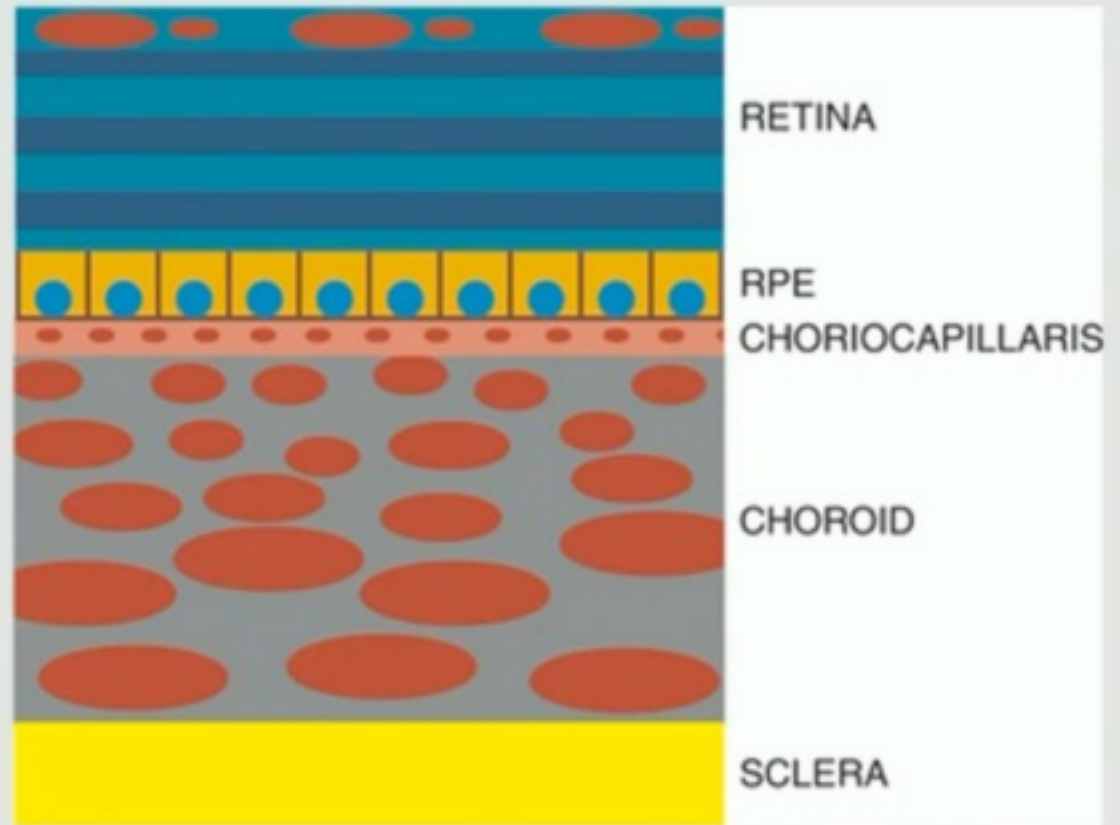


Serous subretinal fluid (SRF) in the macula: an experience- and evidence-based overview

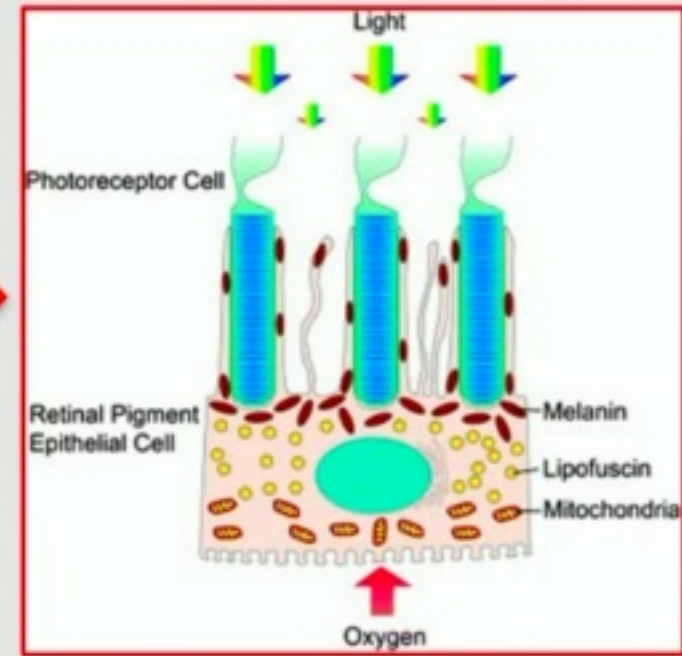
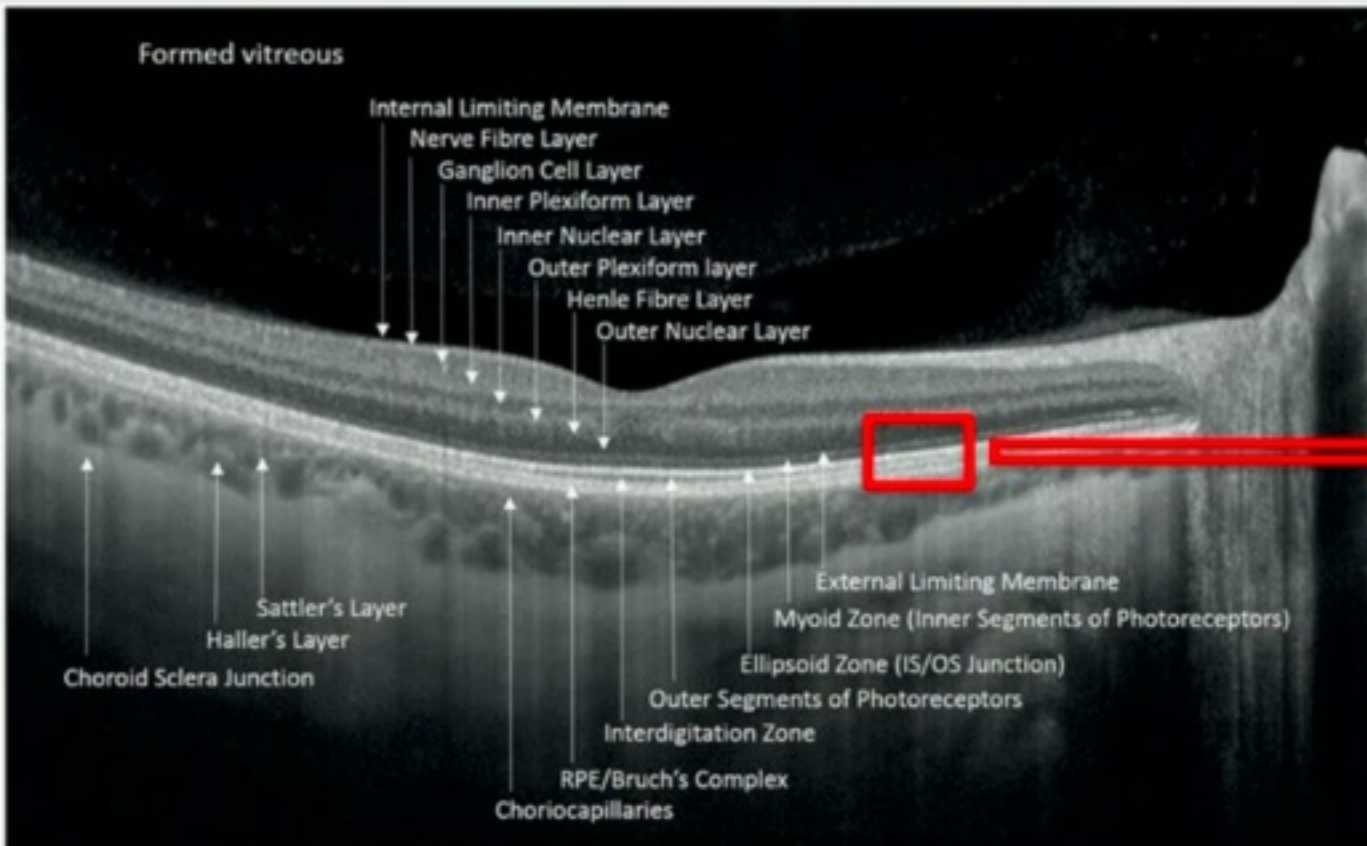


The vulnerable macula...

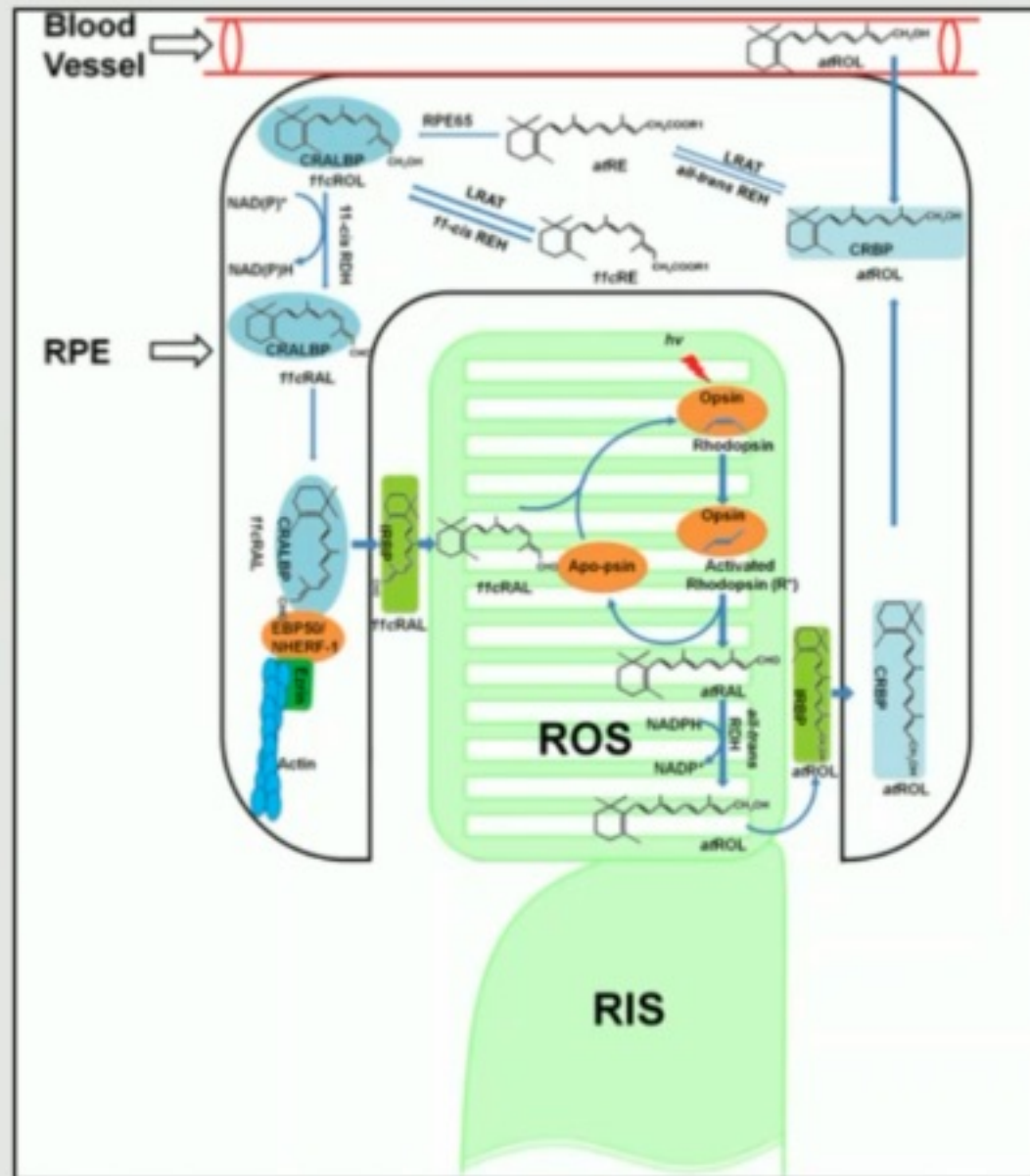
... is different from the (mid)peripheral retina
in neuroretina, RPE, Bruch, and choroid



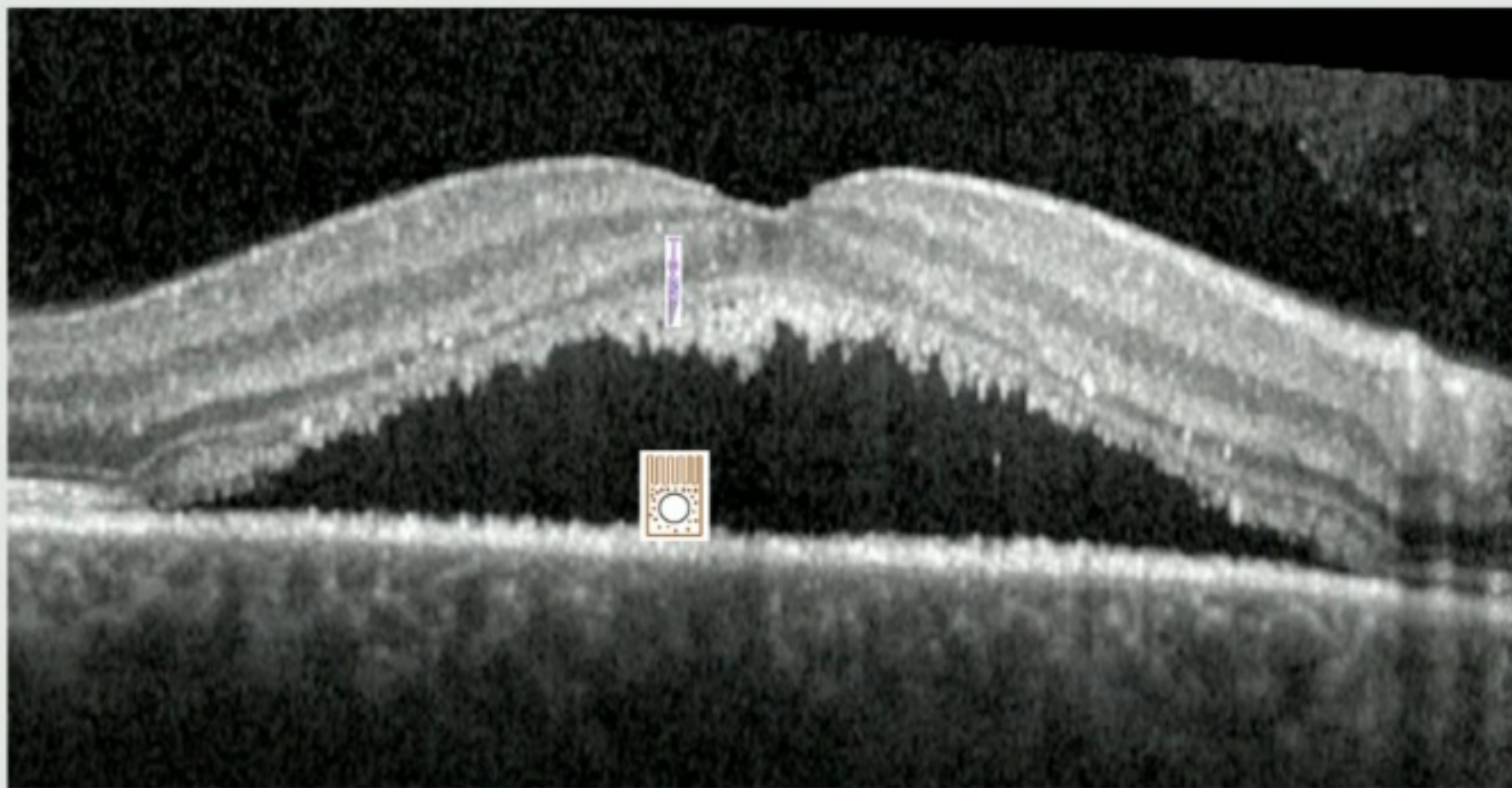
'Cellular symbiosis'



The visual cycle: it takes two to tango



Serous SRF in the macula

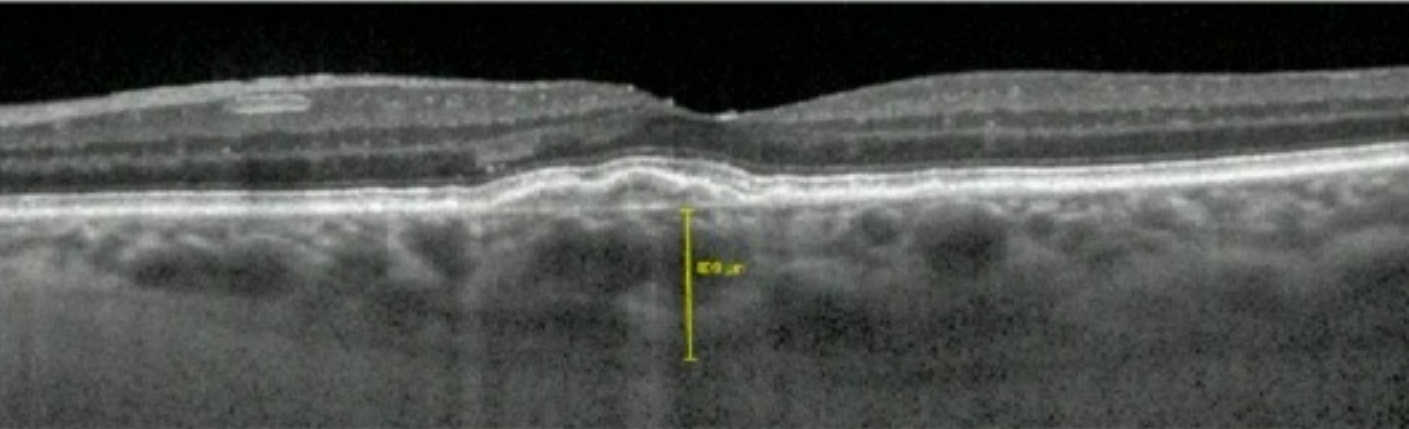
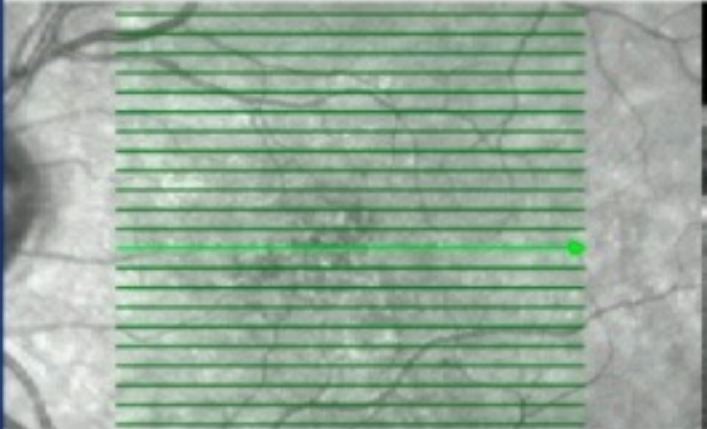
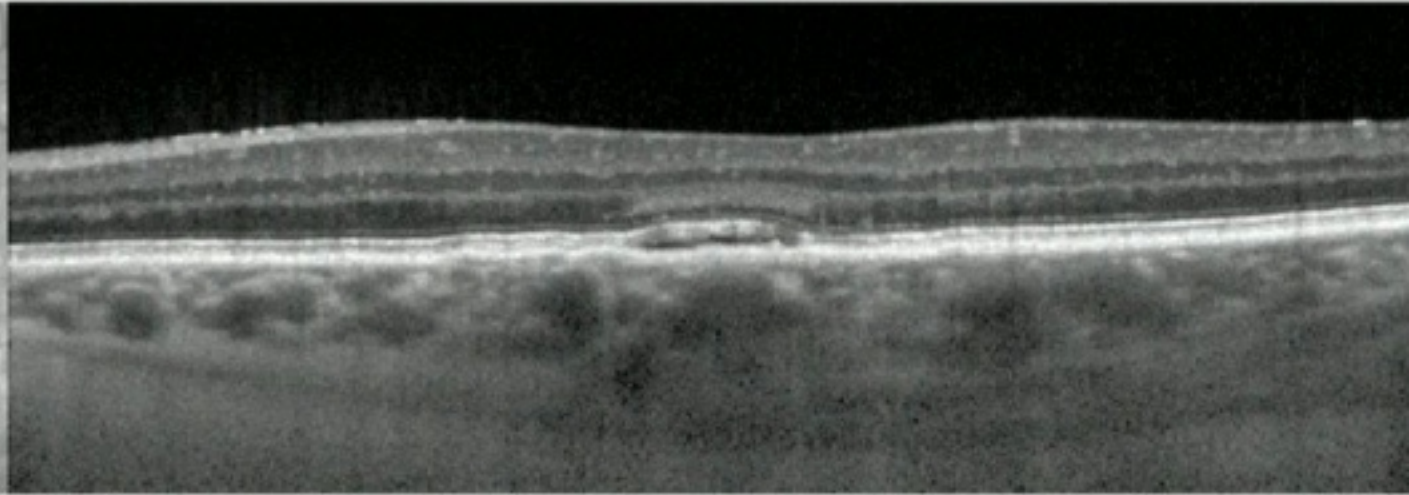
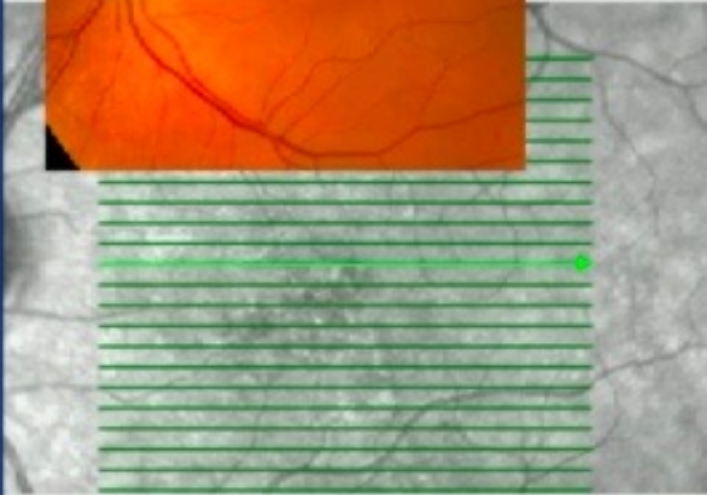


Serous SRF in the macula:
a broad differential diagnostic spectrum

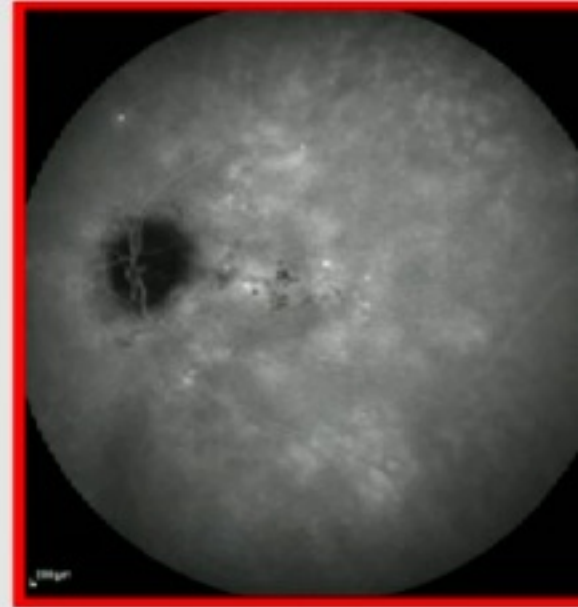
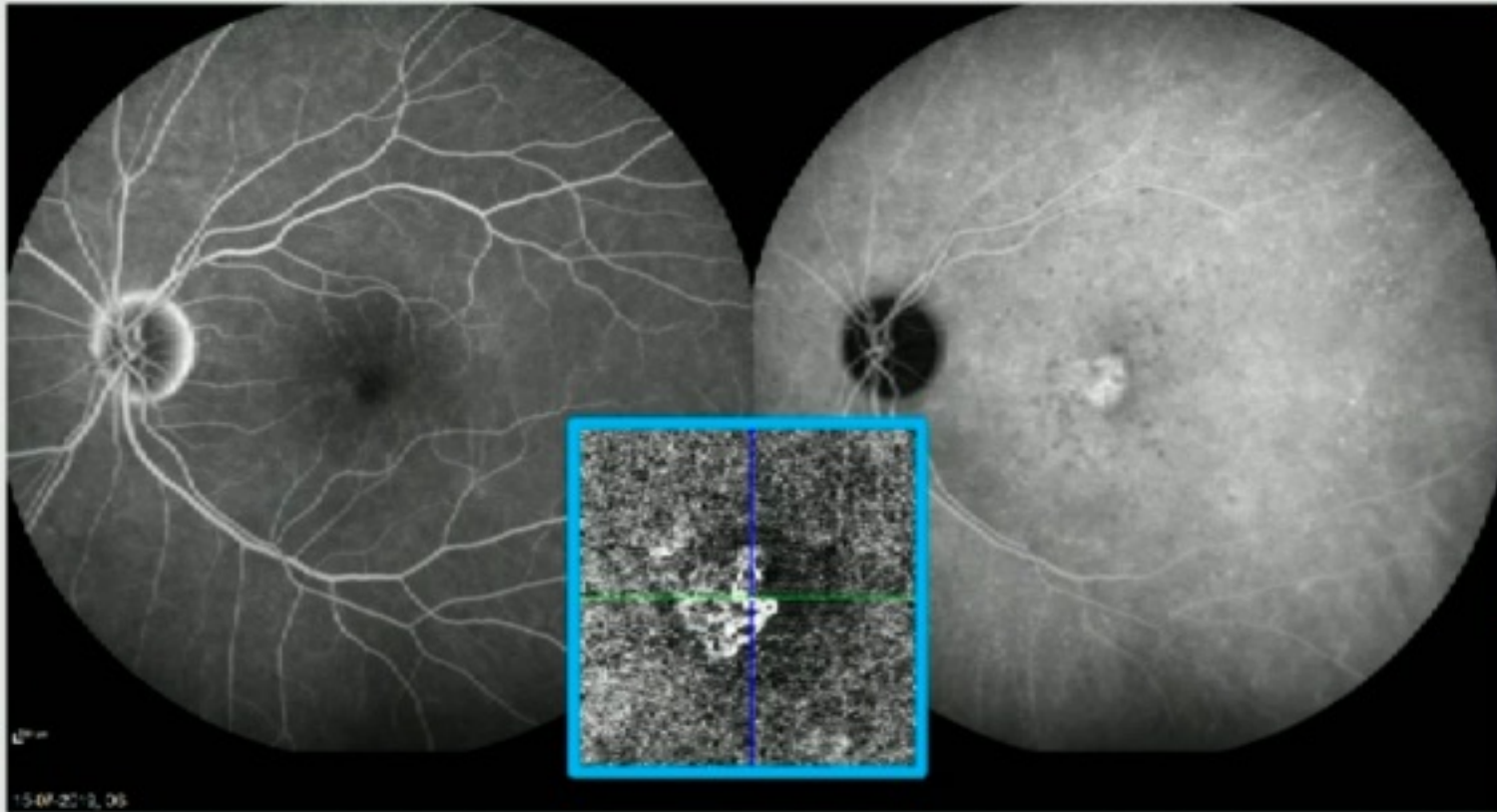
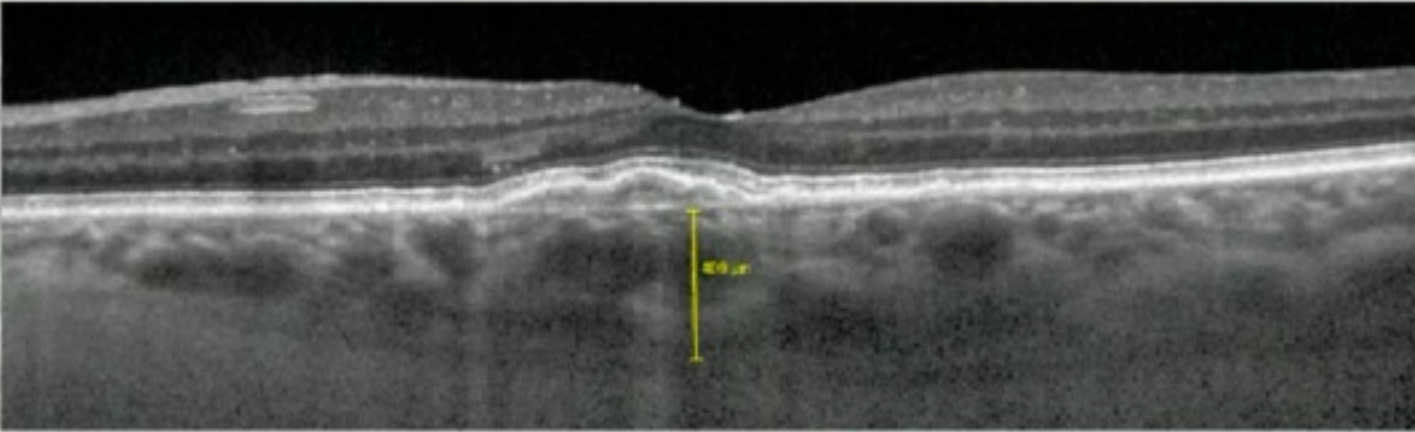
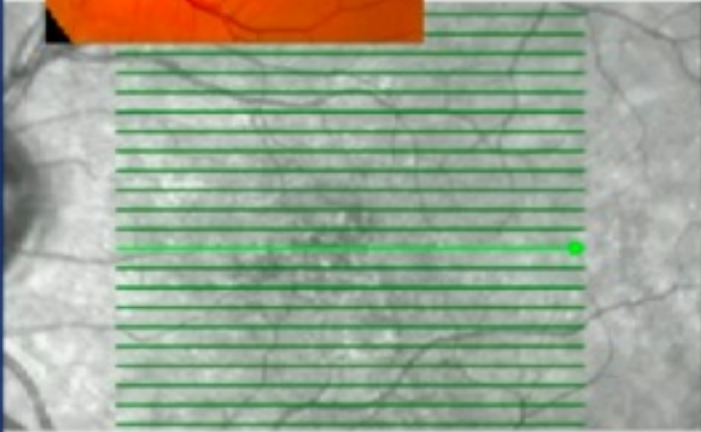
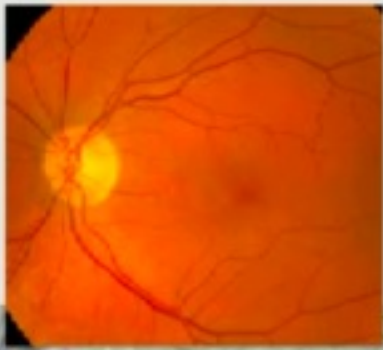
Differentiating serous SRF in macula: spectrum of differential diagnostic categories

1. Central serous chorioretinopathy

#2

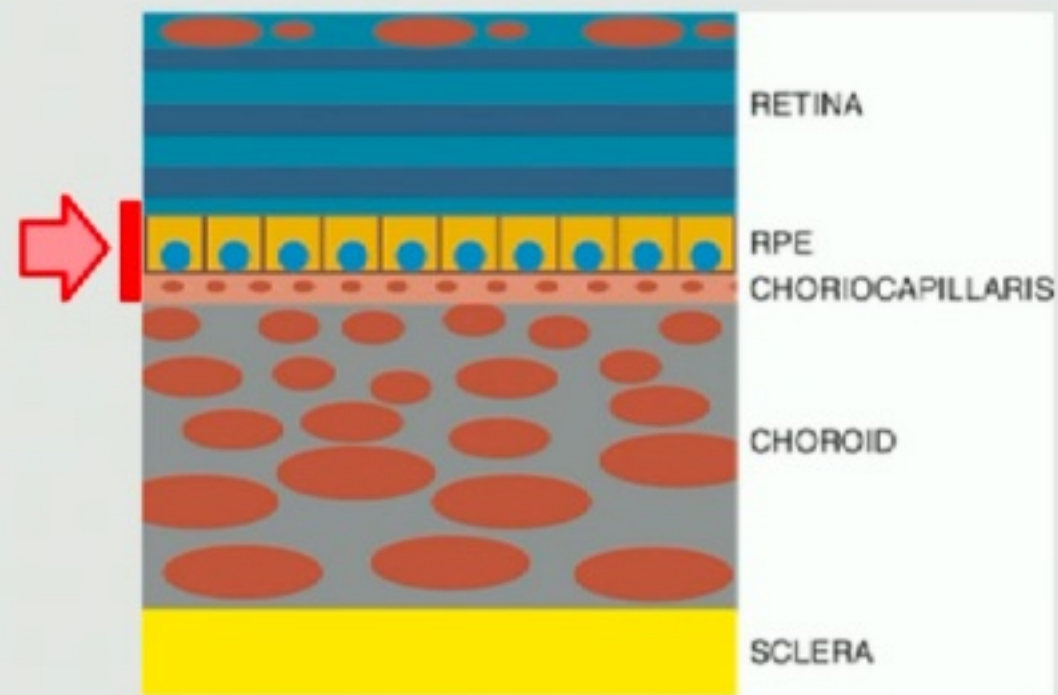


#2



#2

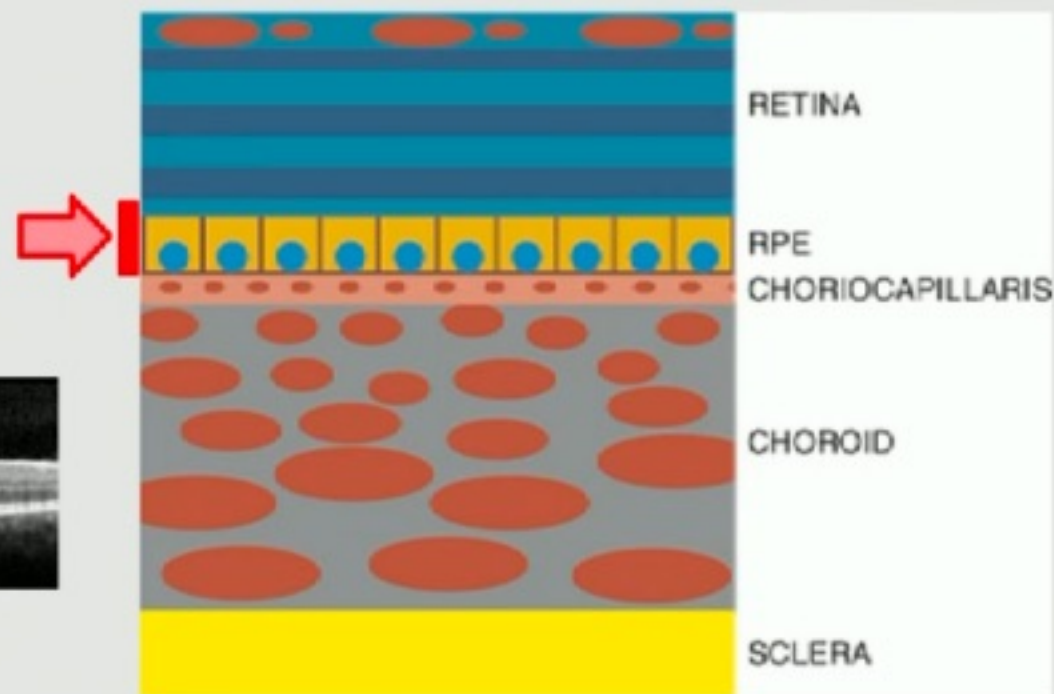
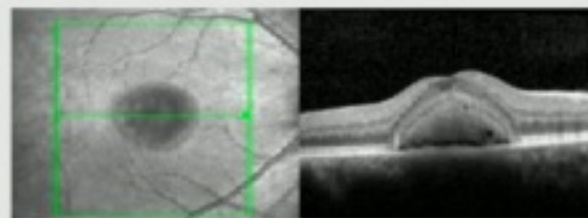
1. Central serous chorioretinopathy
2. **Neovascular** conditions



#3

1. Central serous chorioretinopathy
2. Neovascular conditions
3. **Vitelliform** lesions

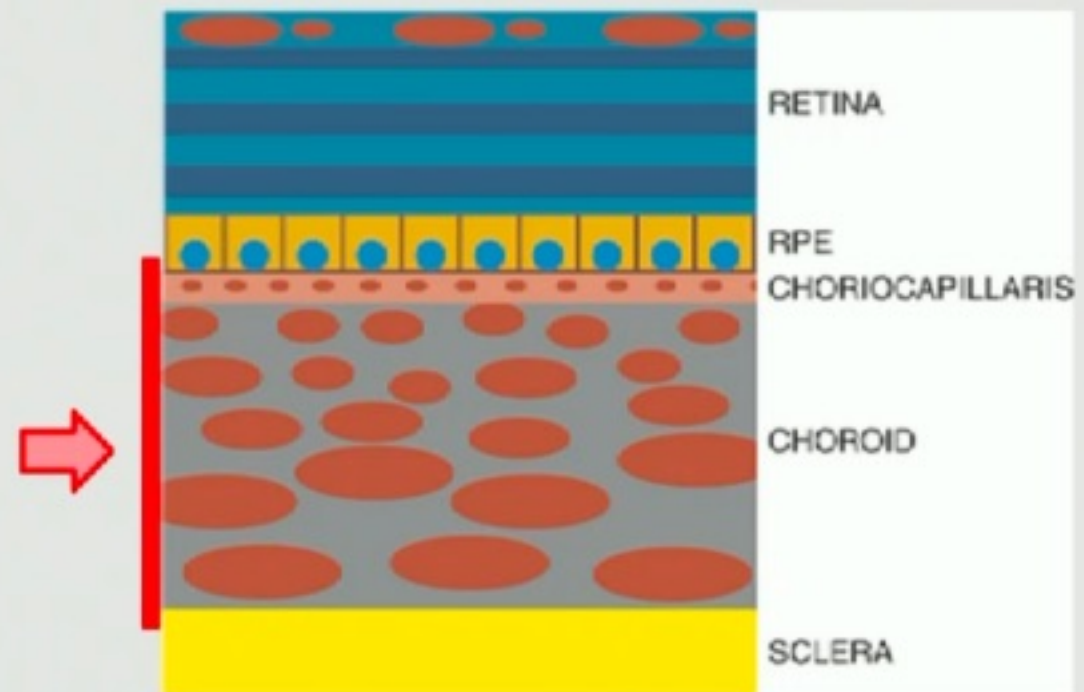
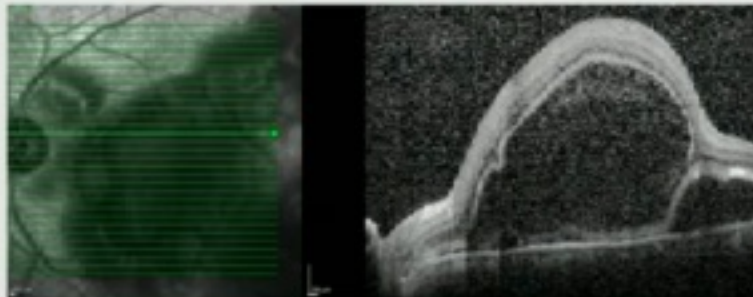
e.g. adult-onset vitelliform macular dystrophy
Best vitelliform macular dystrophy
acute exudative polymorphous vitelliform maculopathy



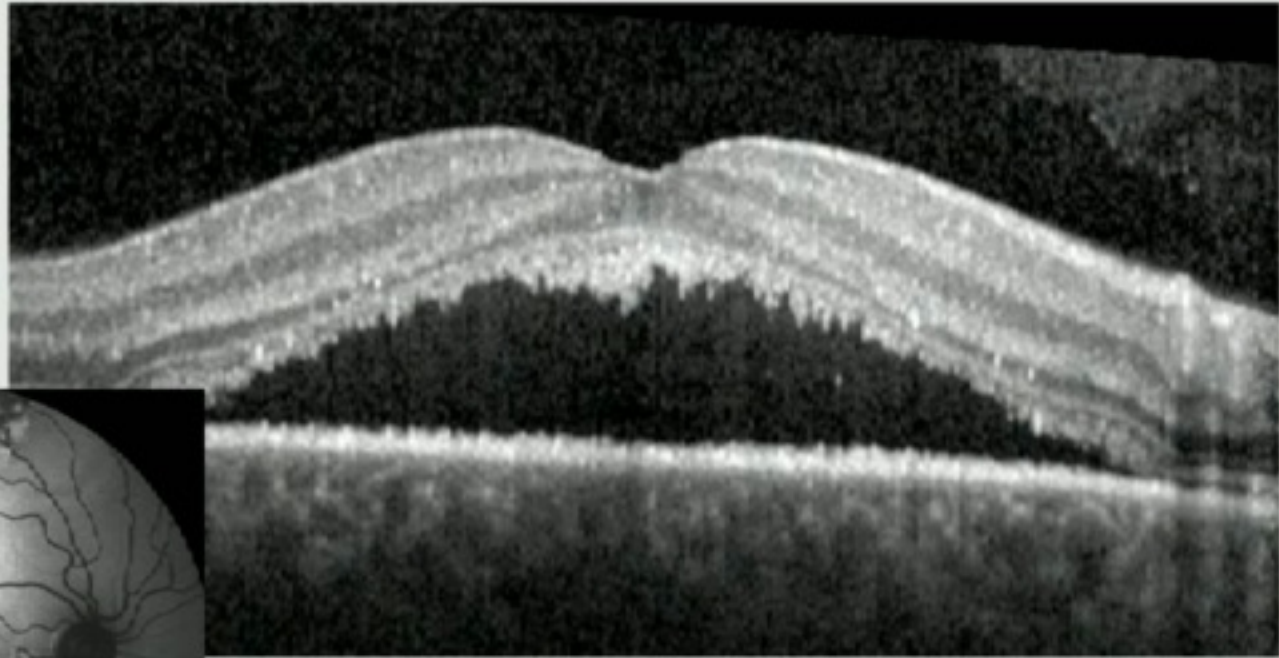
#4

1. Central serous chorioretinopathy
2. Neovascular conditions
3. Vitelliform lesions
4. **Inflammatory** diseases

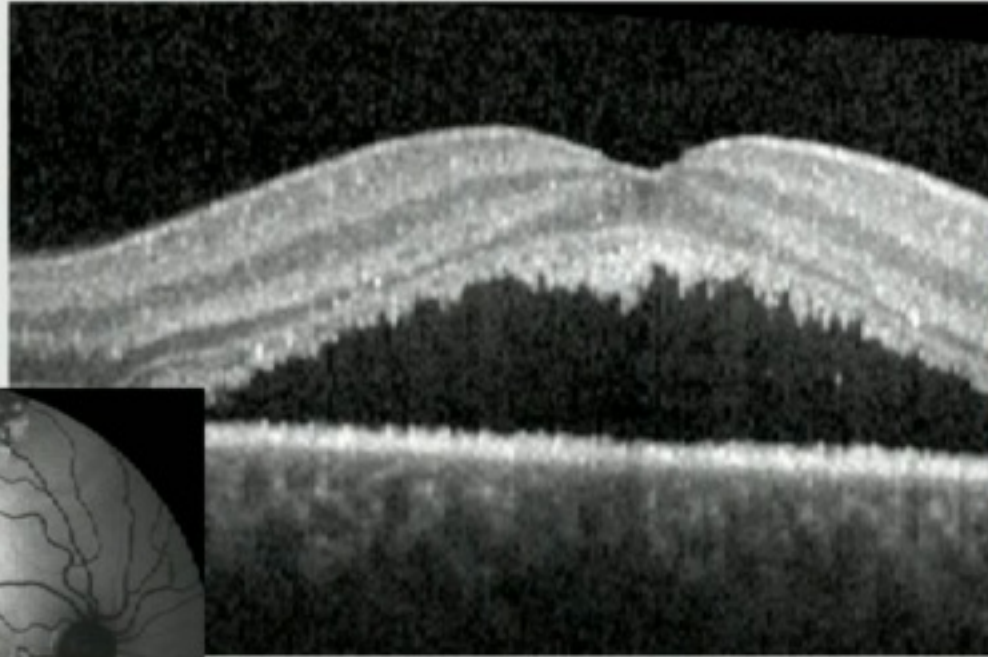
- Vogt-Koyanagi-Harada
- Multifocal choroiditis
- Posterior scleritis
- Sarcoidosis



#5

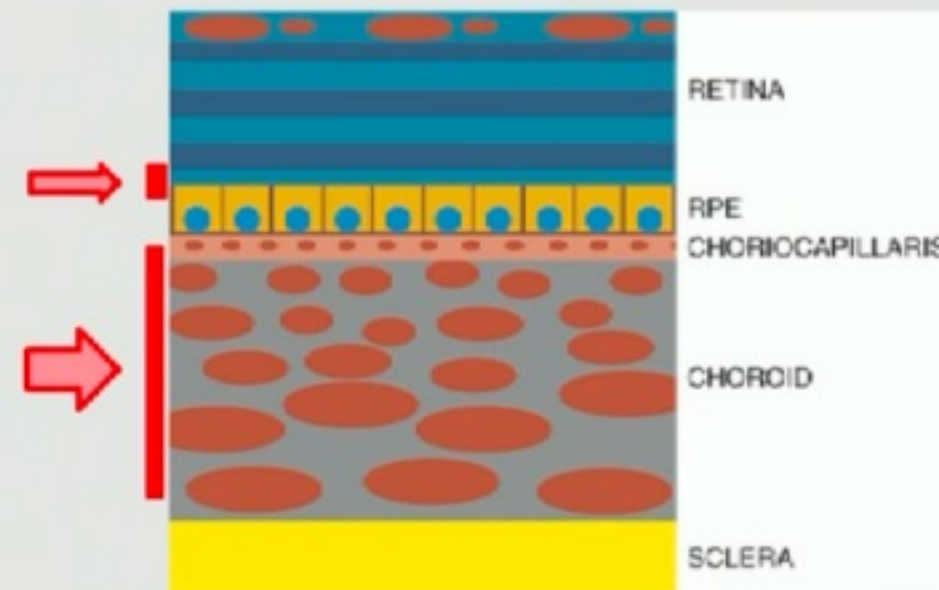
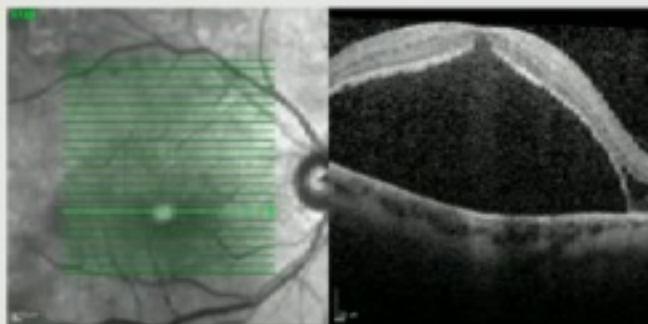


#5



#6

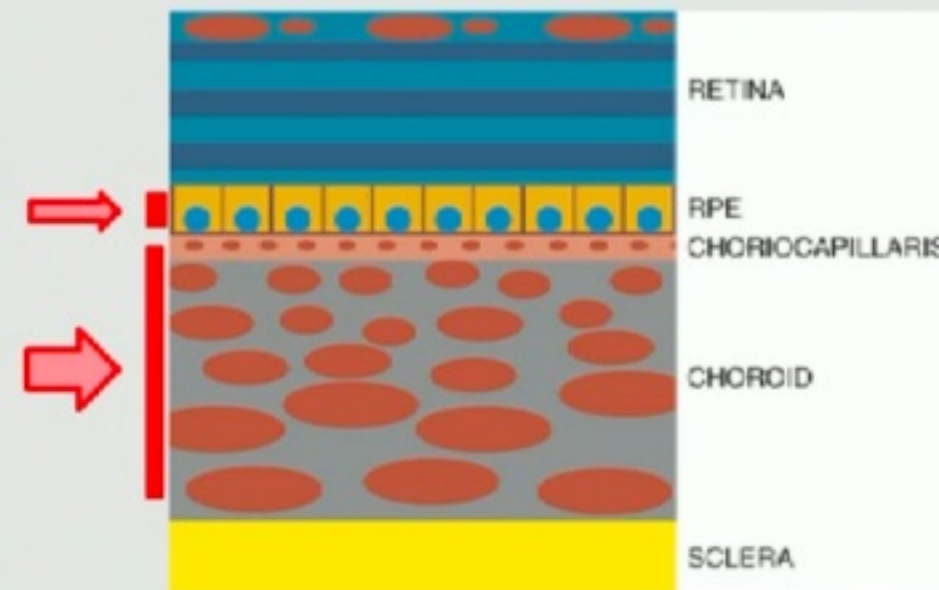
1. Central serous chorioretinopathy
2. Neovascular conditions
3. Vitelliform lesions
4. Inflammatory diseases
5. Ocular tumours
- 6. Haematological malignancies**
 - Choroidal B-cell non-Hodgkin lymphoma
 - Waldenström macroglobulinaemia
 - Leukaemia



#7

1. Central serous chorioretinopathy
2. Neovascular conditions
3. Vitelliform lesions
4. Inflammatory diseases
5. Ocular tumours
6. Haematological malignancies
- 7. Paraneoplastic syndromes**

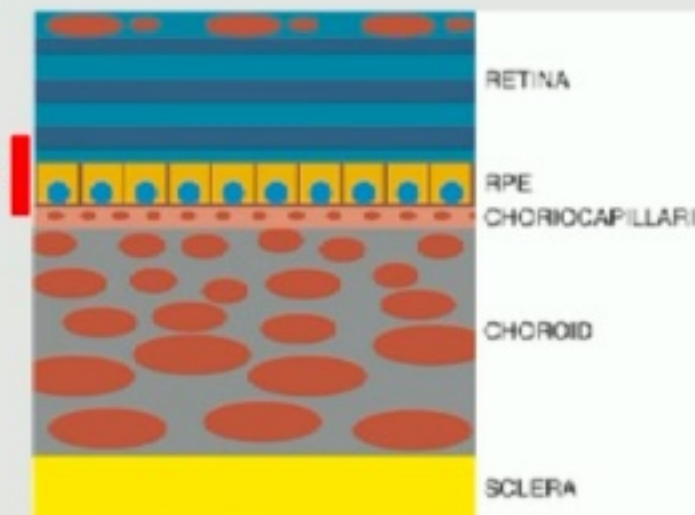
e.g. BDUMP



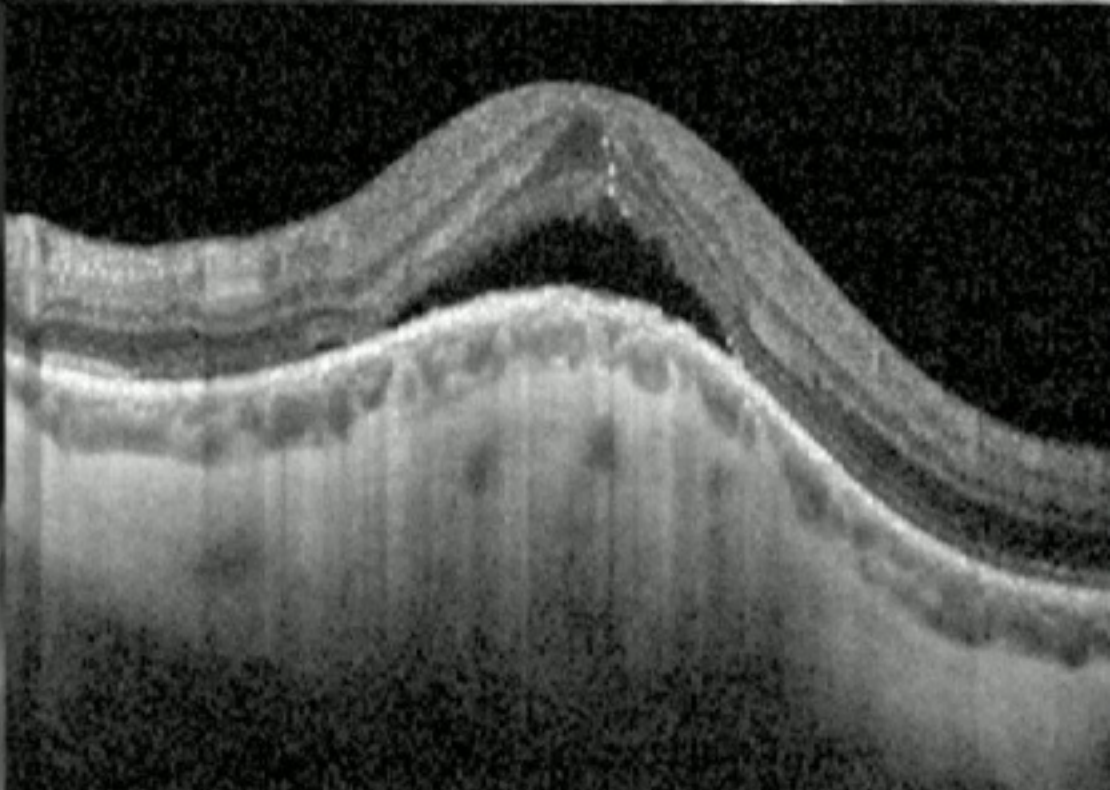
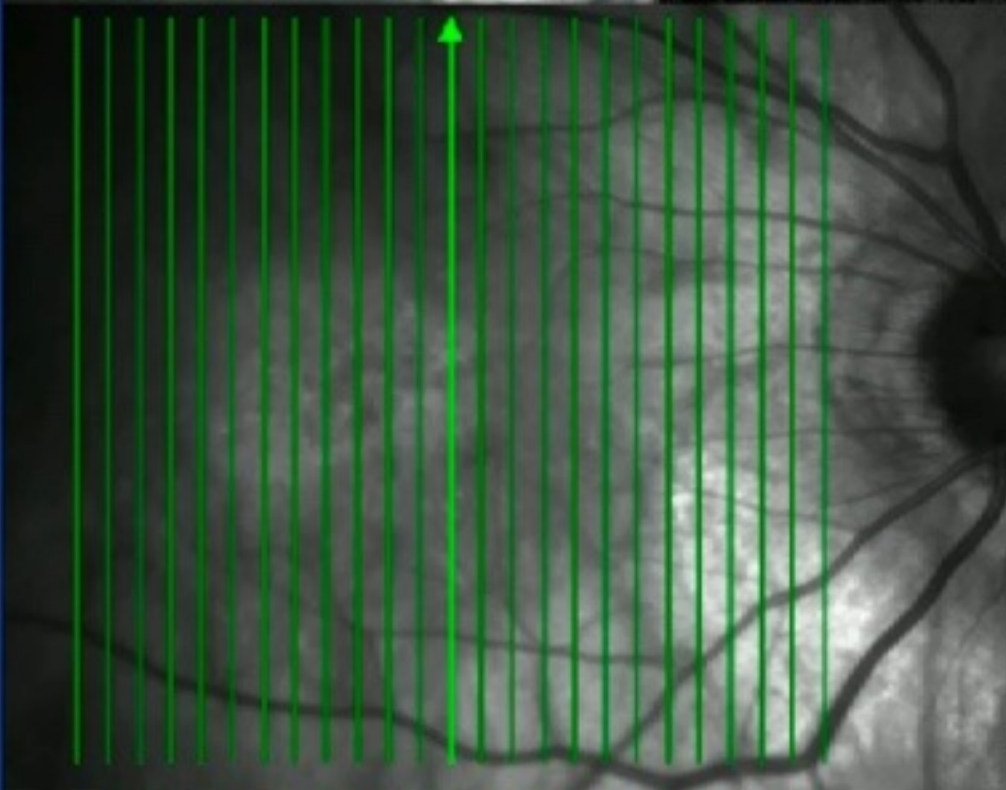
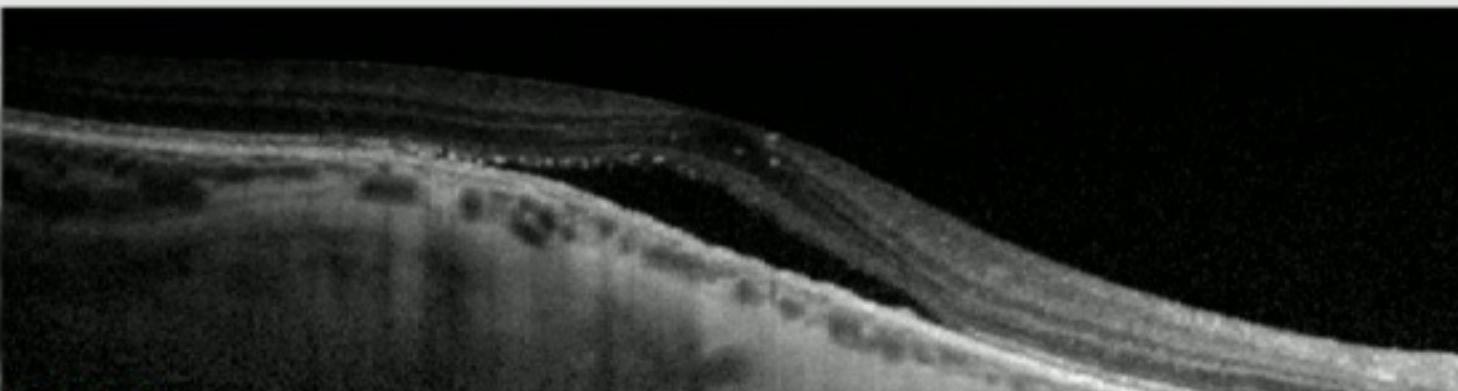
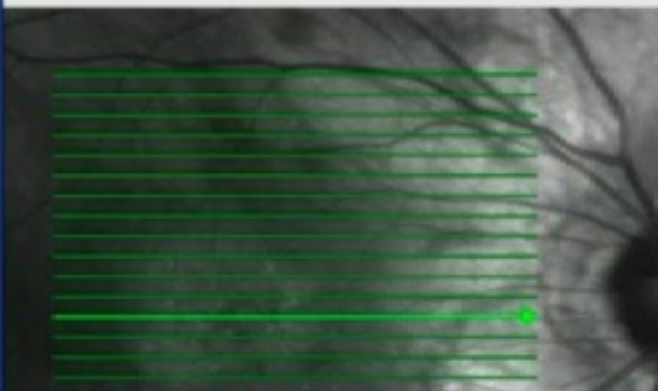
#8

1. Central serous chorioretinopathy
2. Neovascular conditions
3. Vitelliform lesions
4. Inflammatory diseases
5. Ocular tumours
6. Haematological malignancies
7. Paraneoplastic syndromes
- 8. Genetic diseases**

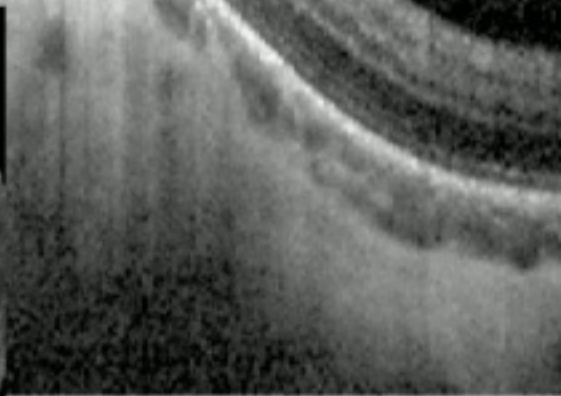
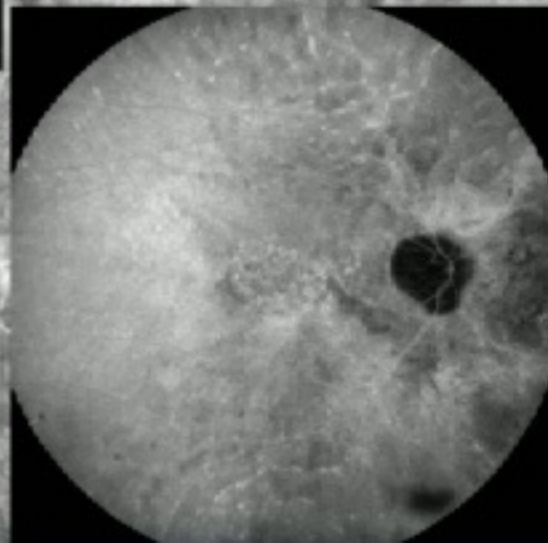
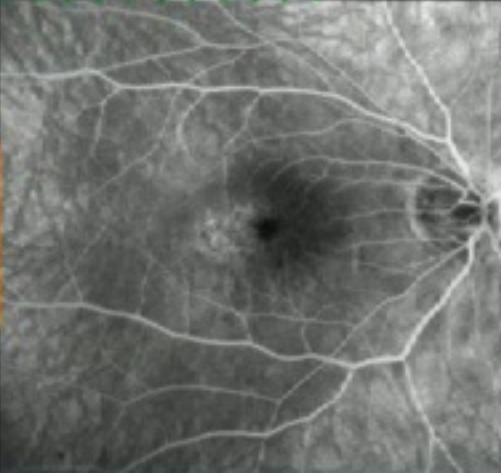
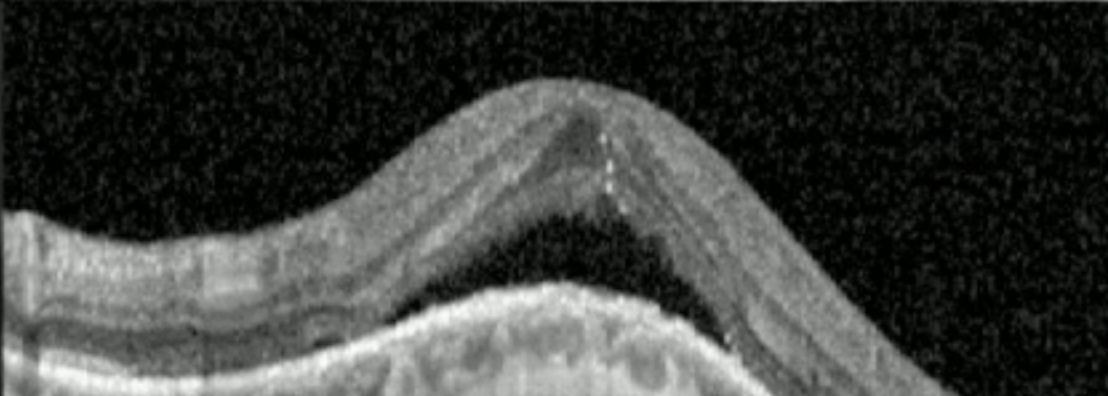
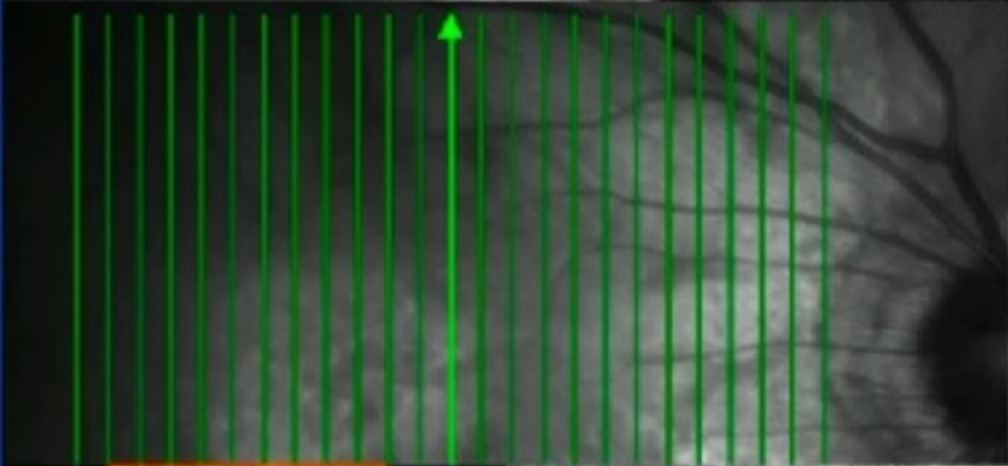
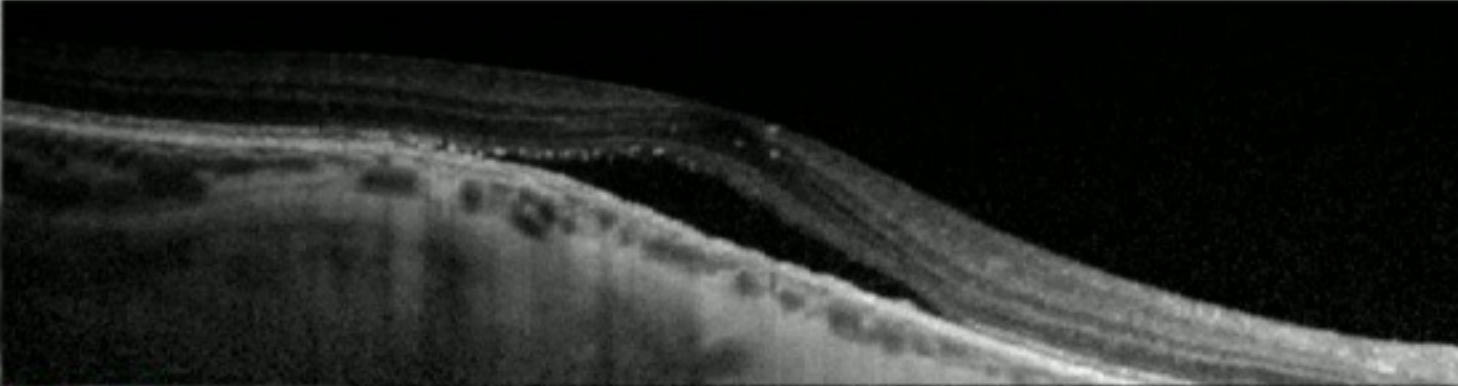
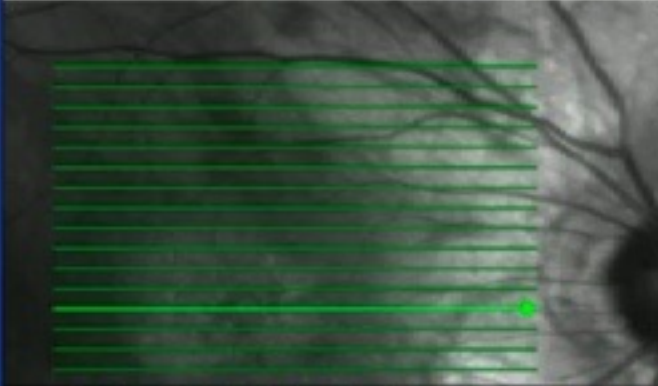
- Best vitelliform macular dystrophy (*BEST1*, AD)
- occult macular dystrophy (*RP1L1*, AD)
- central areolar choroidal dystrophy (*PRPH2*, AD)
- pseudoxanthoma elasticum (*ABCC6*, AR)



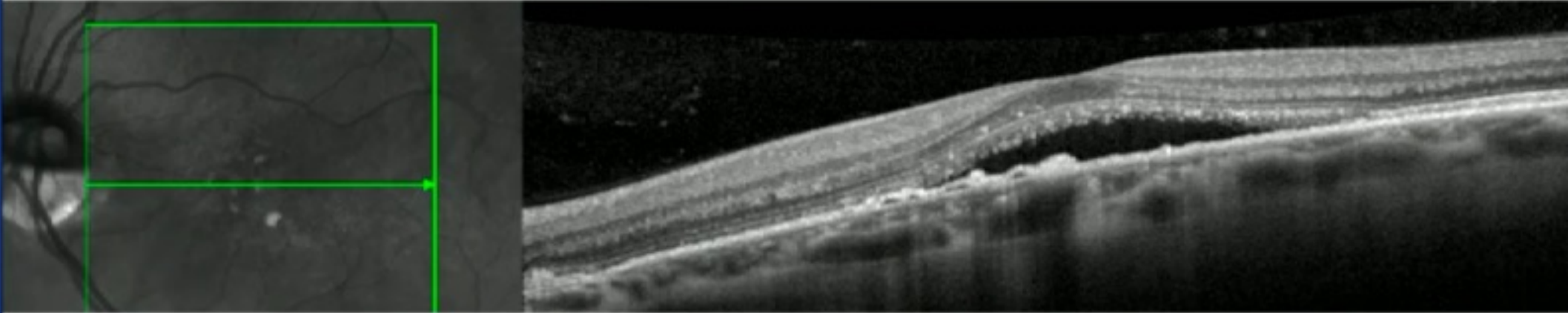
#9



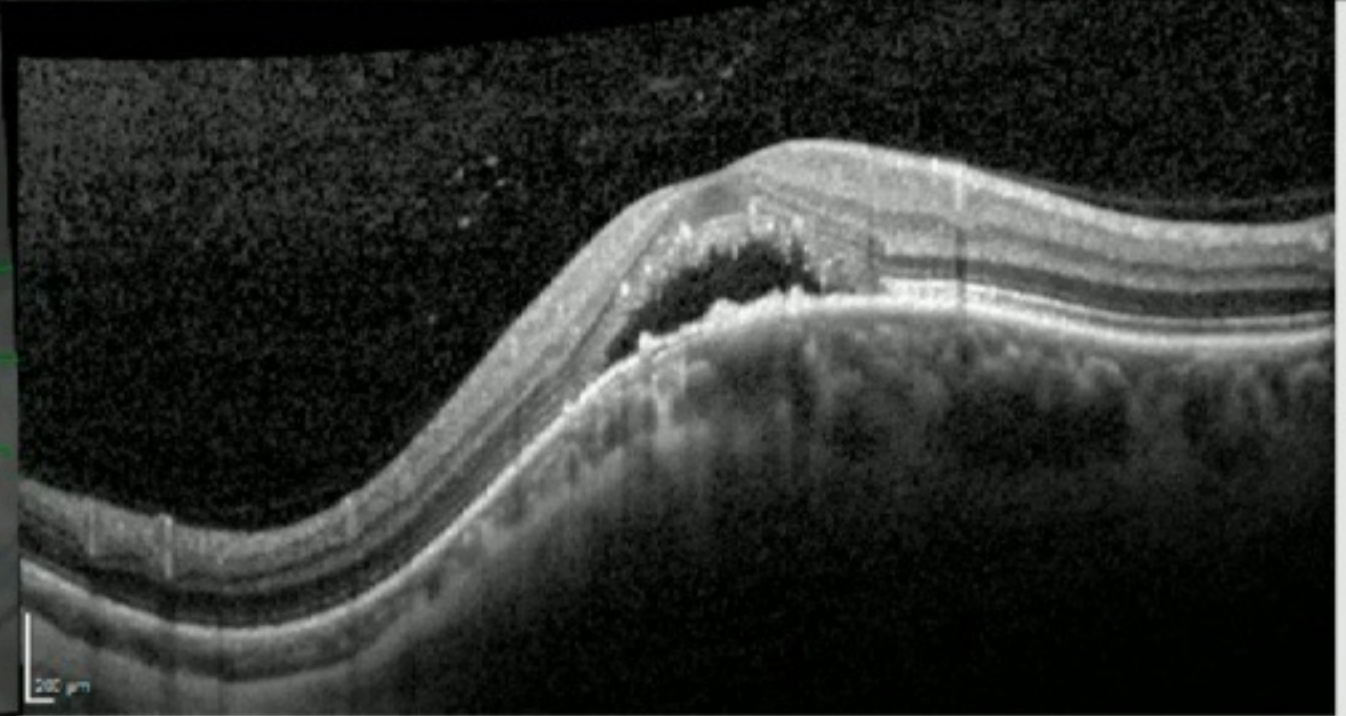
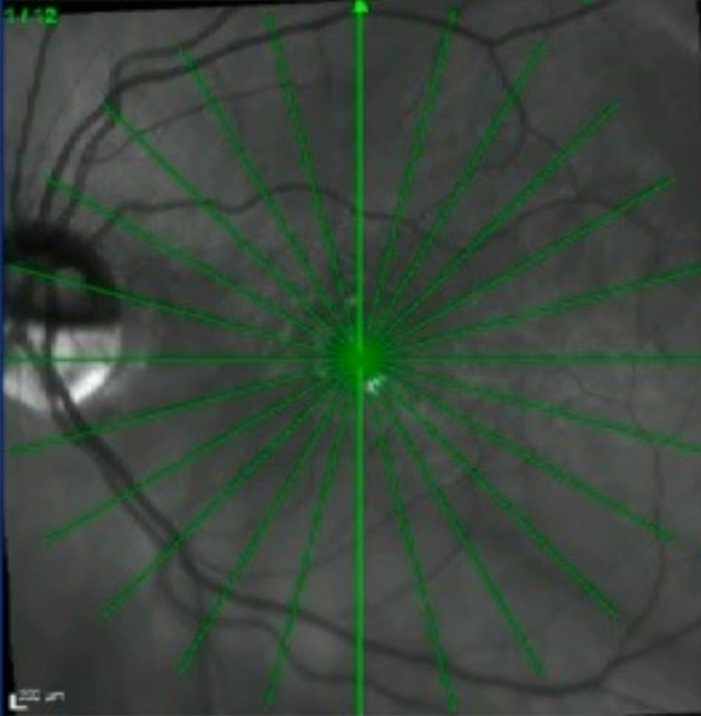
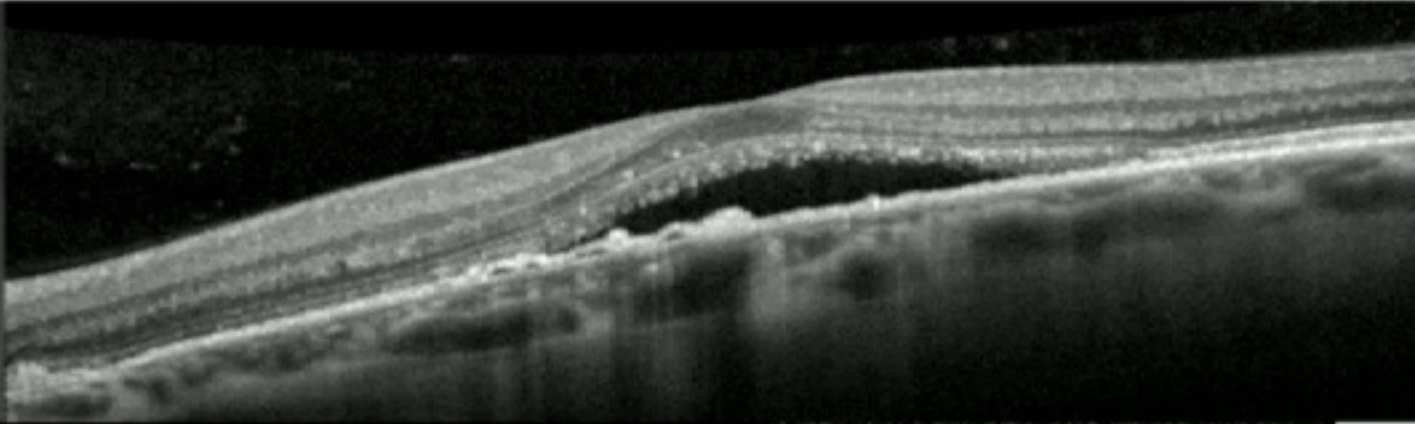
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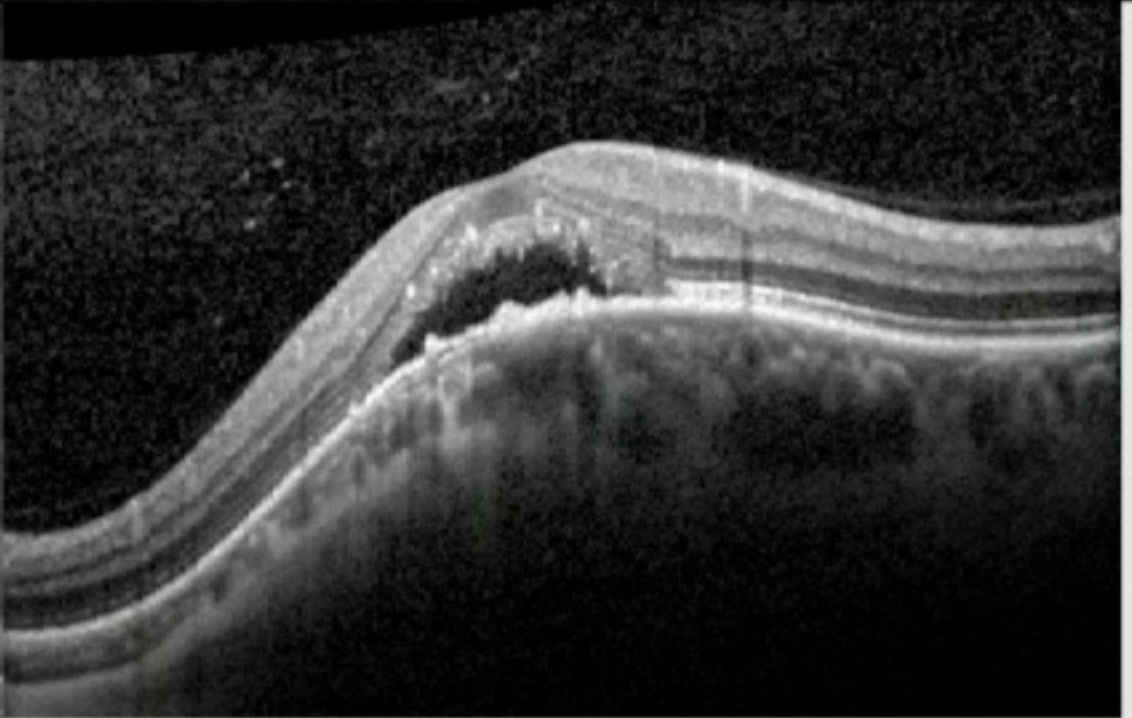
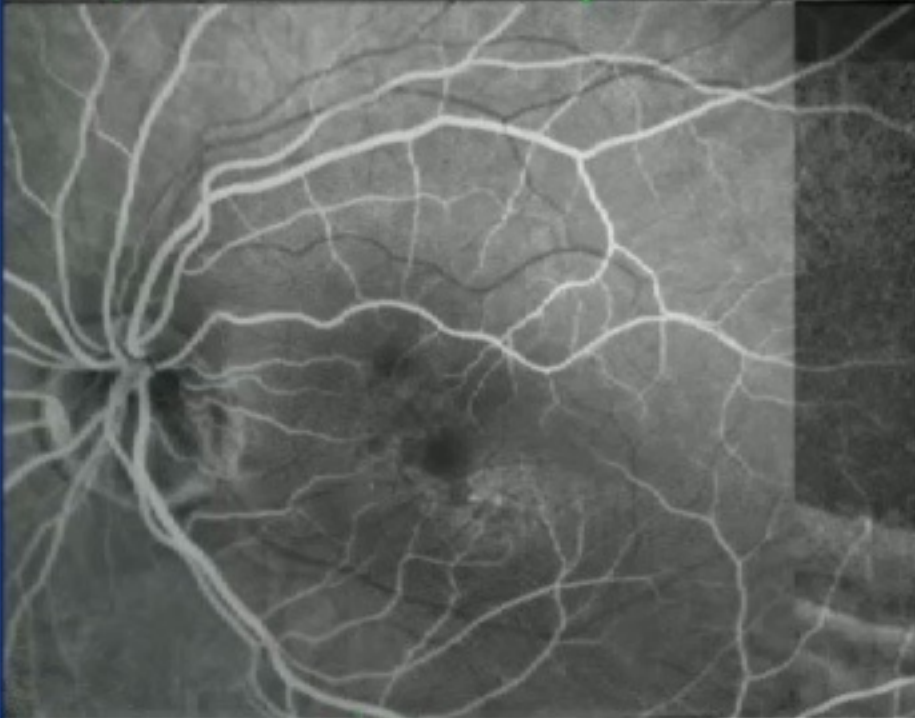
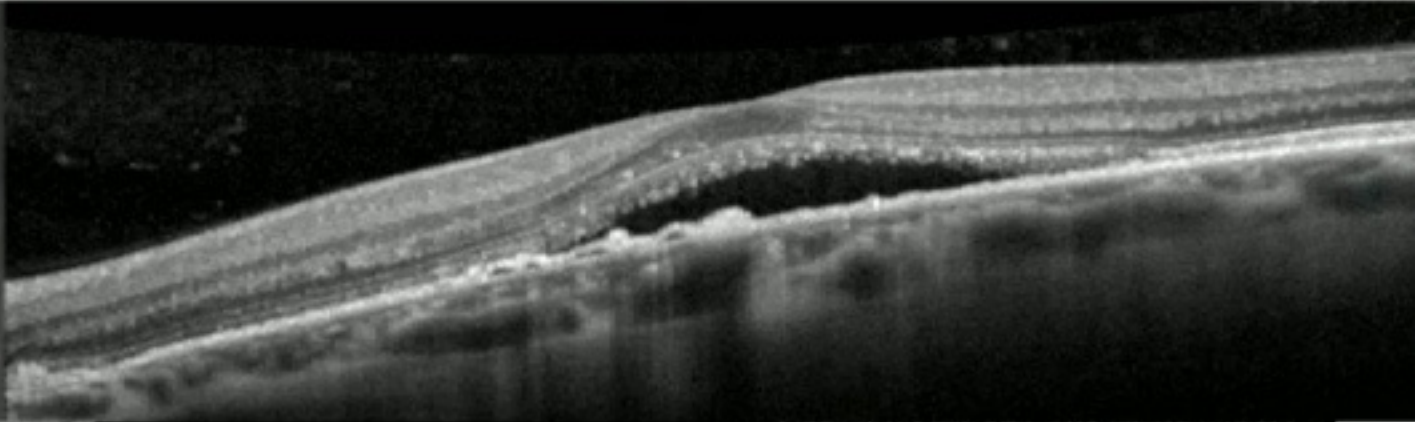
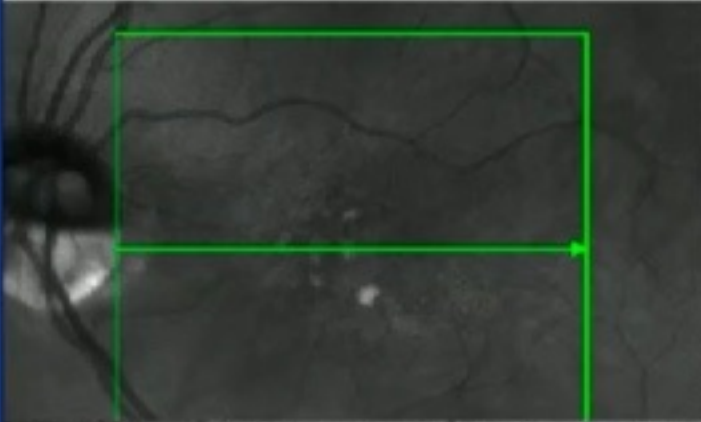
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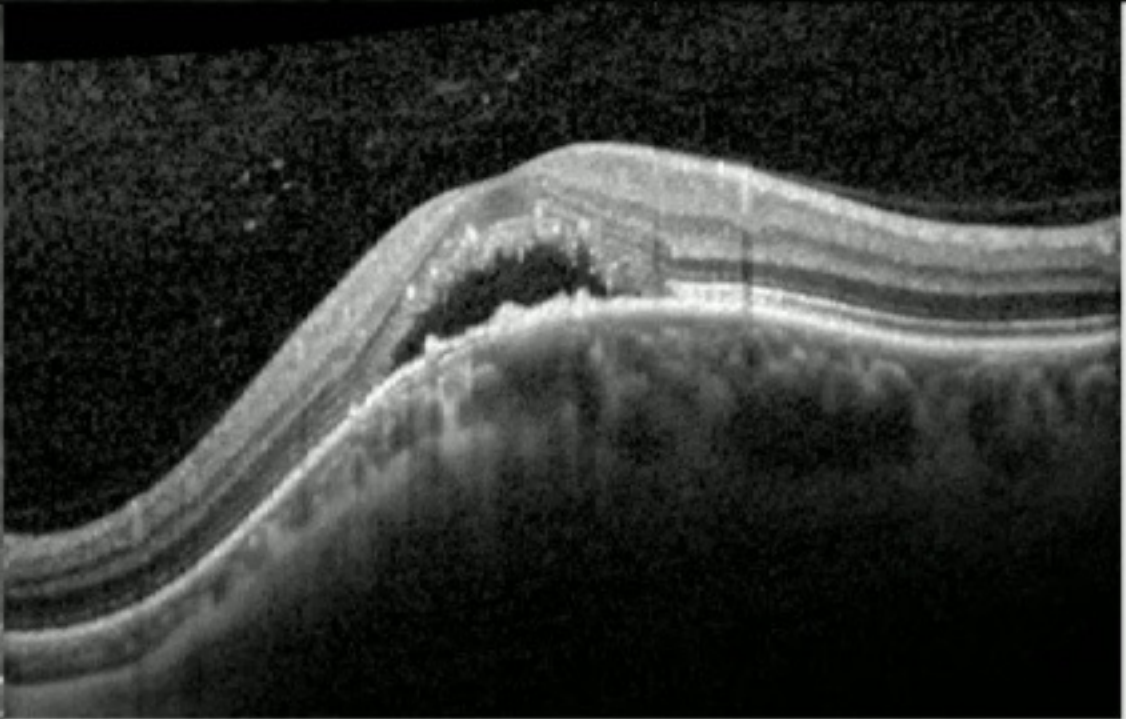
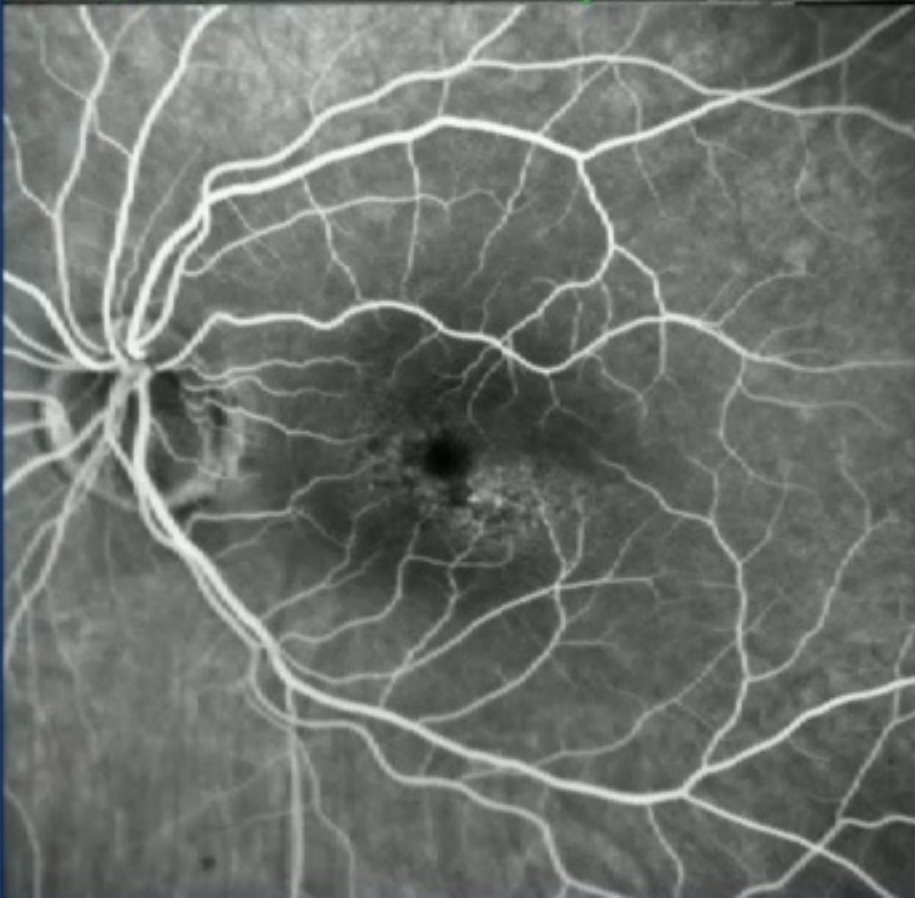
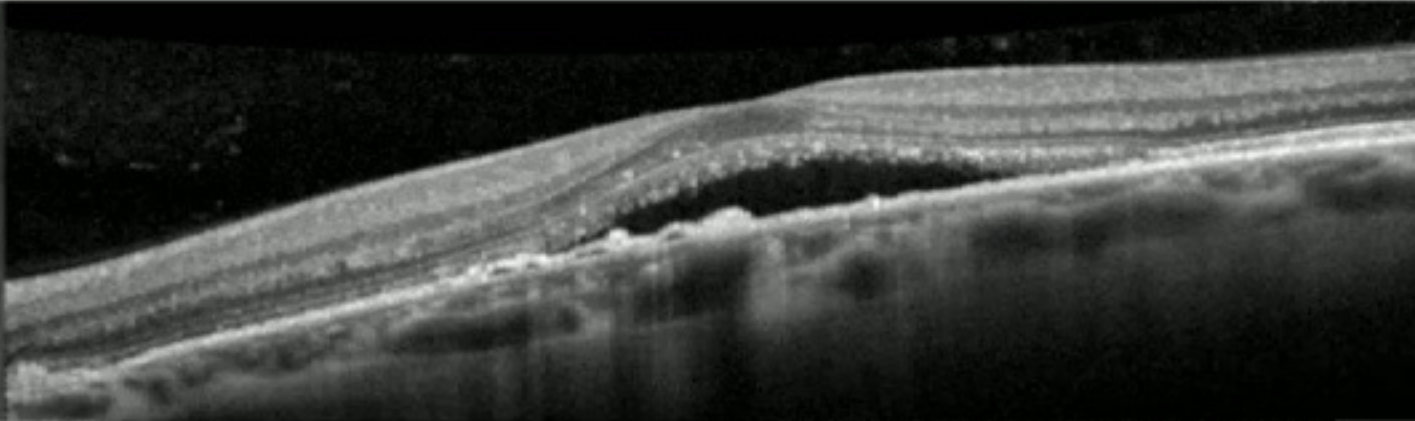
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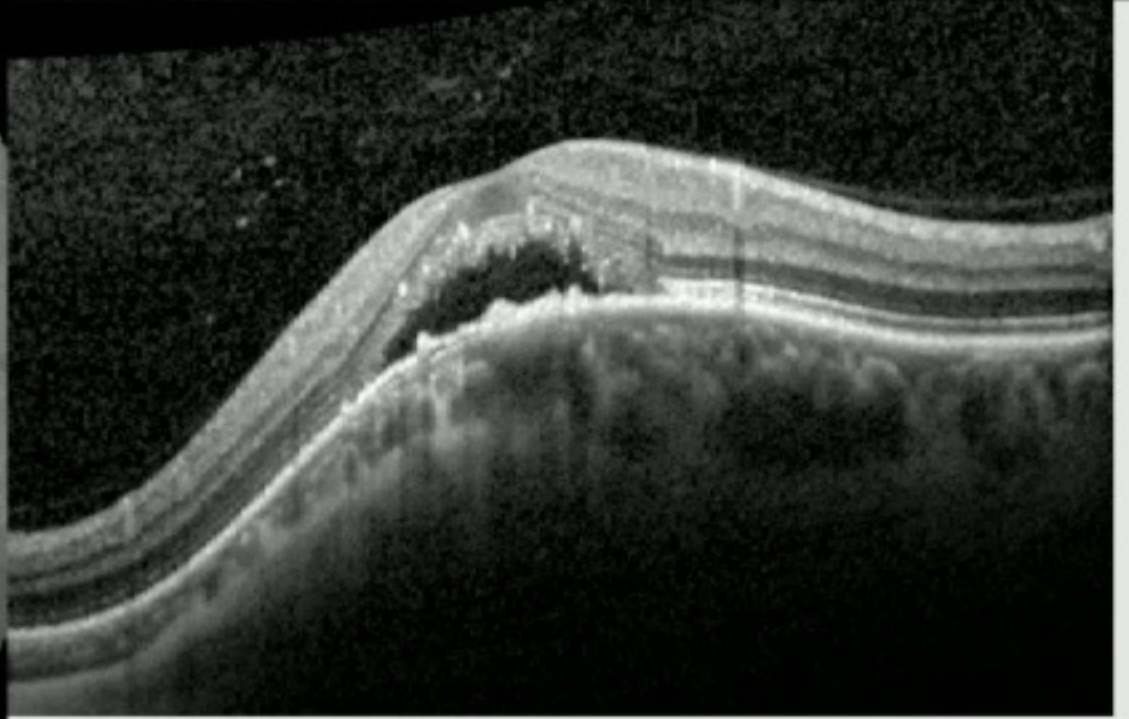
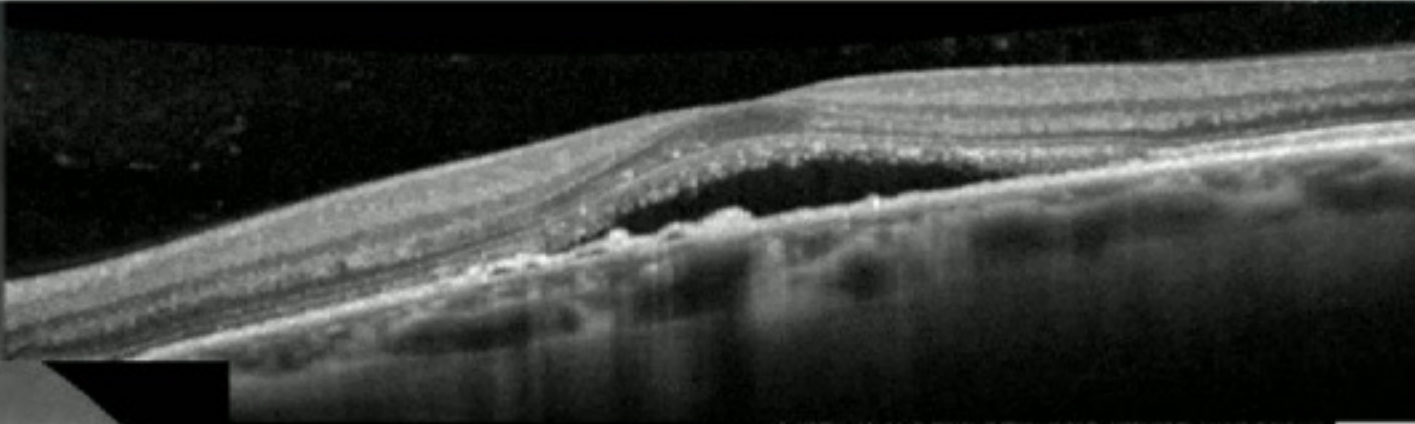
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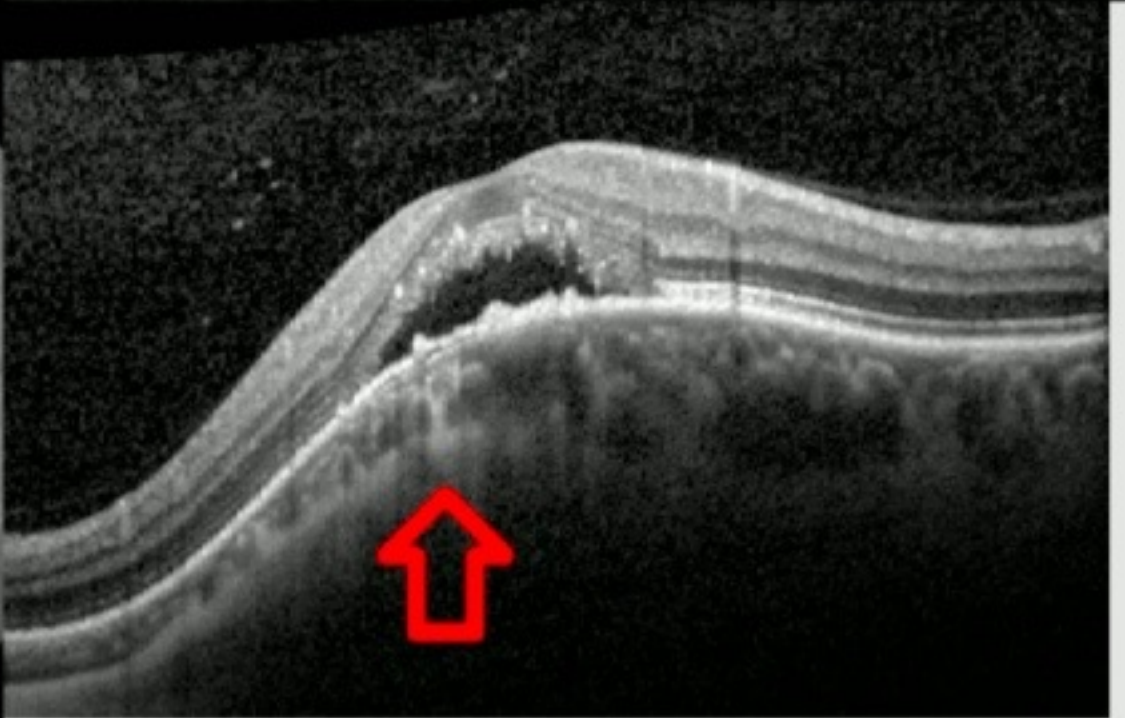
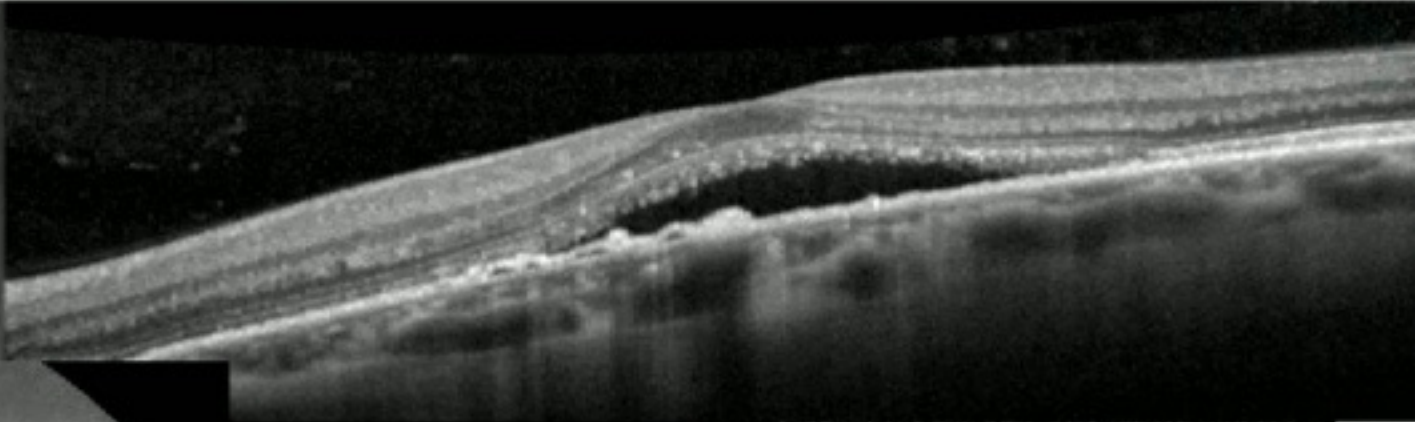
#9



#9

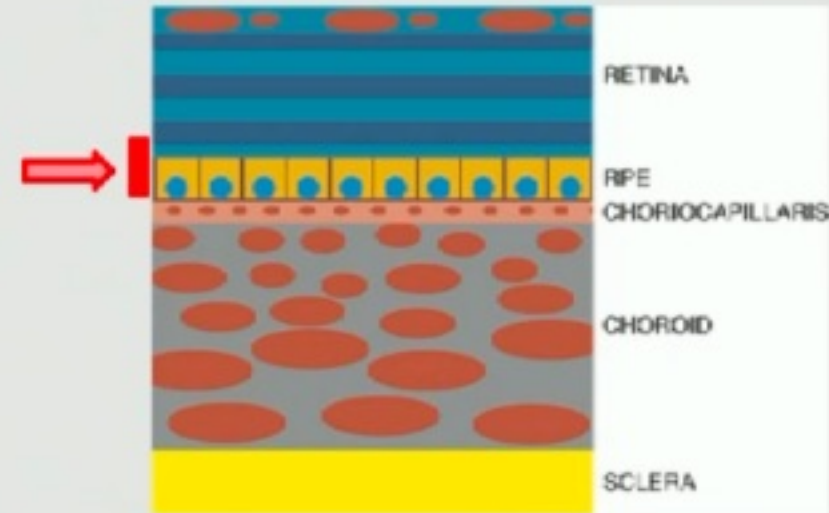


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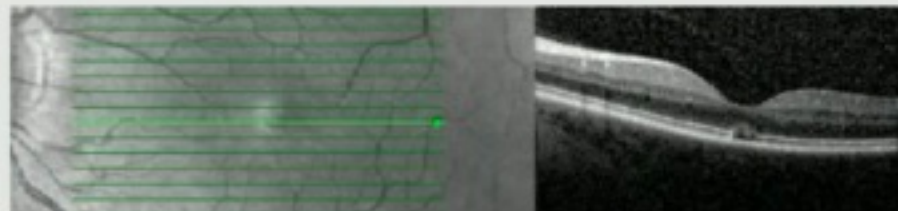
#10

1. Central serous chorioretinopathy
2. Neovascular conditions
3. Vitelliform lesions
4. Inflammatory diseases
5. Ocular tumours
6. Haematological malignancies
7. Paraneoplastic syndromes
8. Genetic diseases
9. Ocular developmental disorders



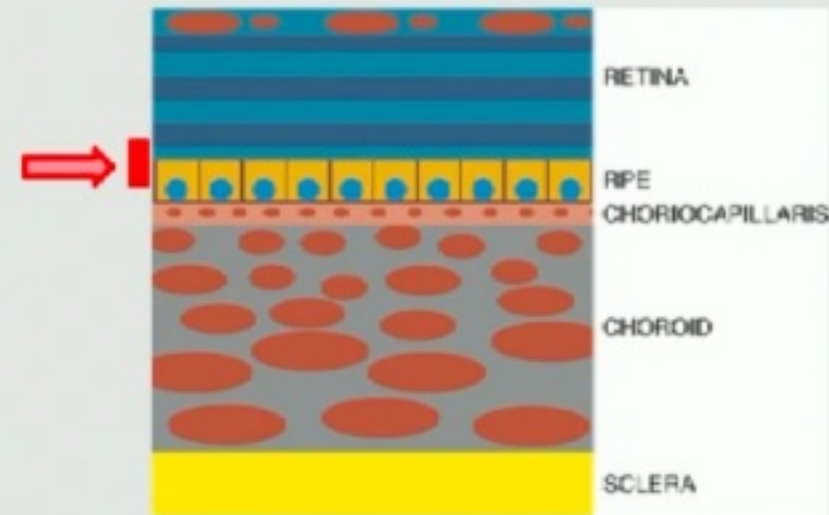
10. Medication- and toxicity-related conditions

- MEKAR (MEK-inhibitor associated retinopathy; Van Dijk,...Boon, Ophthalmology 2015)
- SRF in birdshot-like chorioretinopathy due to checkpoint inhibitors
- poppers maculopathy



#11

1. Central serous chorioretinopathy
2. Neovascular conditions
3. Vitelliform lesions
4. Inflammatory diseases
5. Ocular tumours
6. Haematological malignancies
7. Paraneoplastic syndromes
8. Genetic diseases
9. Ocular developmental disorders
10. Medication- and toxicity-related conditions
- 11. Rhegmatogenous / tractional retinal detachment**

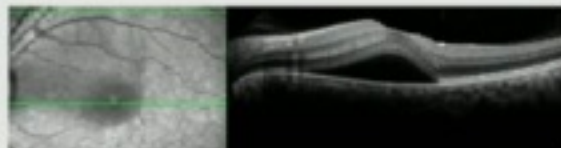
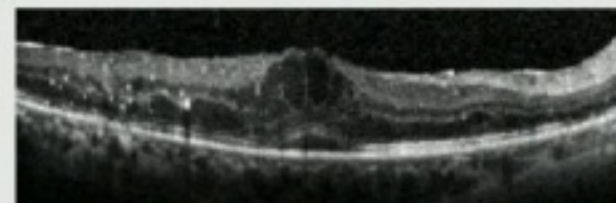
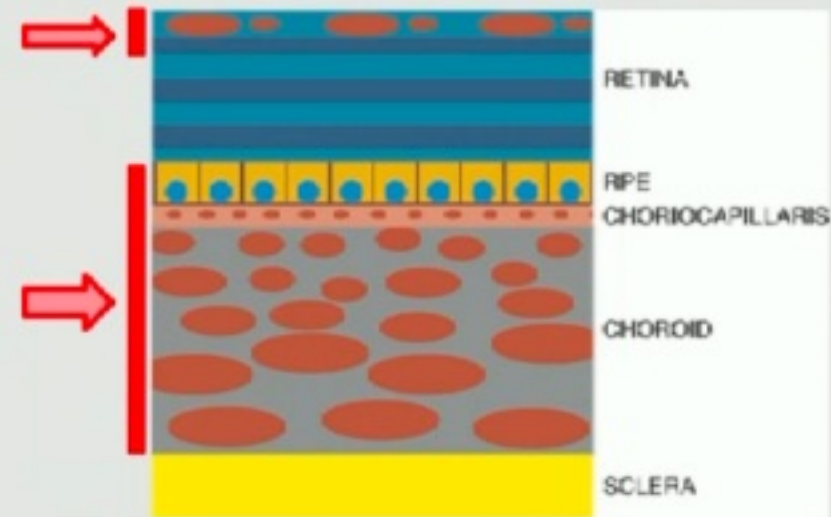


#12

1. Central serous chorioretinopathy
2. Neovascular conditions
3. Vitelliform lesions
4. Inflammatory diseases
5. Ocular tumours
6. Haematological malignancies
7. Paraneoplastic syndromes
8. Genetic diseases
9. Ocular developmental disorders
10. Medication- and toxicity-related conditions
11. Rhegmatogenous / tractional retinal detachment

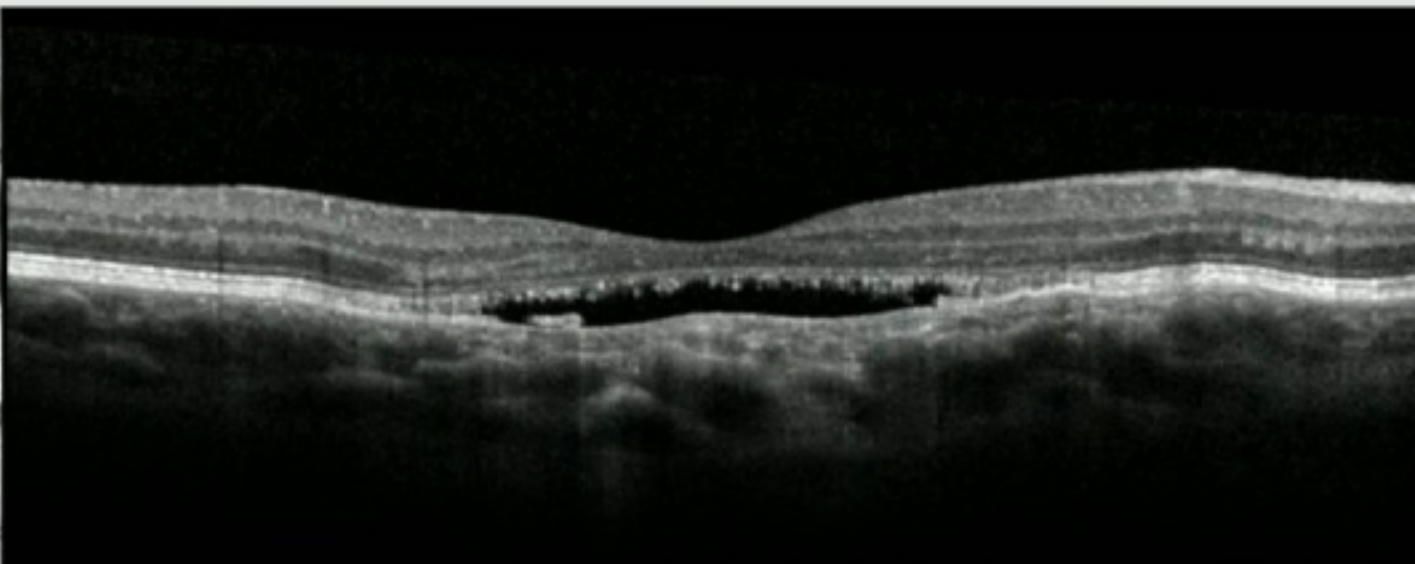
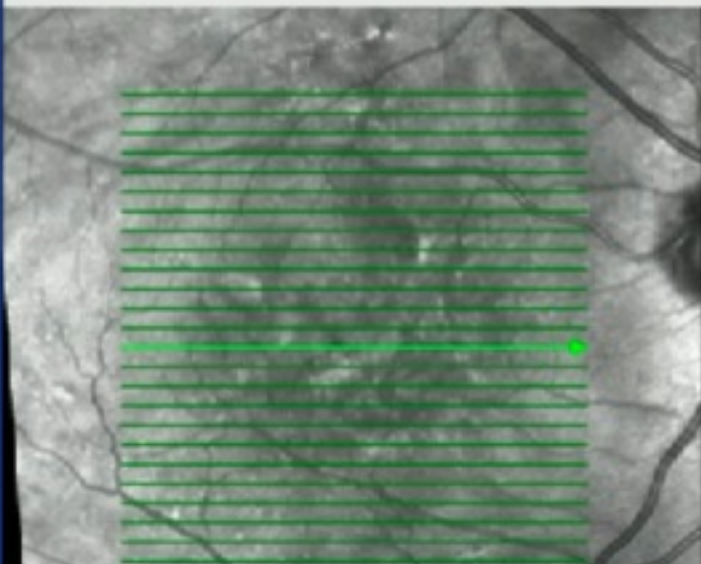
12. Retinal vascular diseases

- Diabetic macular edema
- Retinal venous occlusion
- Acute hypertensive (chorio)retinopathy
- Pregnancy-related serous maculopathy



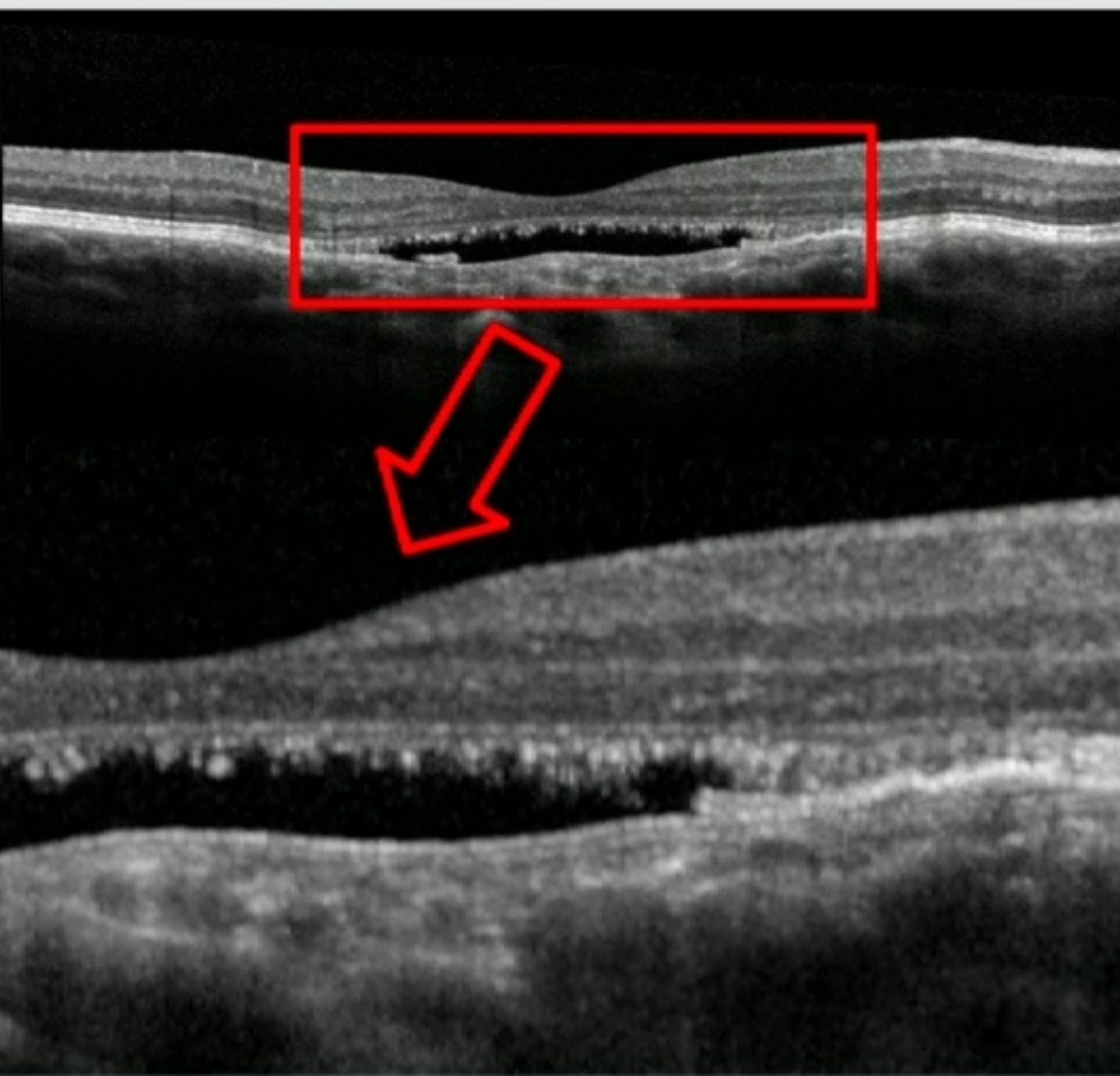
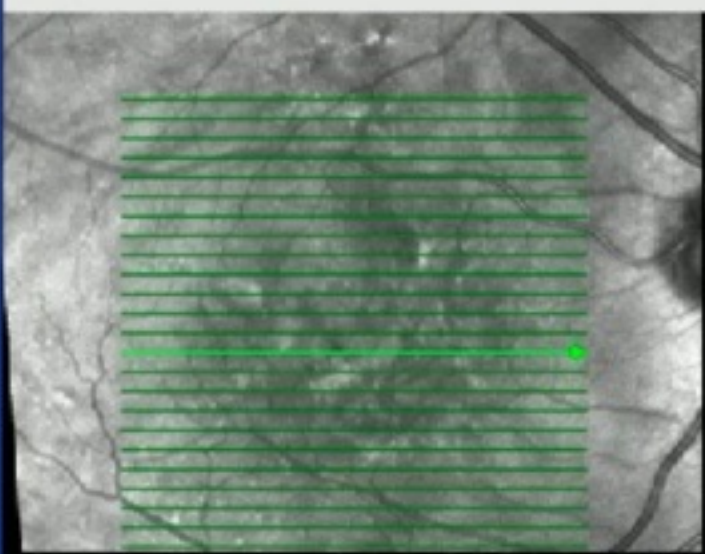
New!

#13



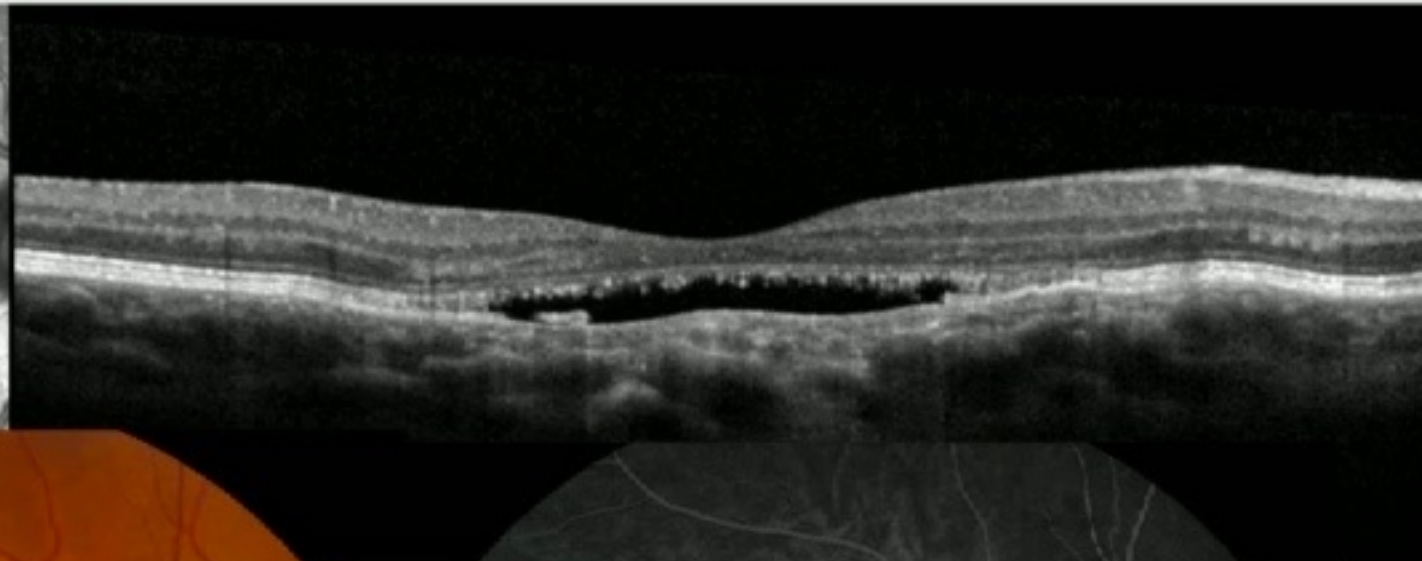
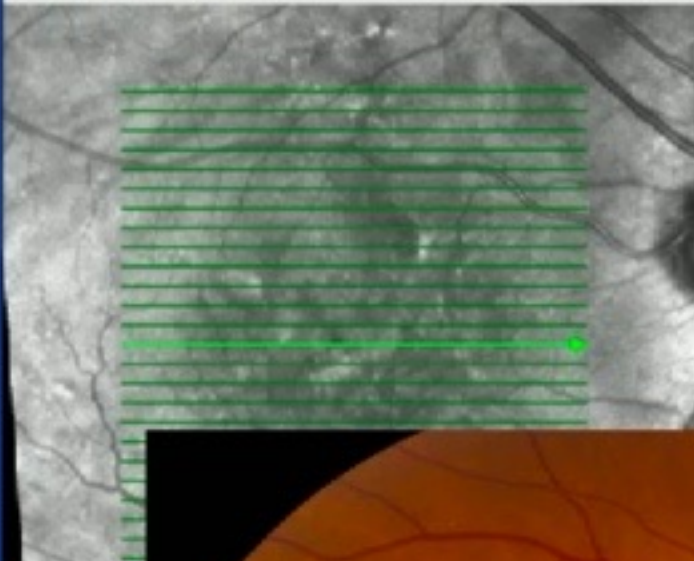
New!

#13



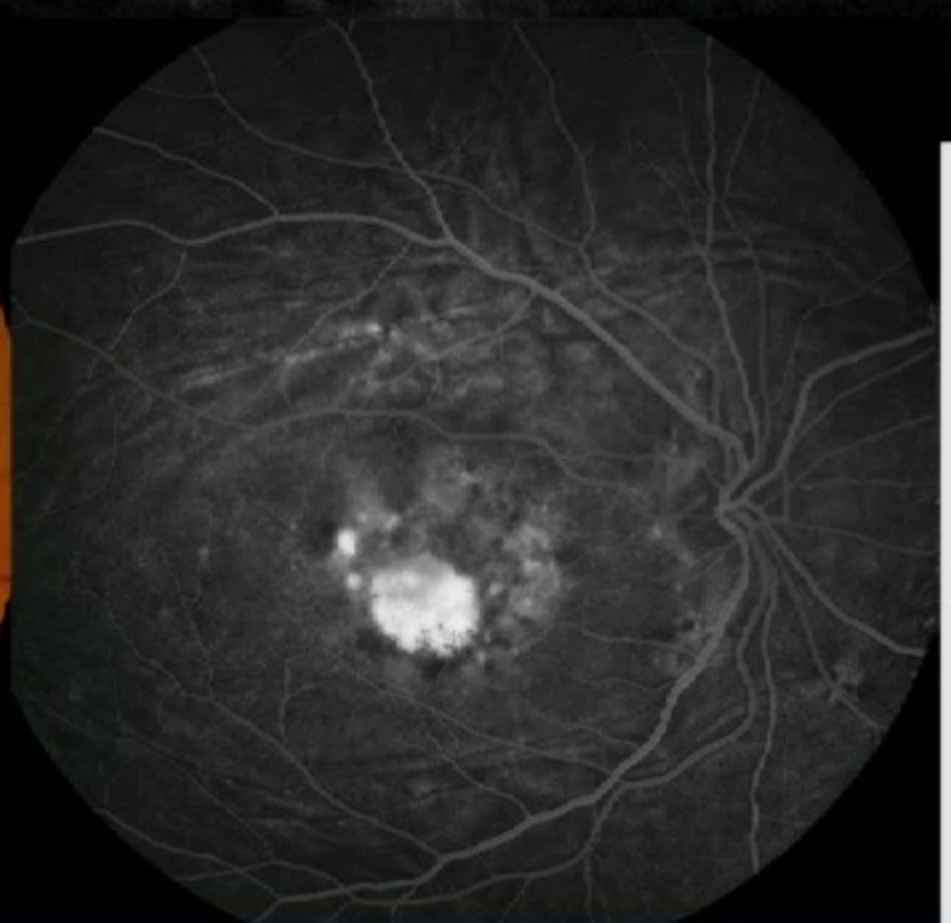
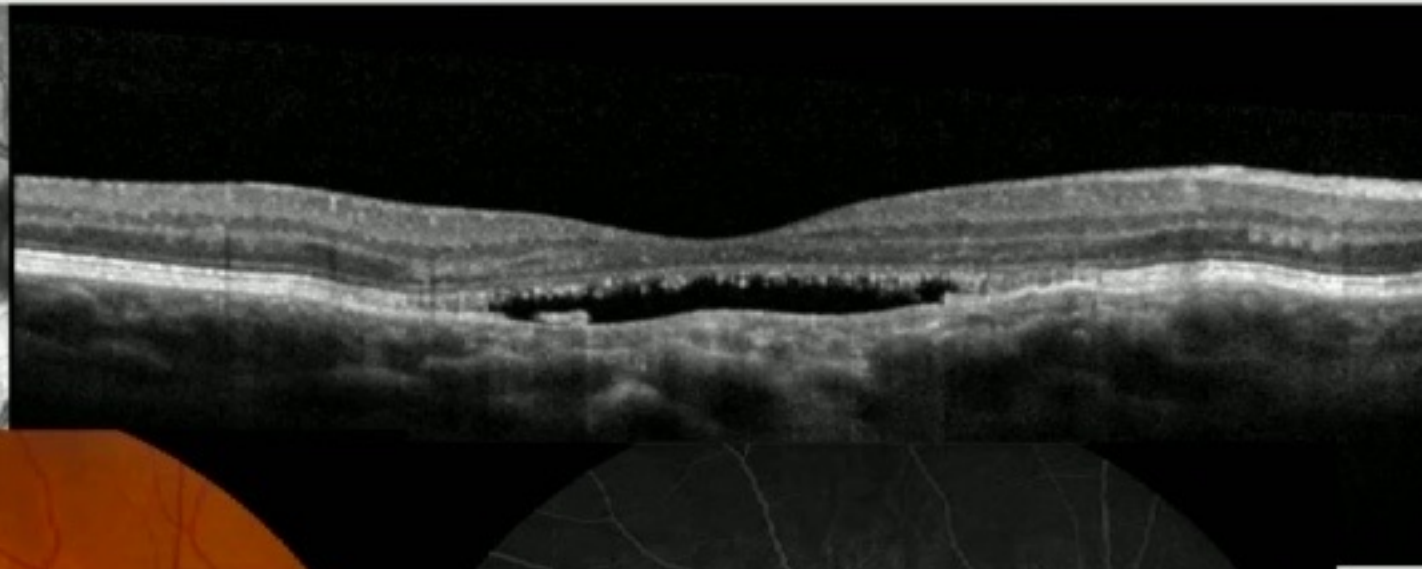
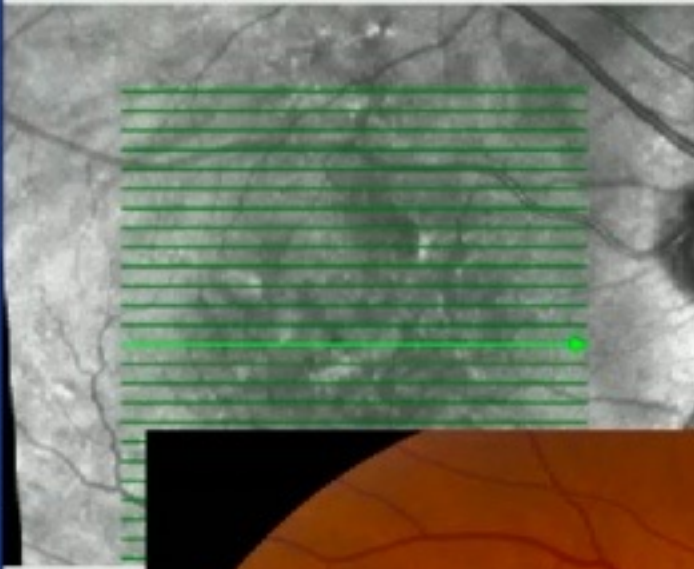
New!

#13



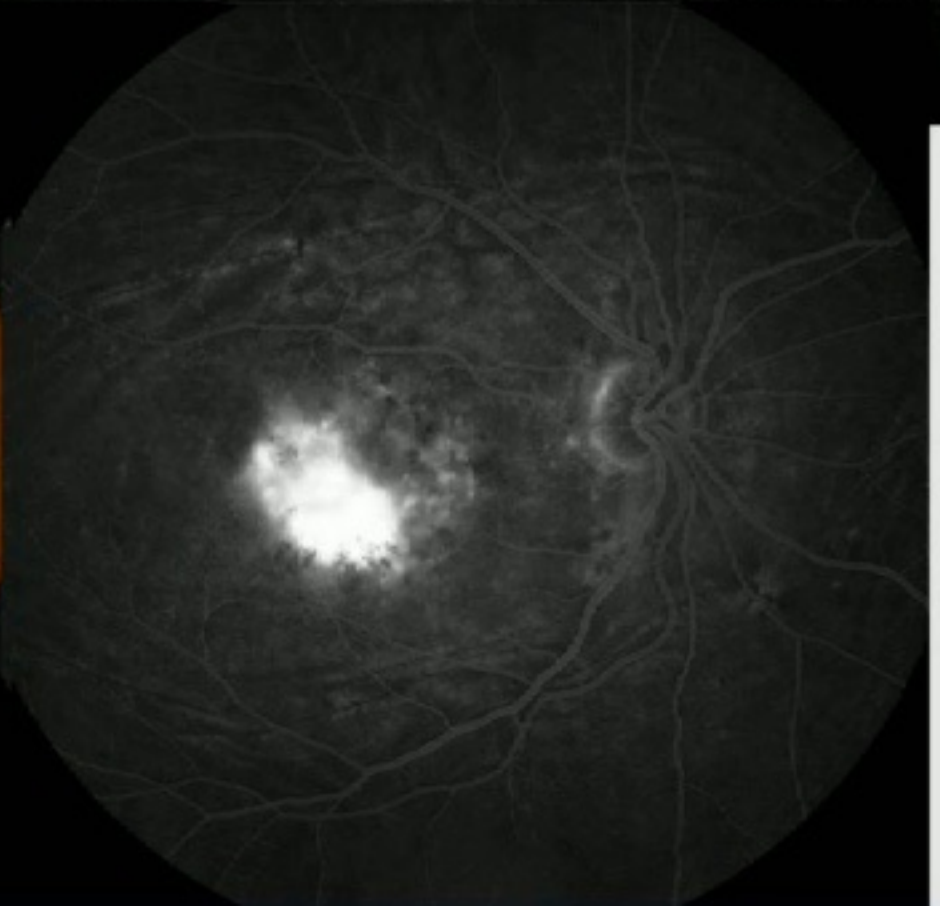
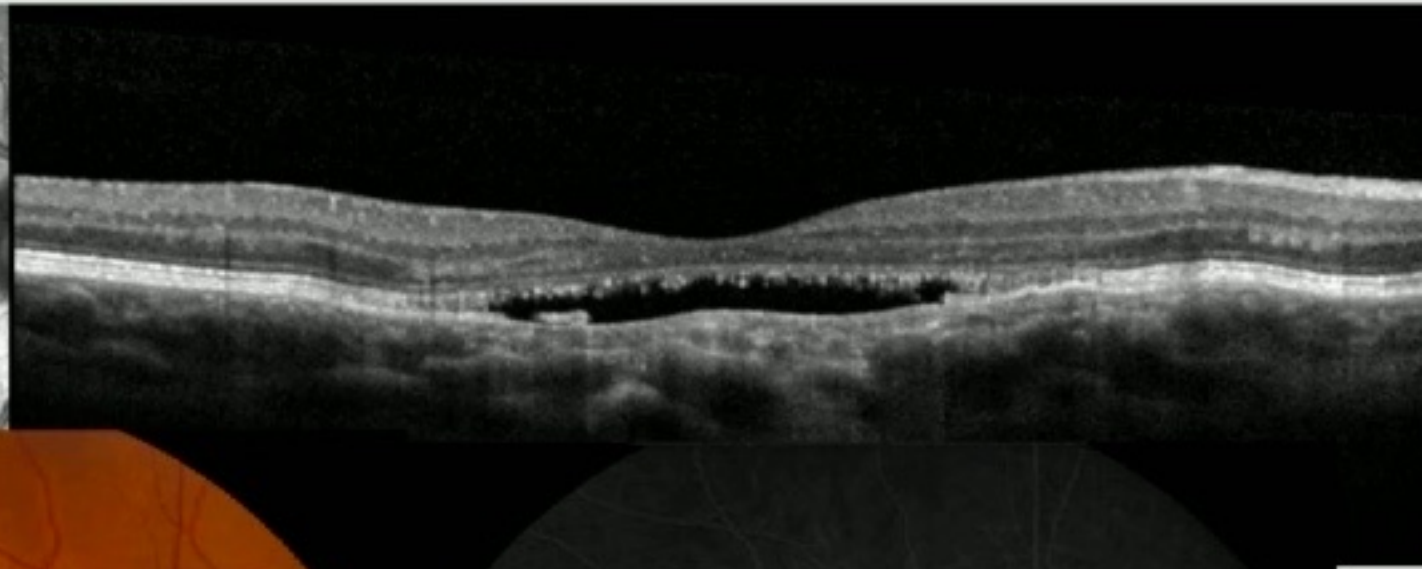
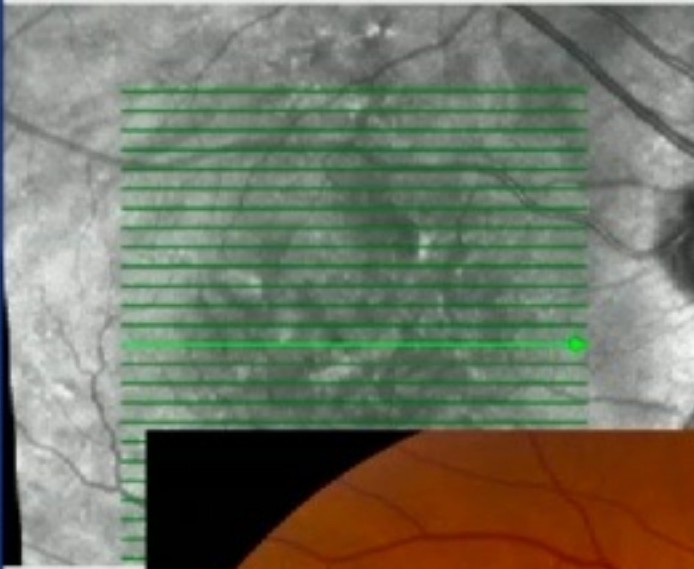
New!

#13



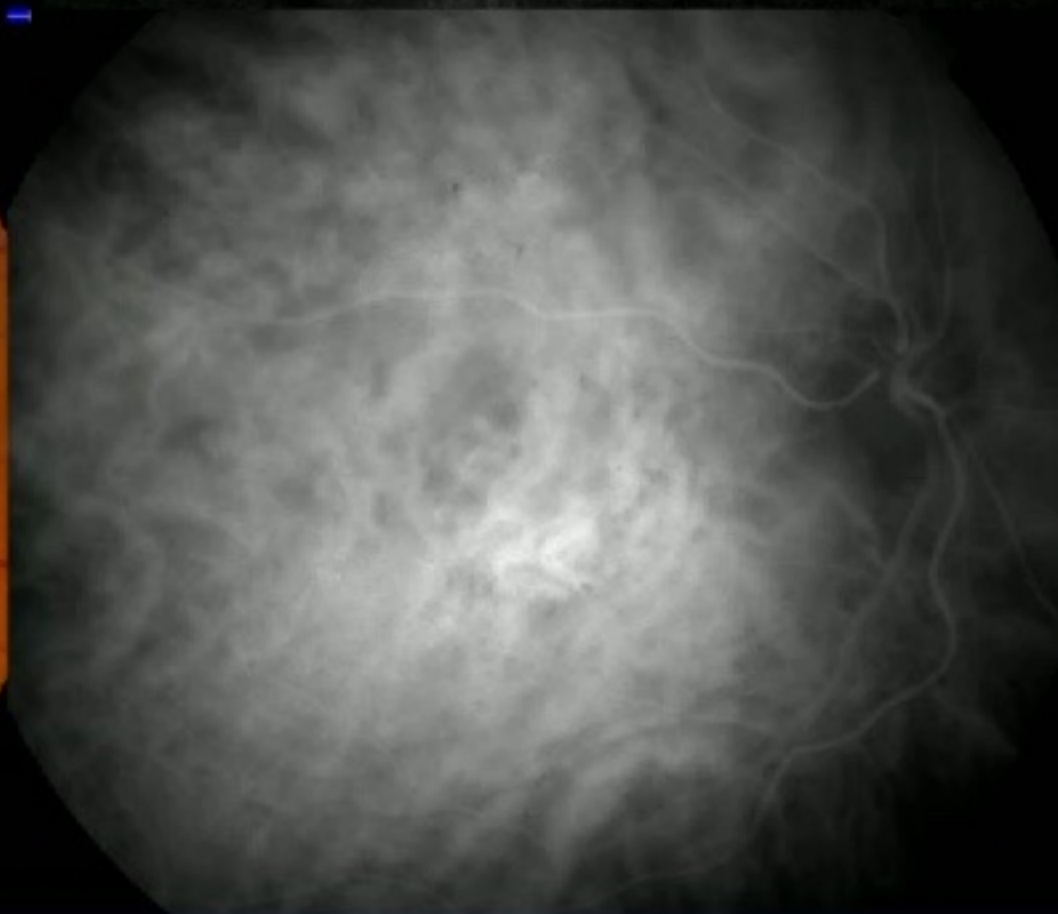
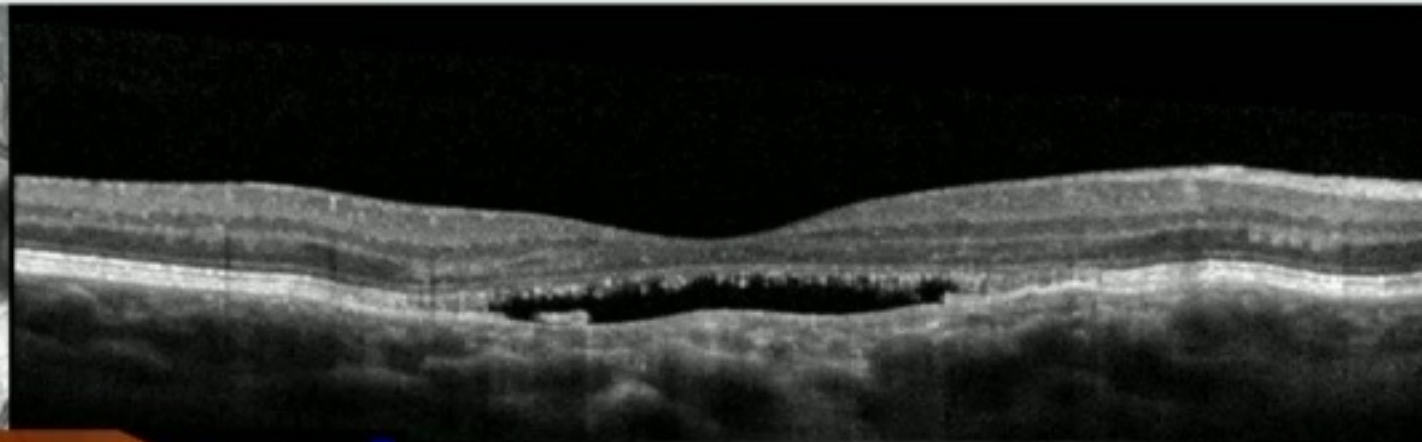
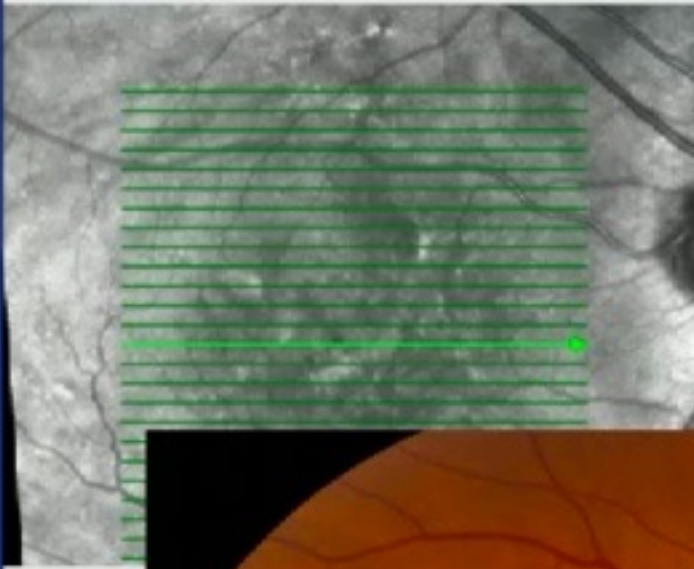
New!

#13



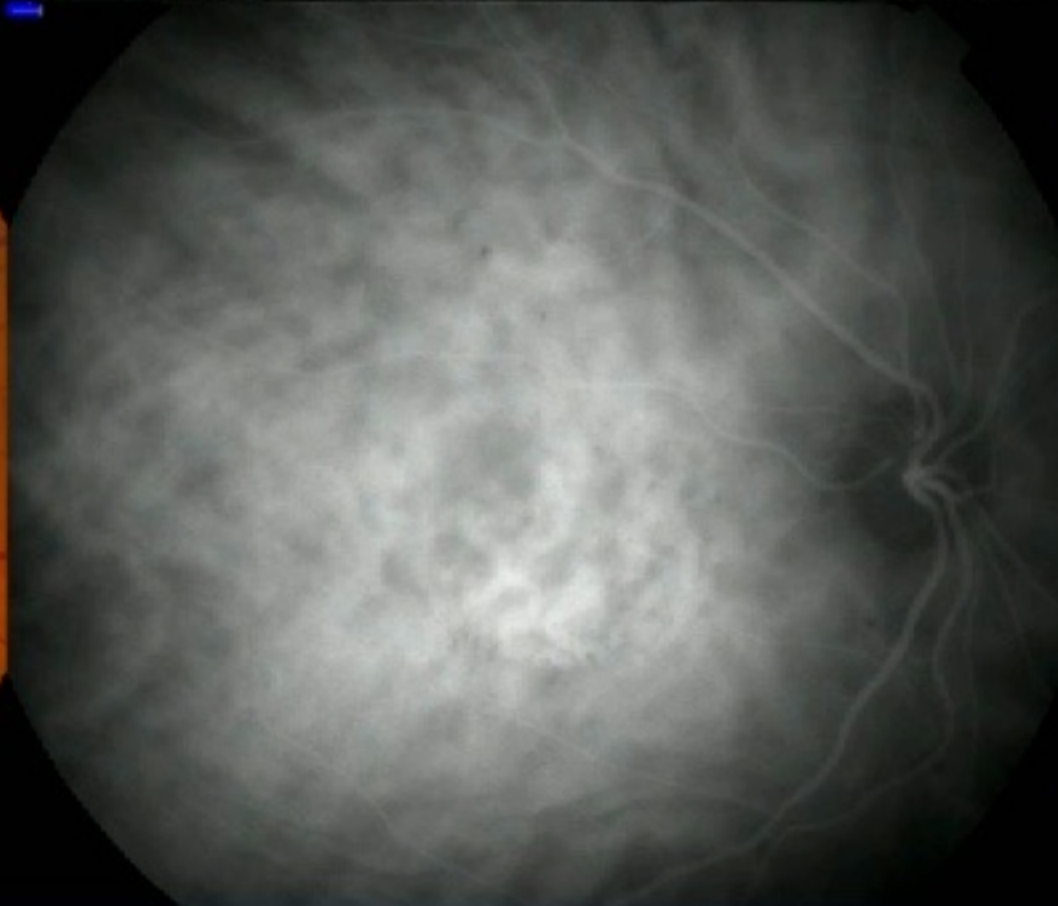
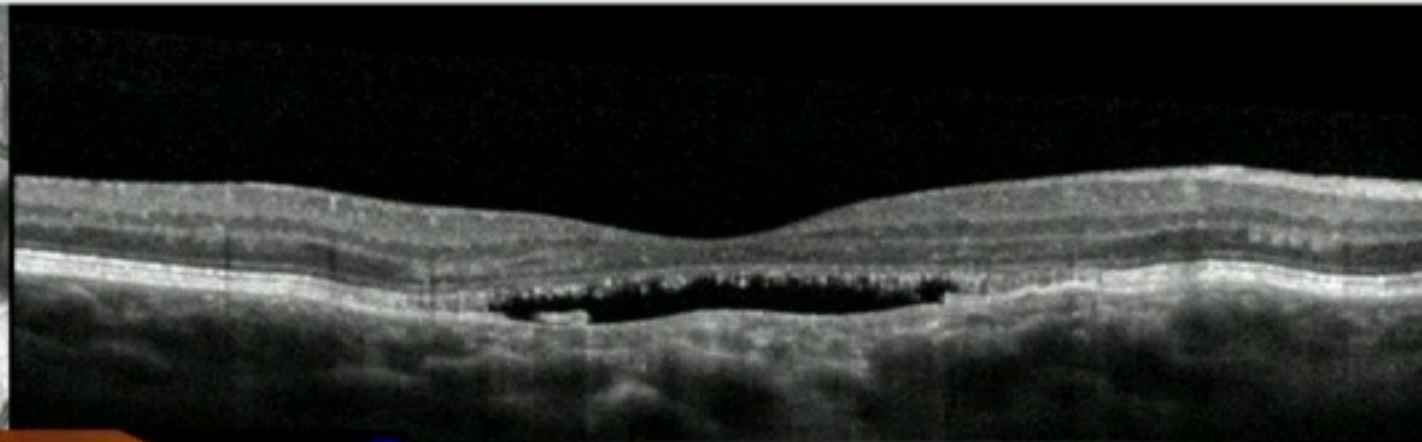
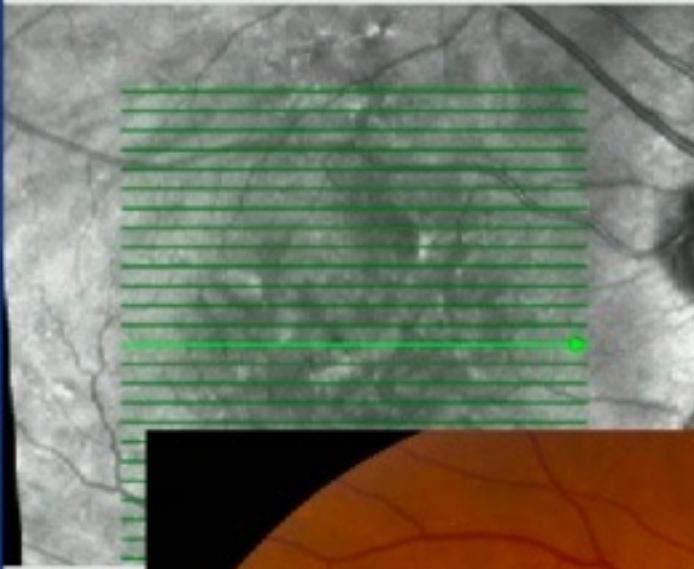
New!

#13



New!

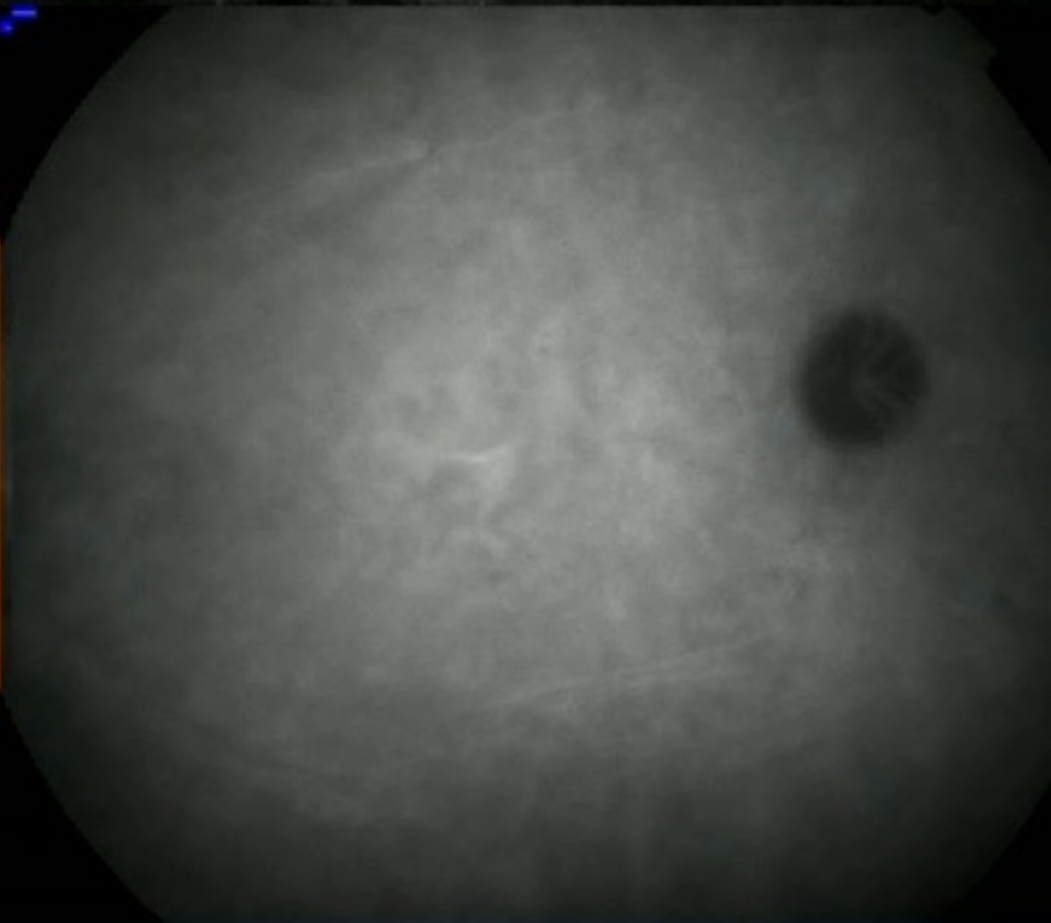
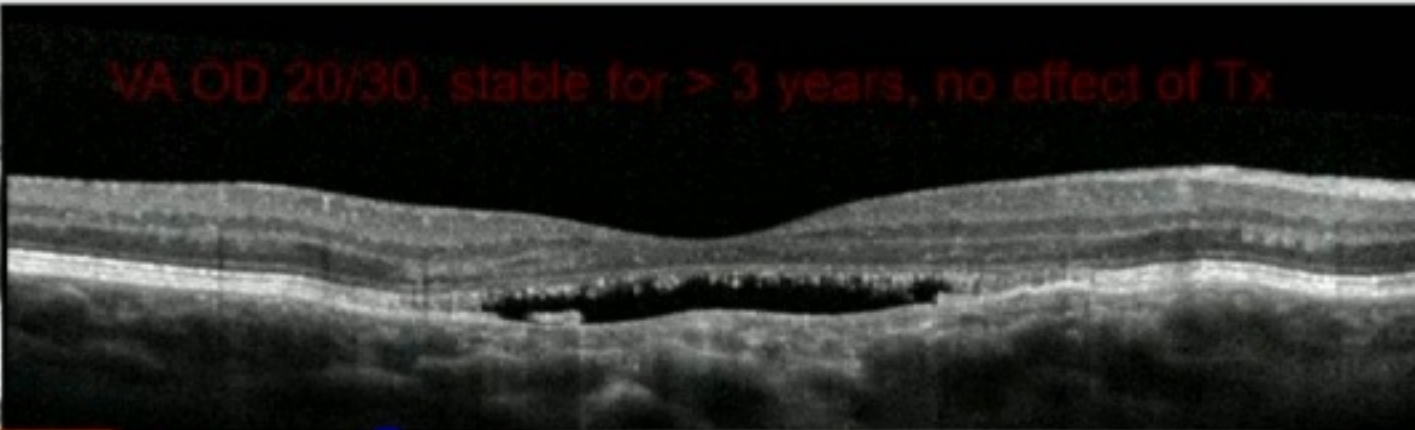
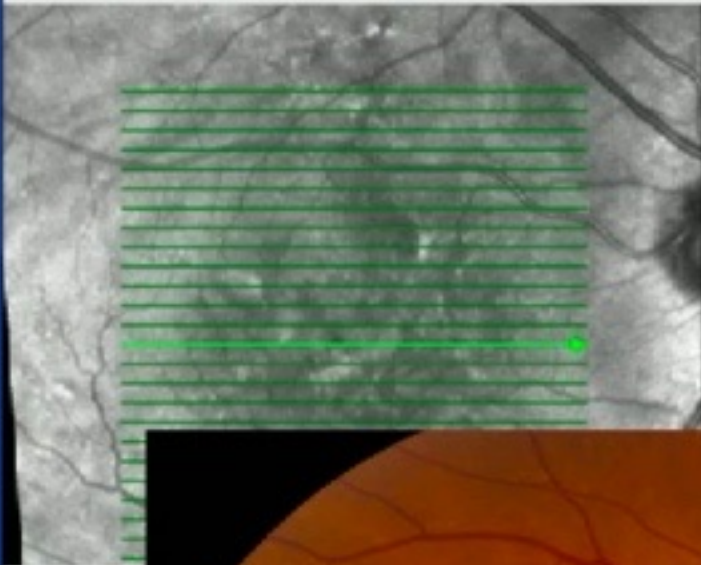
#13



New!

#13

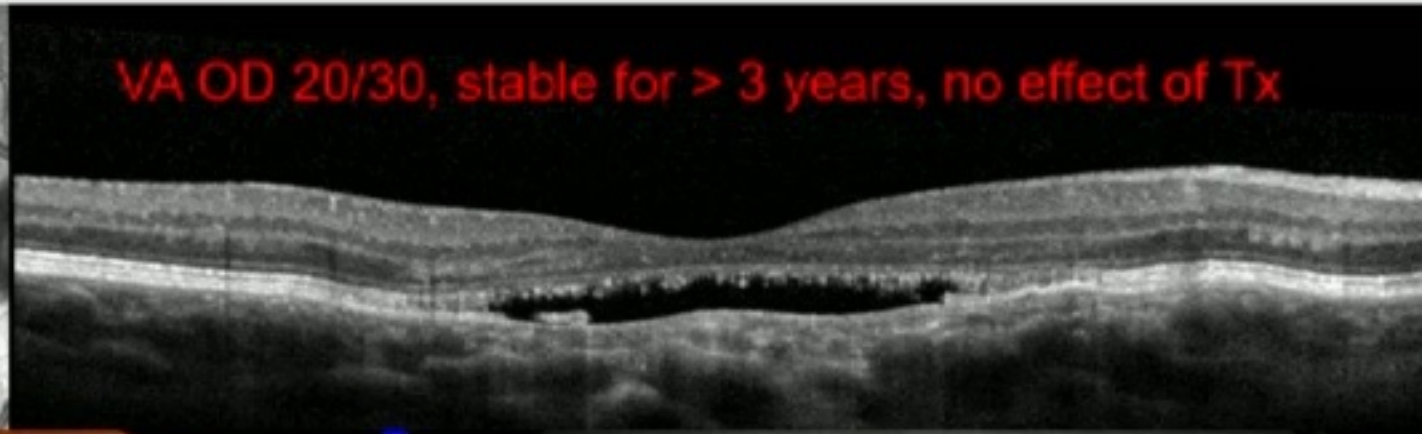
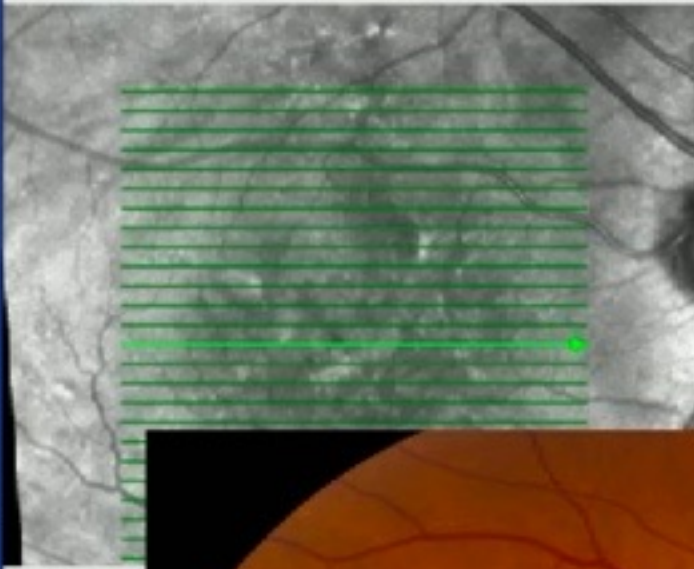
VA OD 20/30, stable for > 3 years, no effect of Tx



New!

#13

VA OD 20/30, stable for > 3 years, no effect of Tx

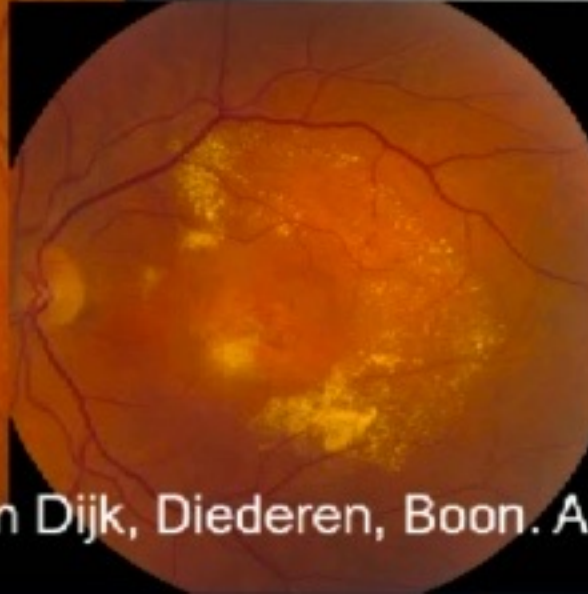
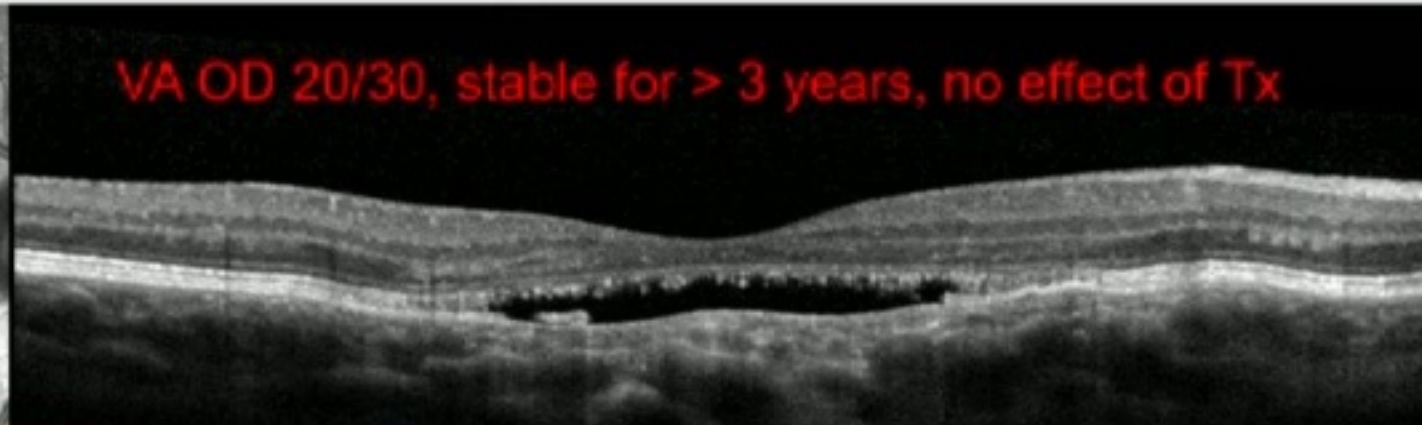
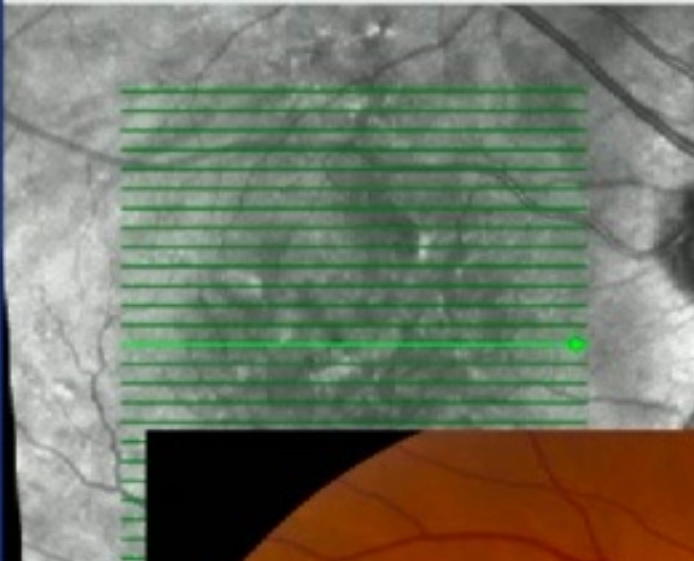


New!

#13

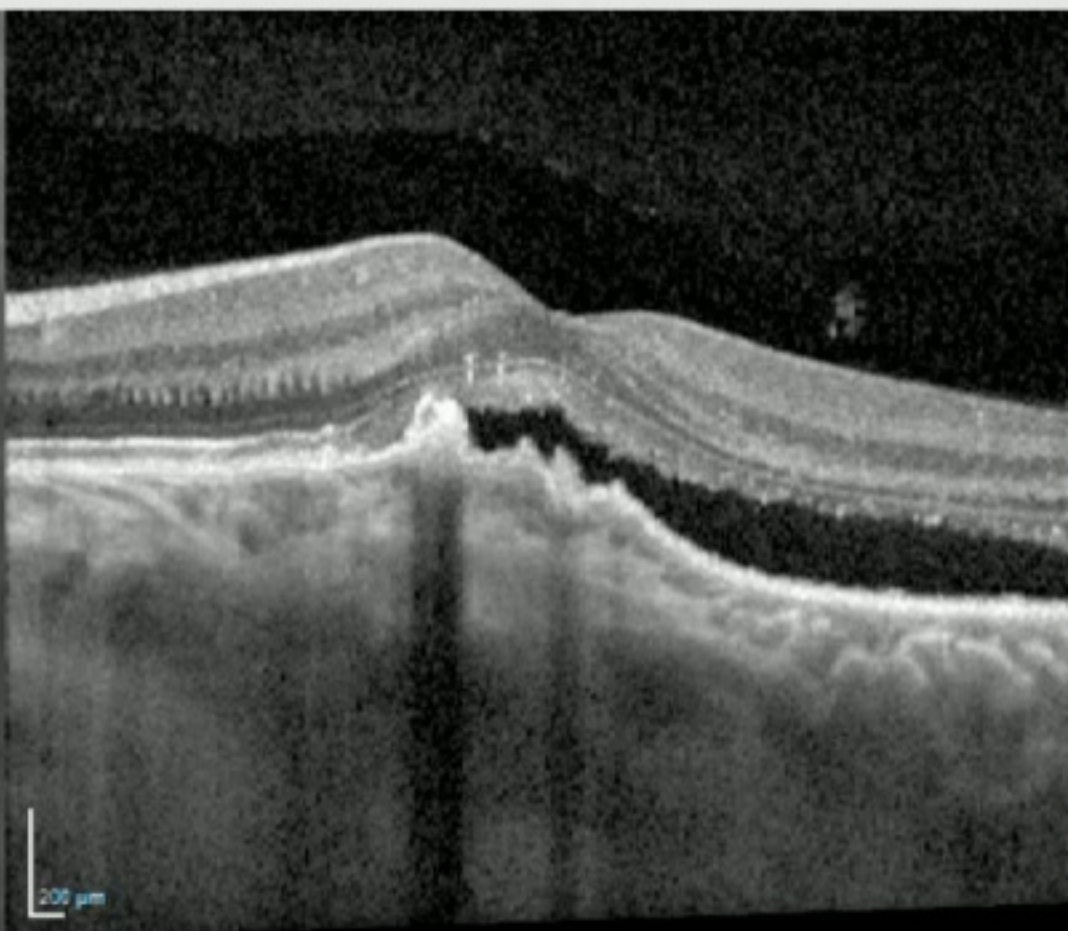
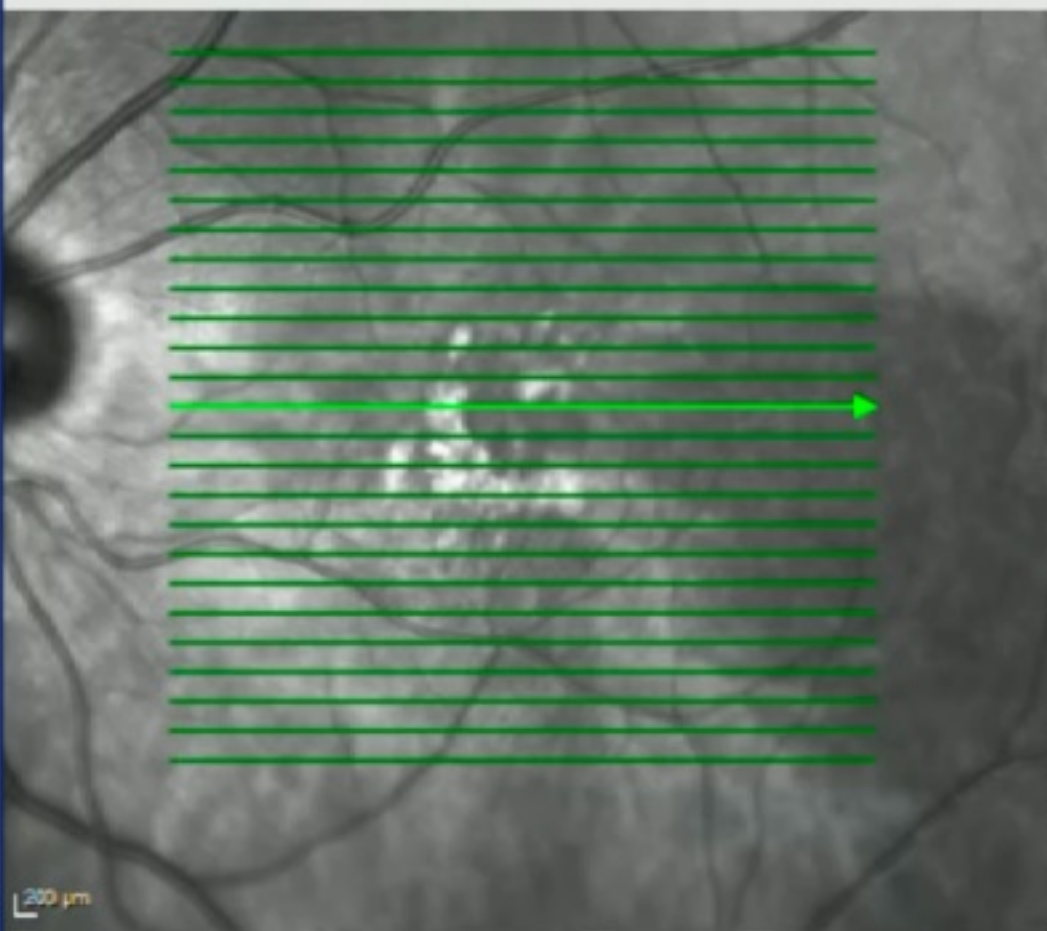
SMARPE: serous maculopathy with absent RPE

VA OD 20/30, stable for > 3 years, no effect of Tx



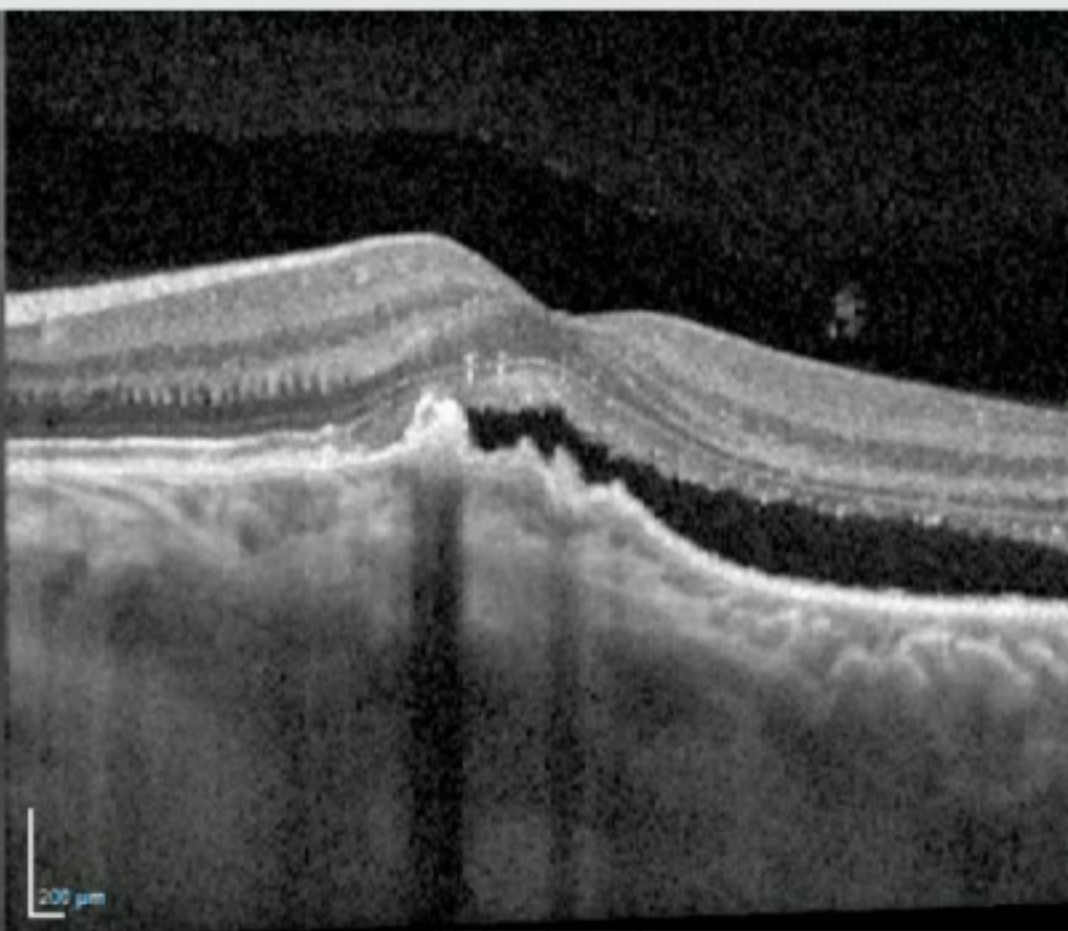
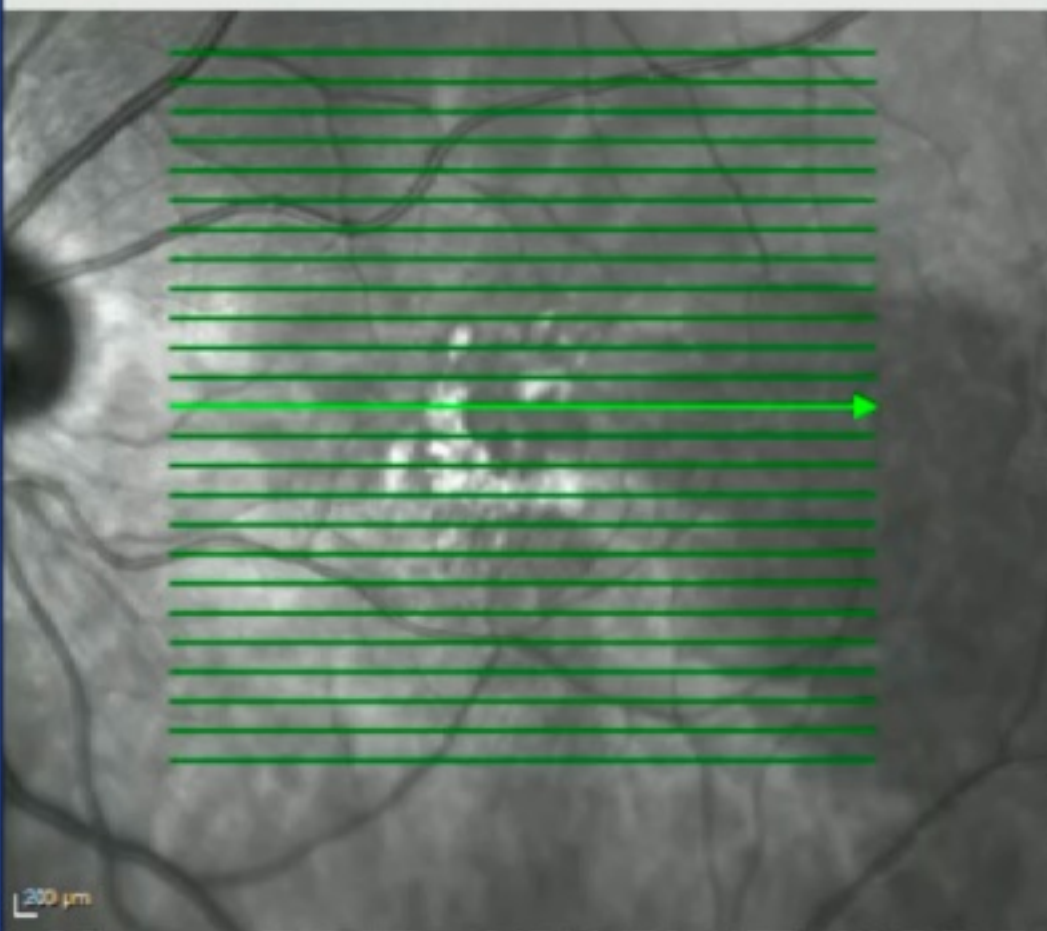
New!
No. 2

#13



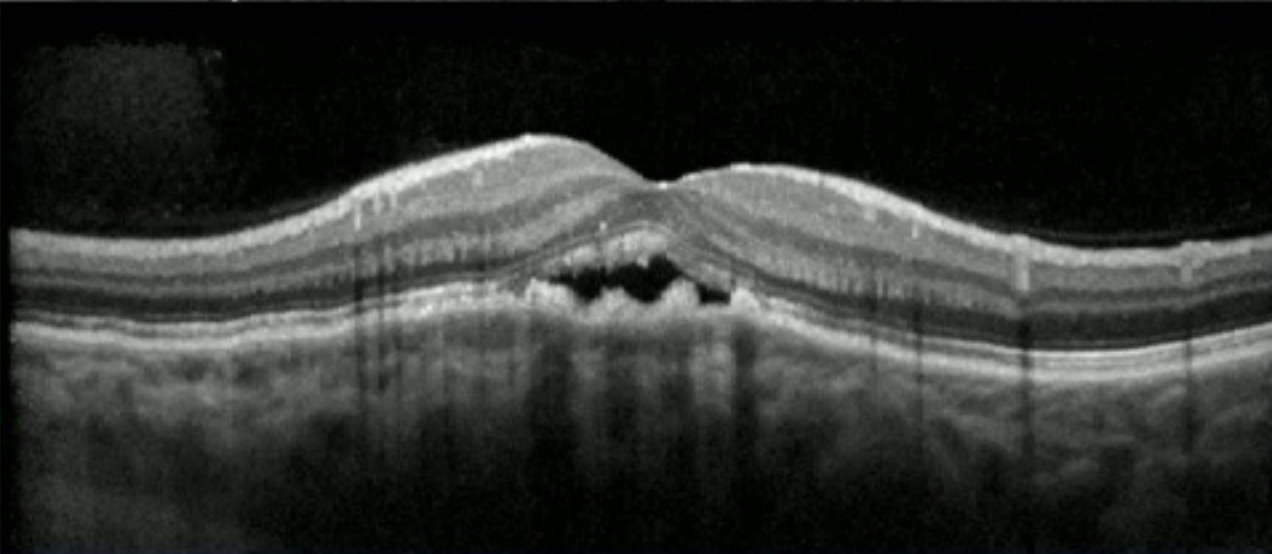
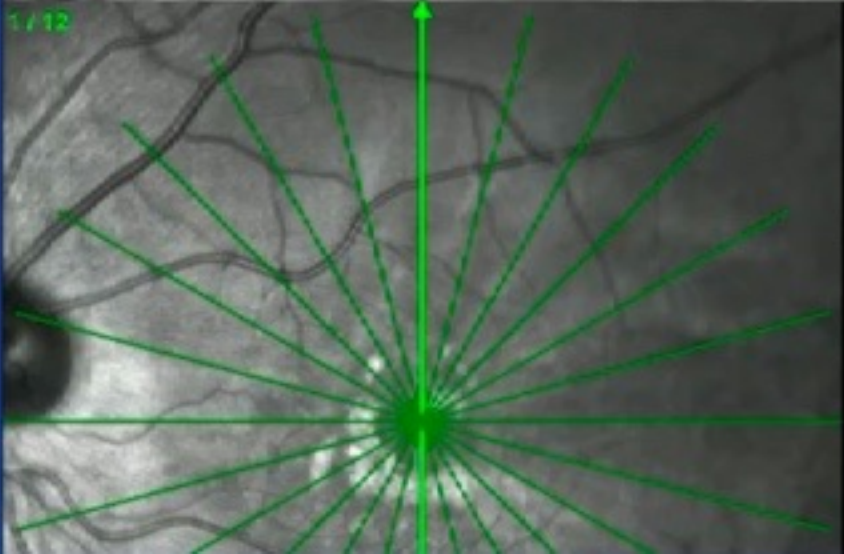
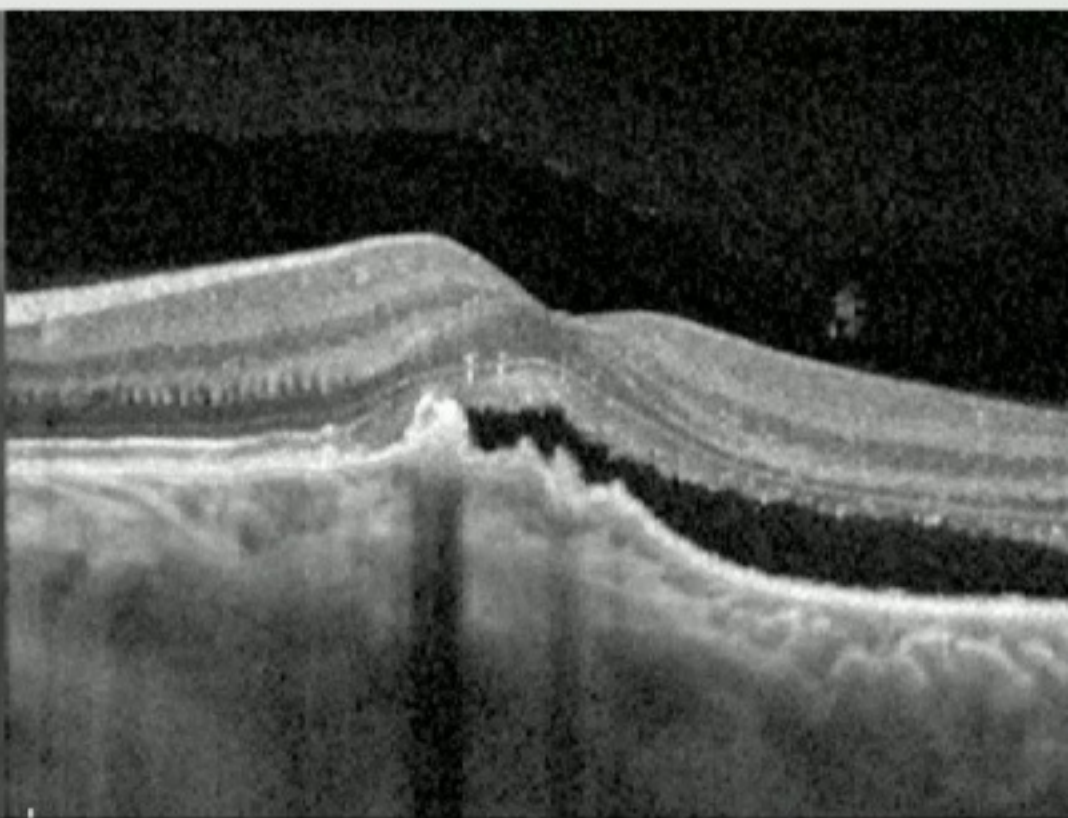
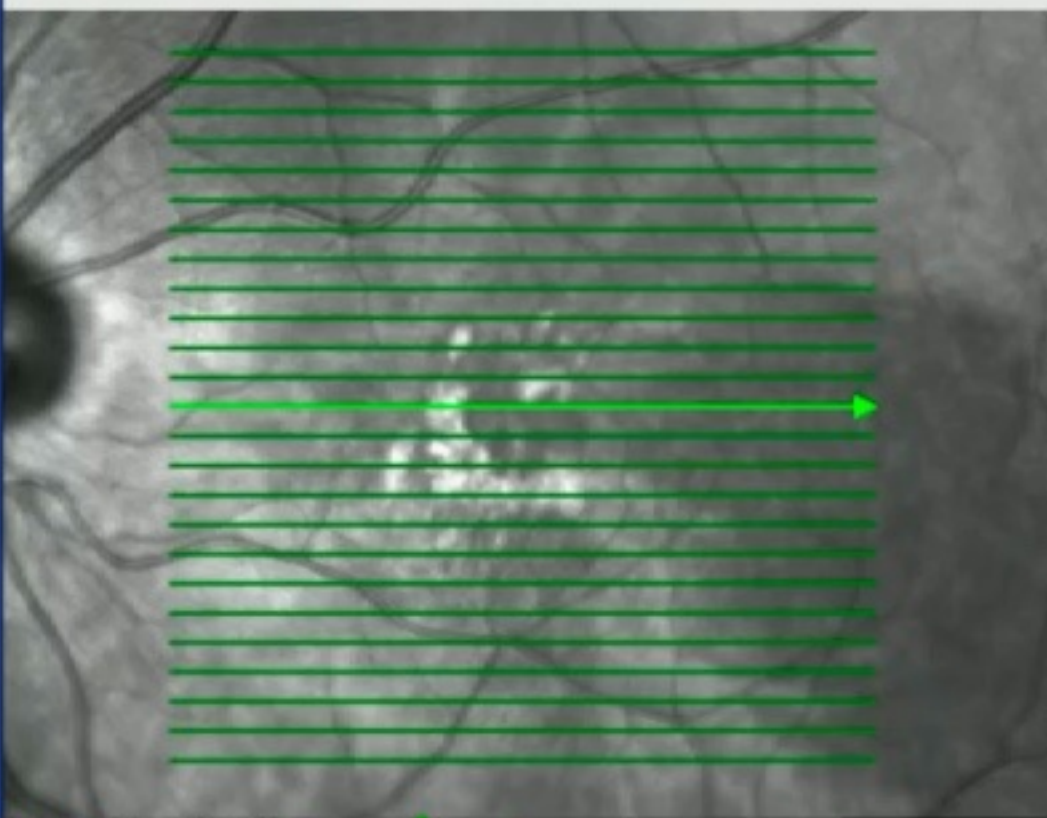
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No. 2

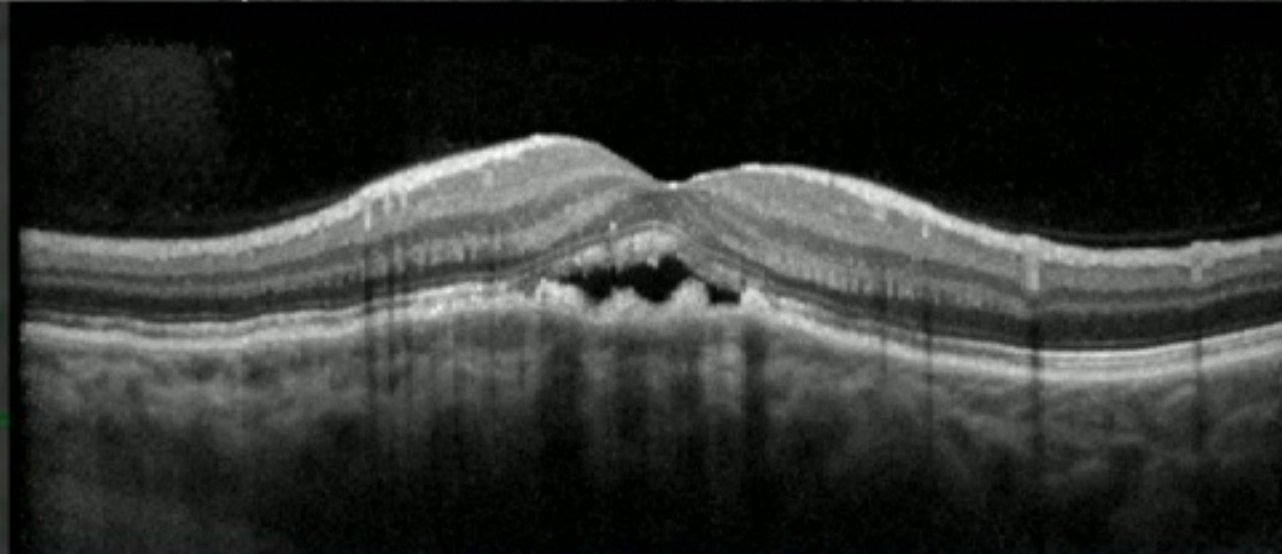
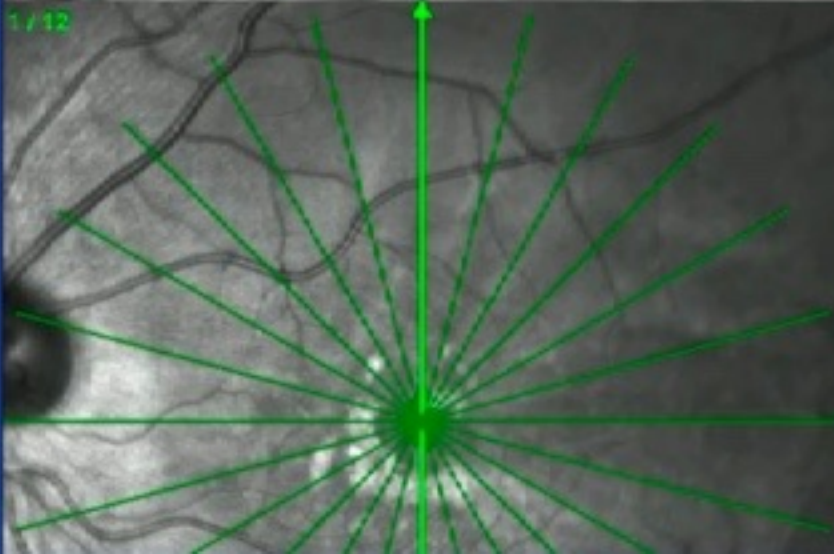
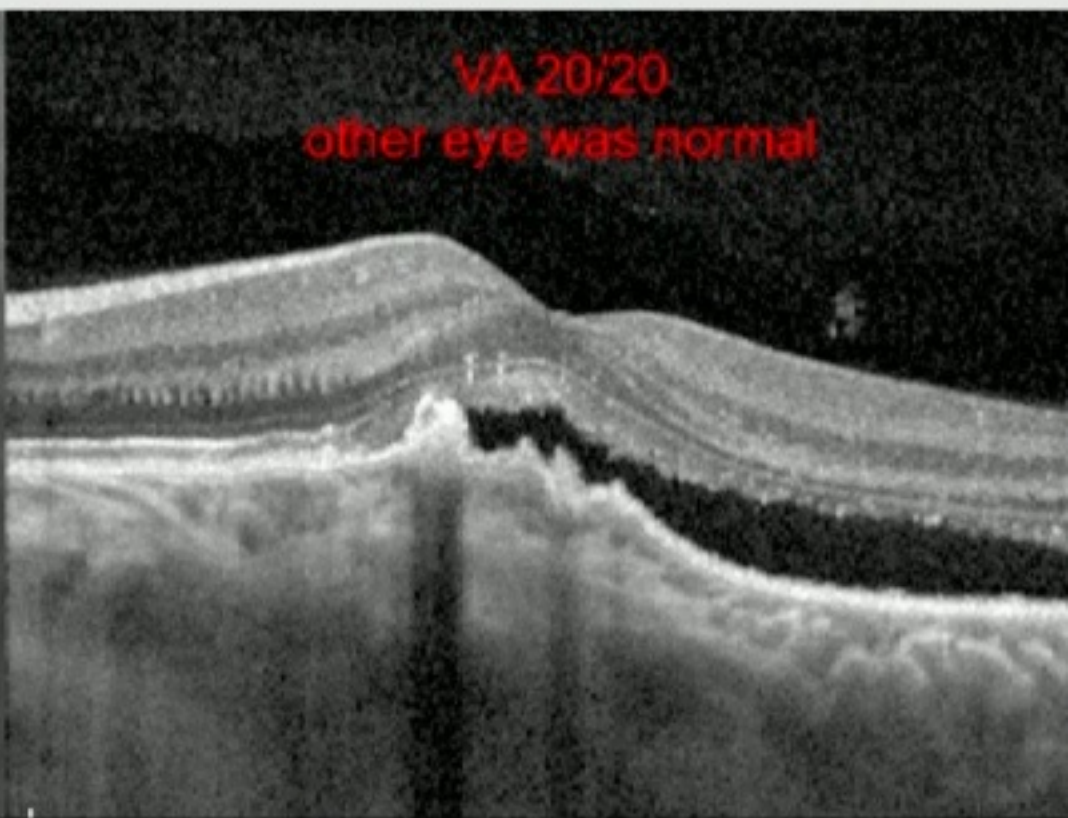
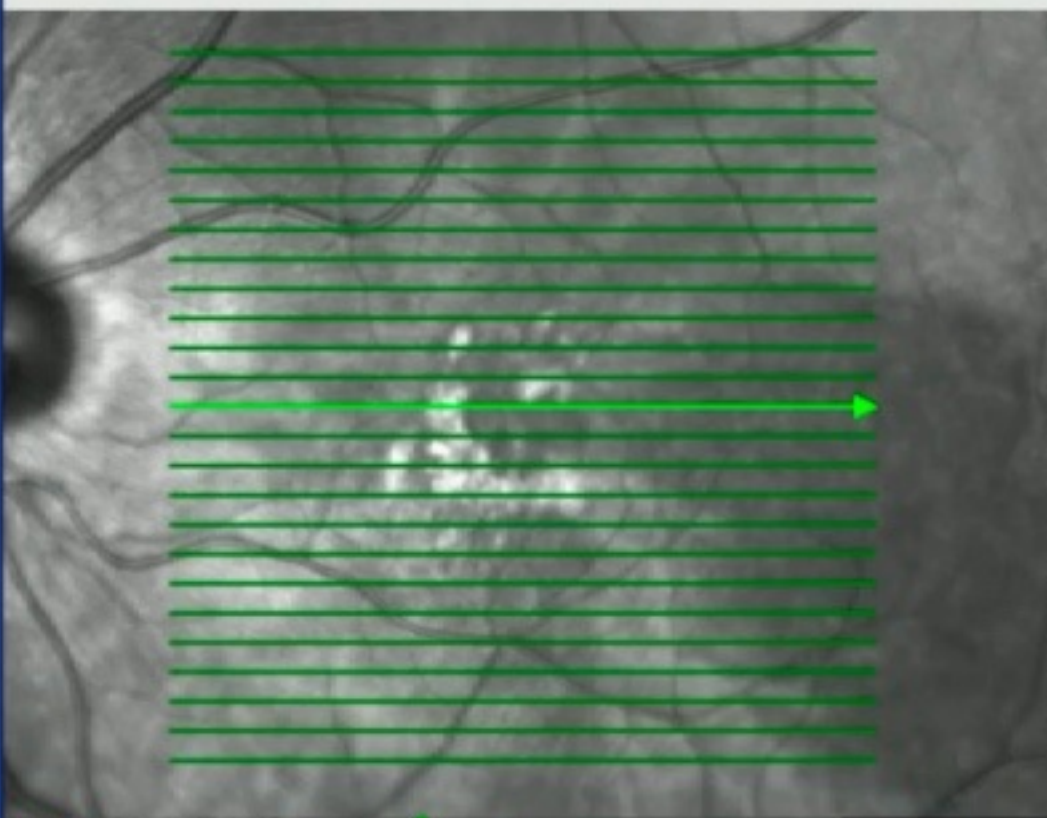
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1 / 12

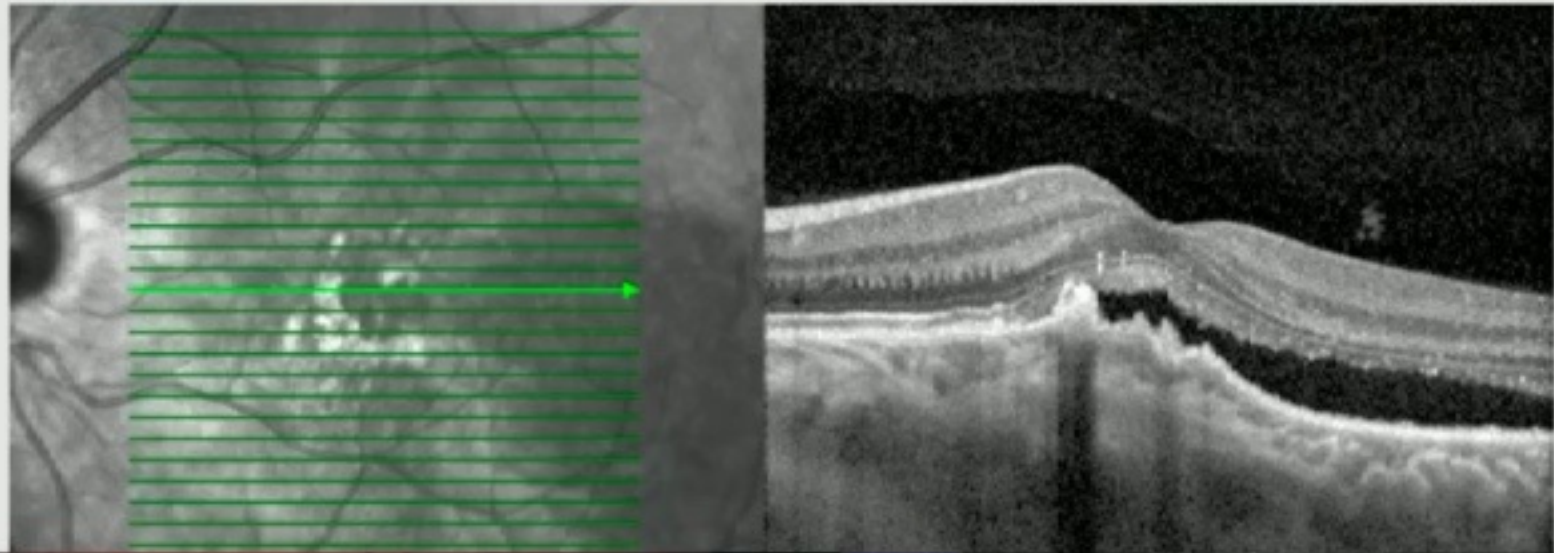
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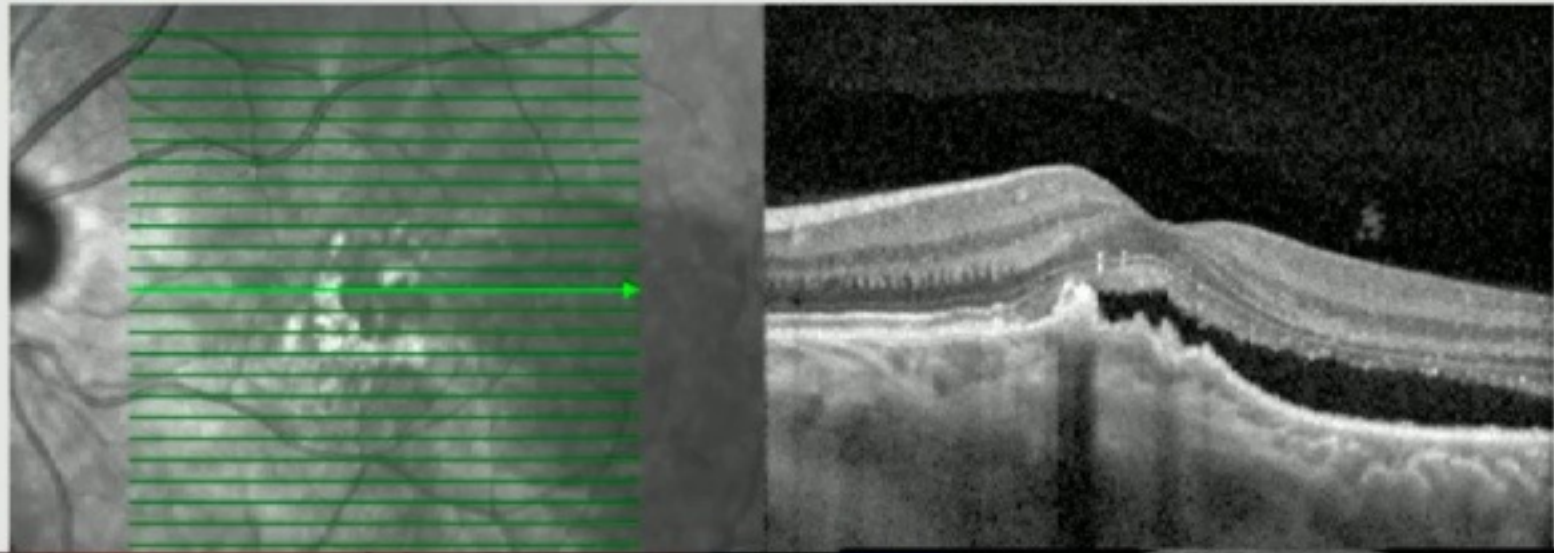
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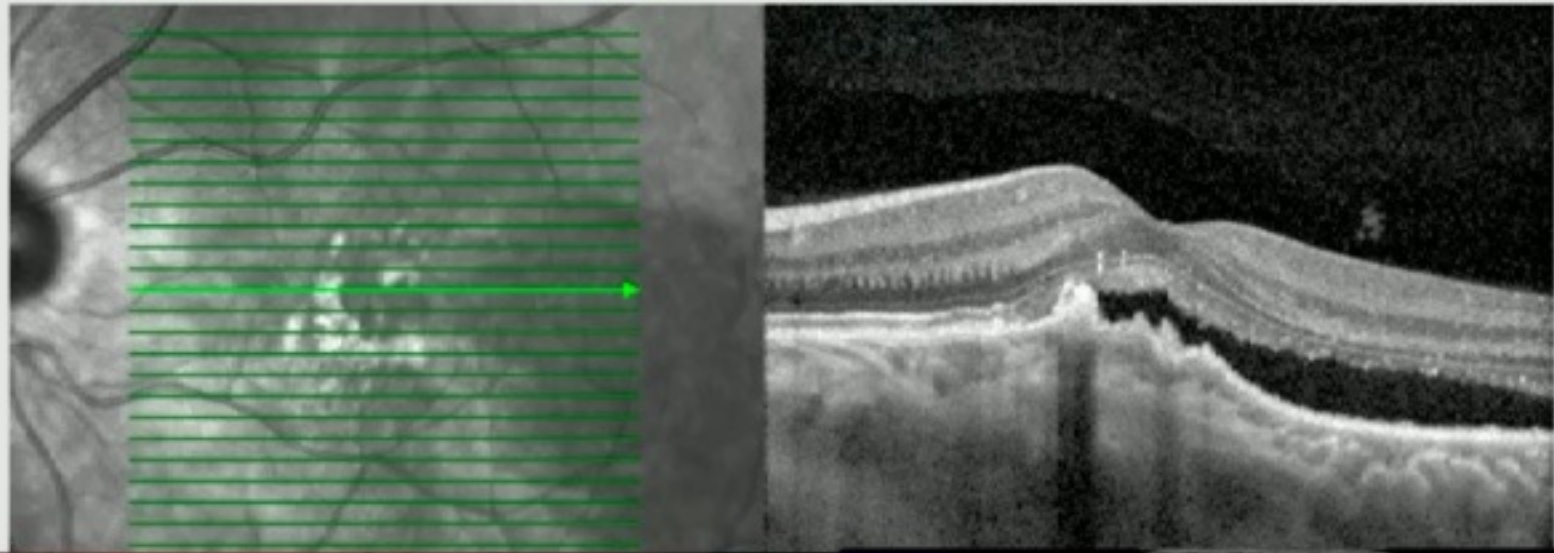
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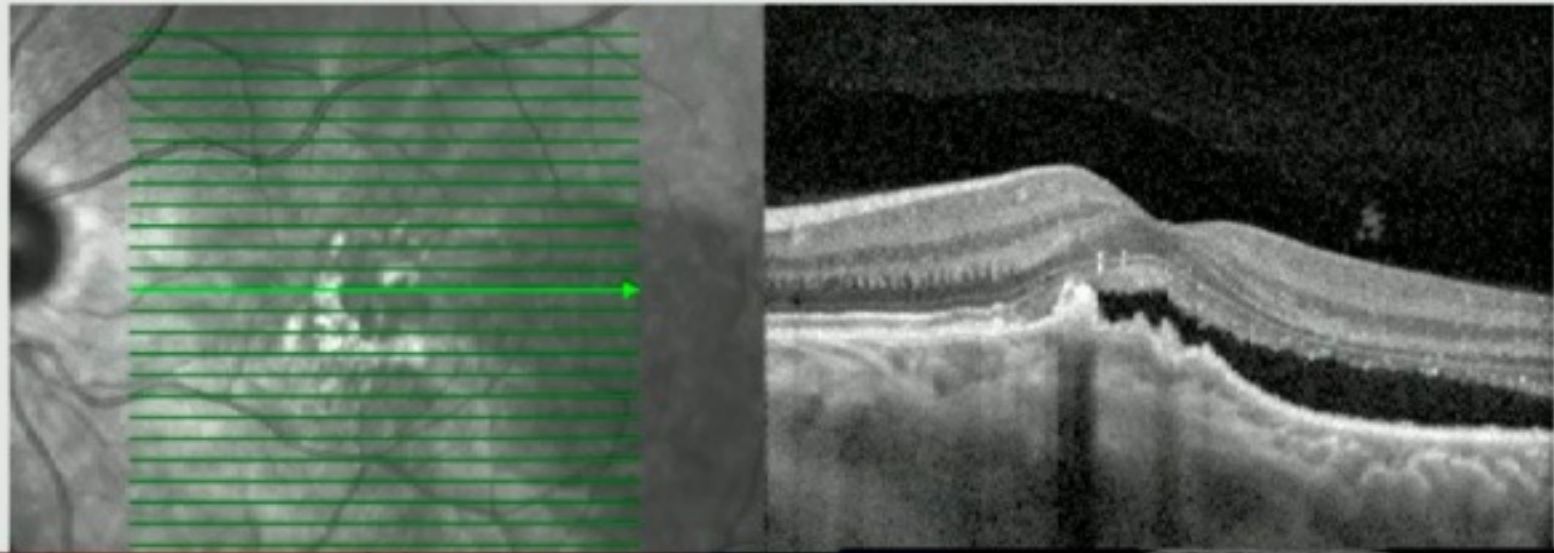
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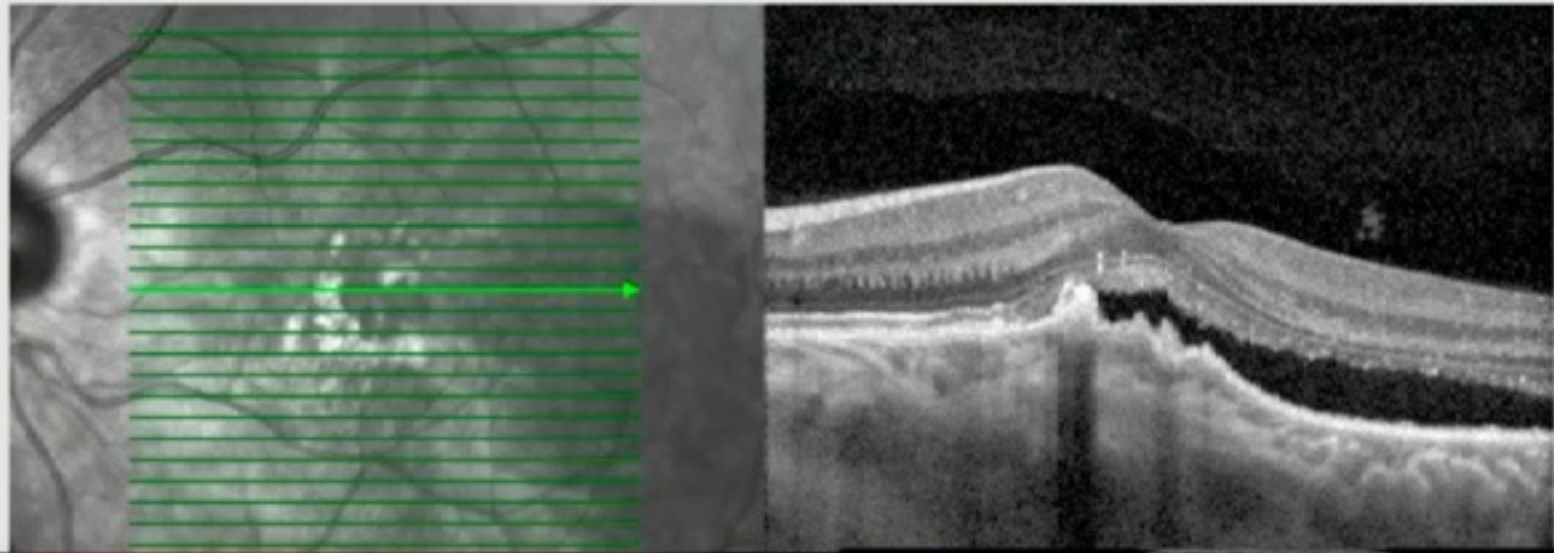
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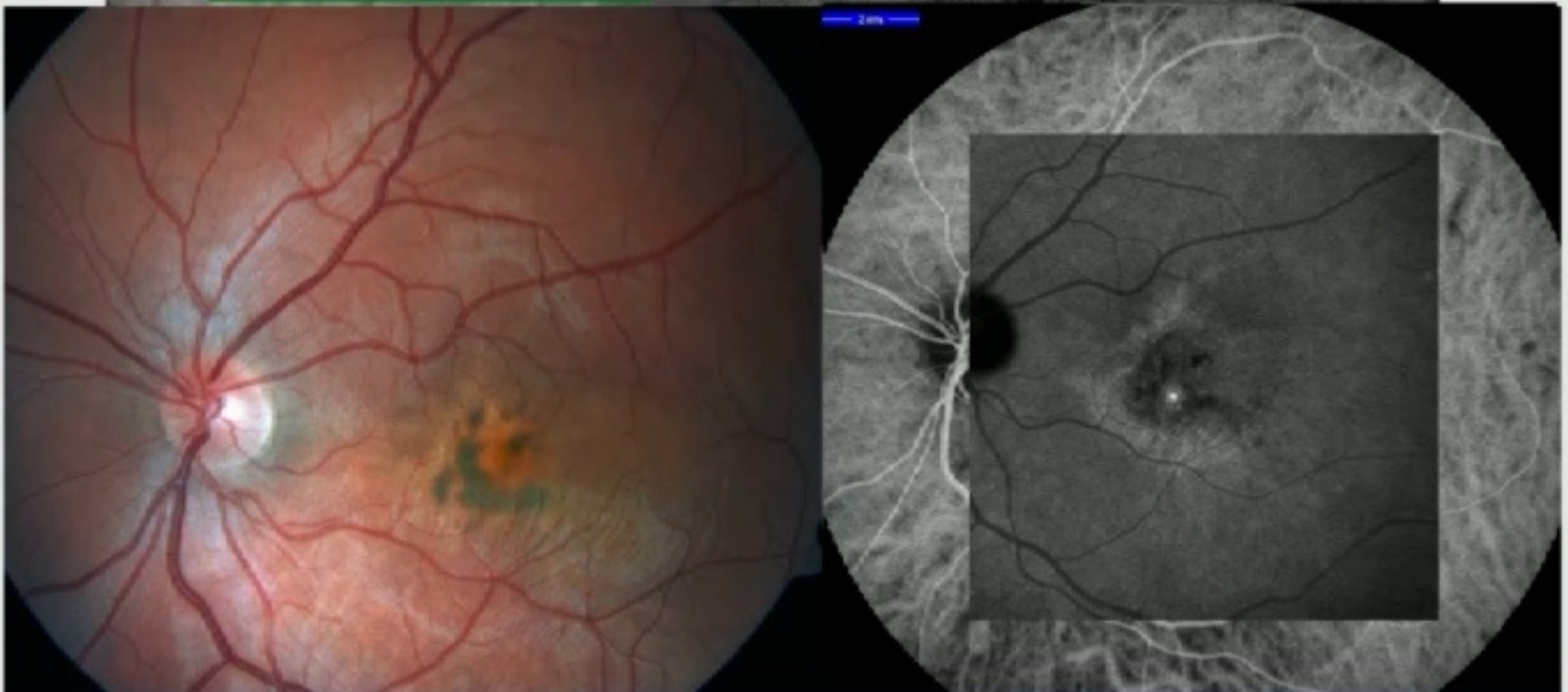
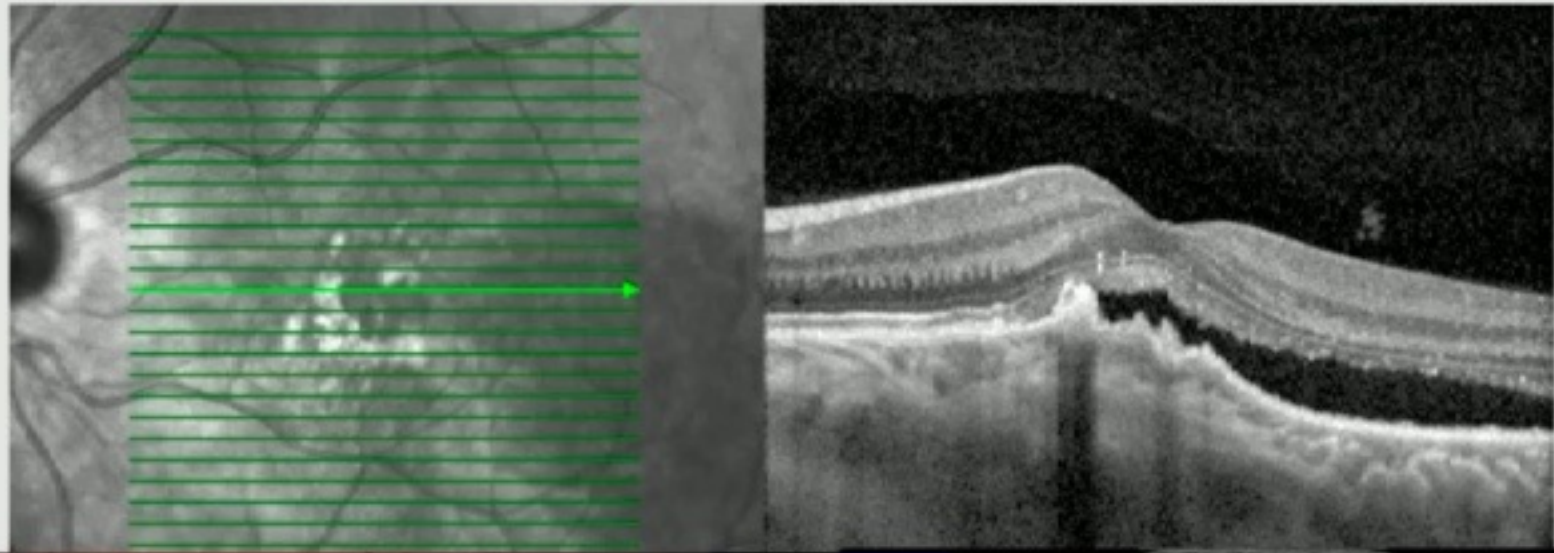
New!
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No. 2

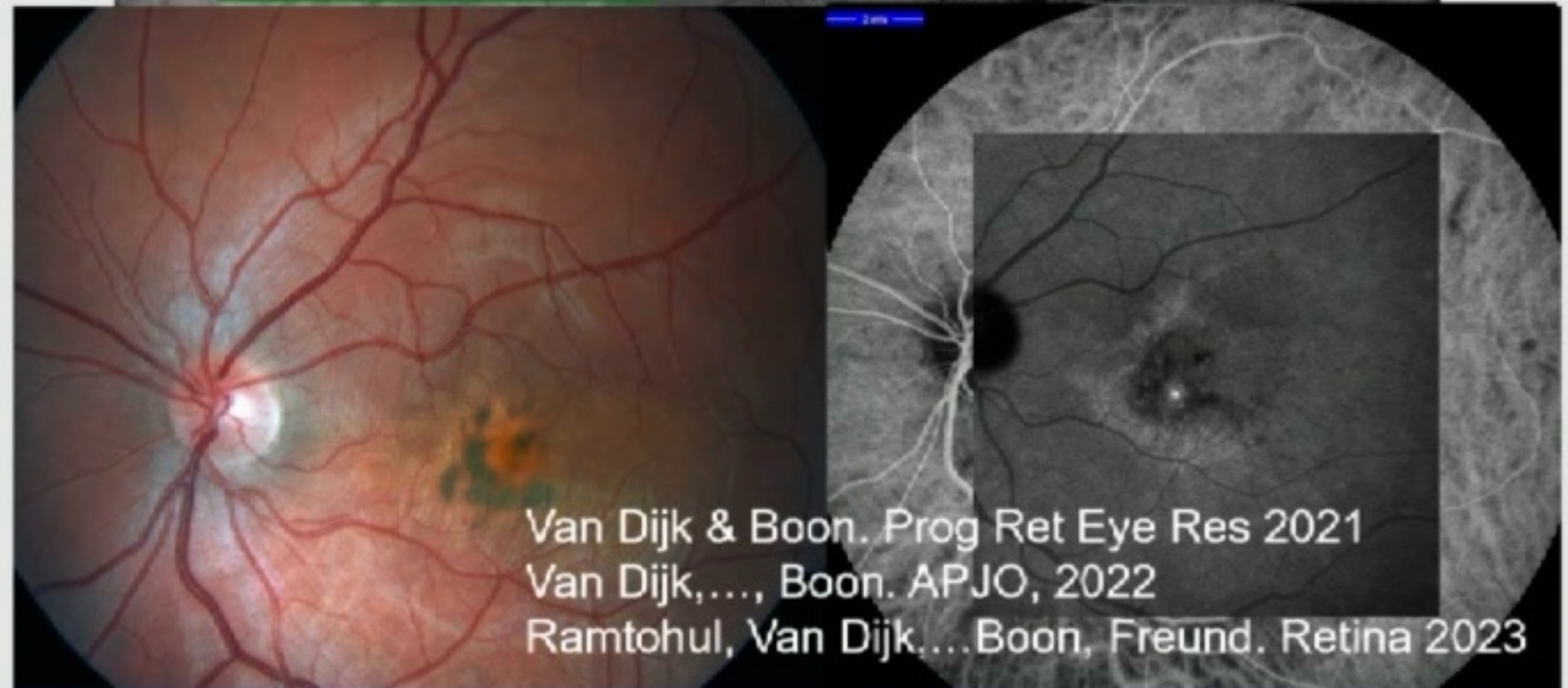
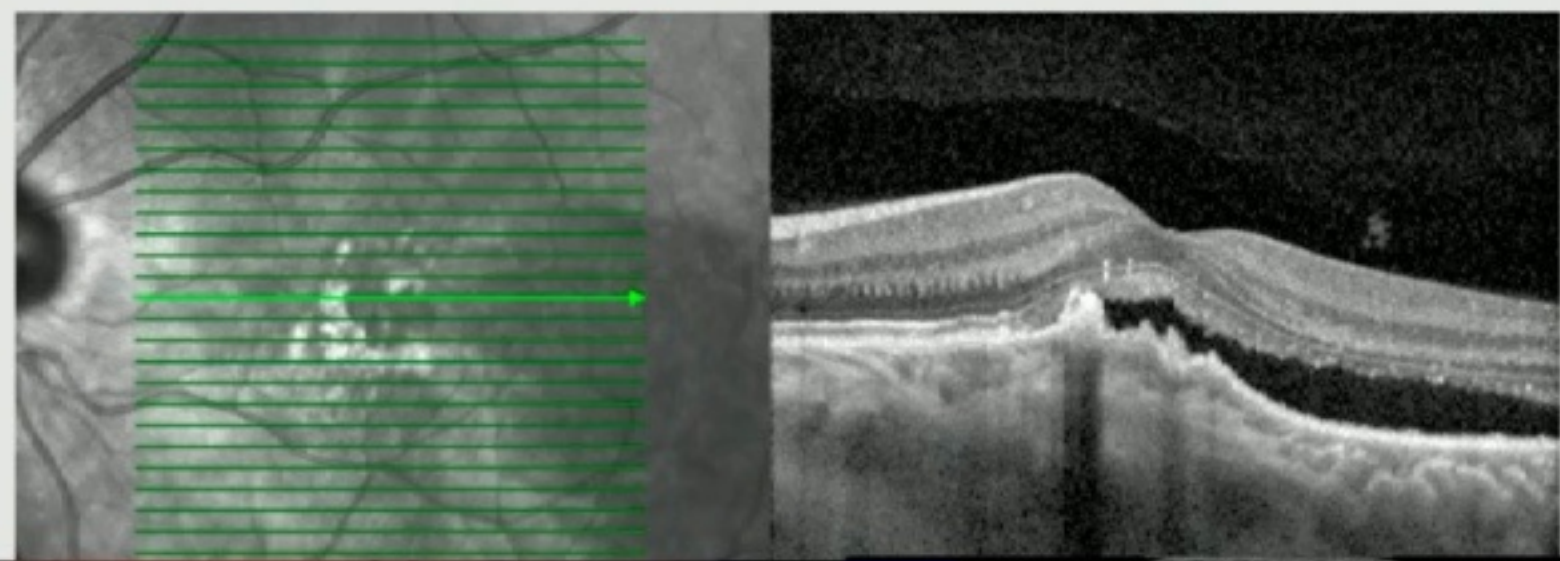
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New!
No. 2

#13

SMACH: stellate multiform amelanotic choroidopathy

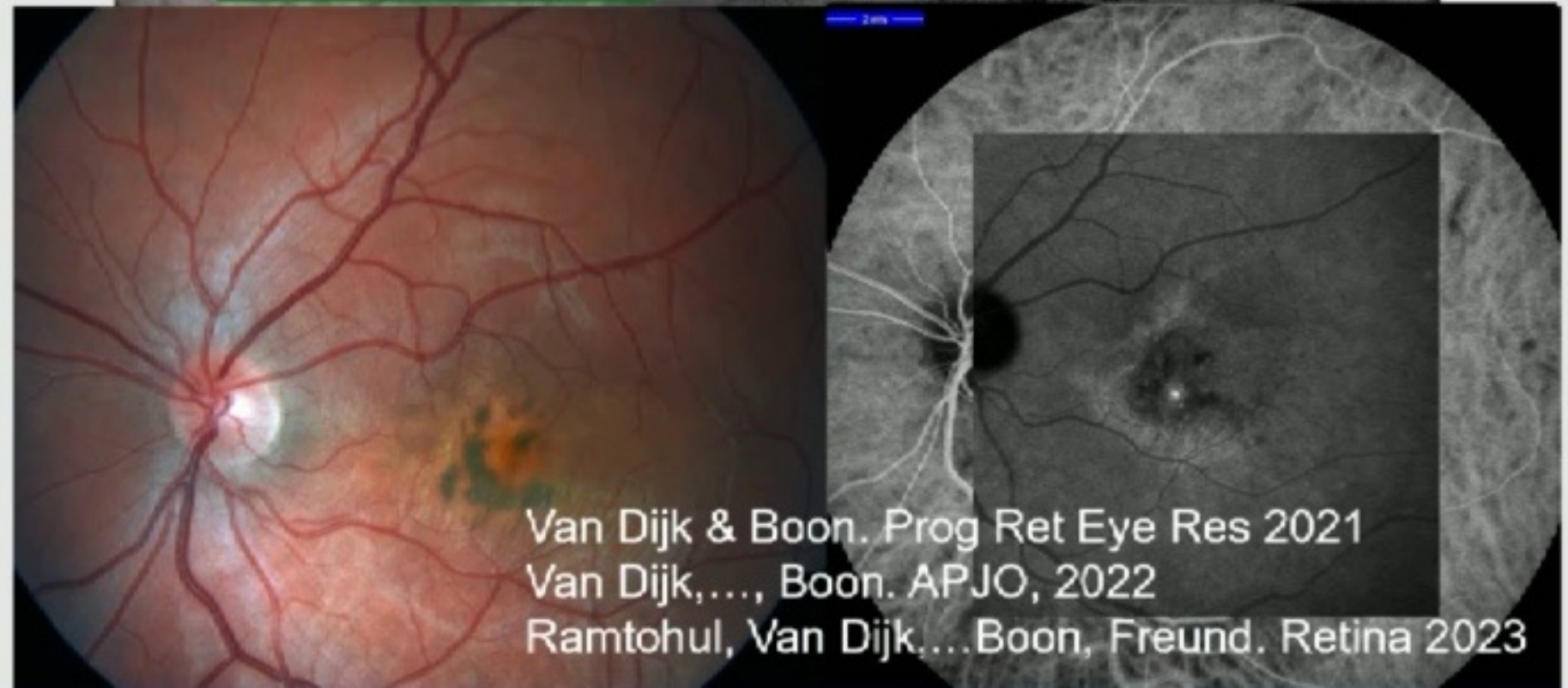
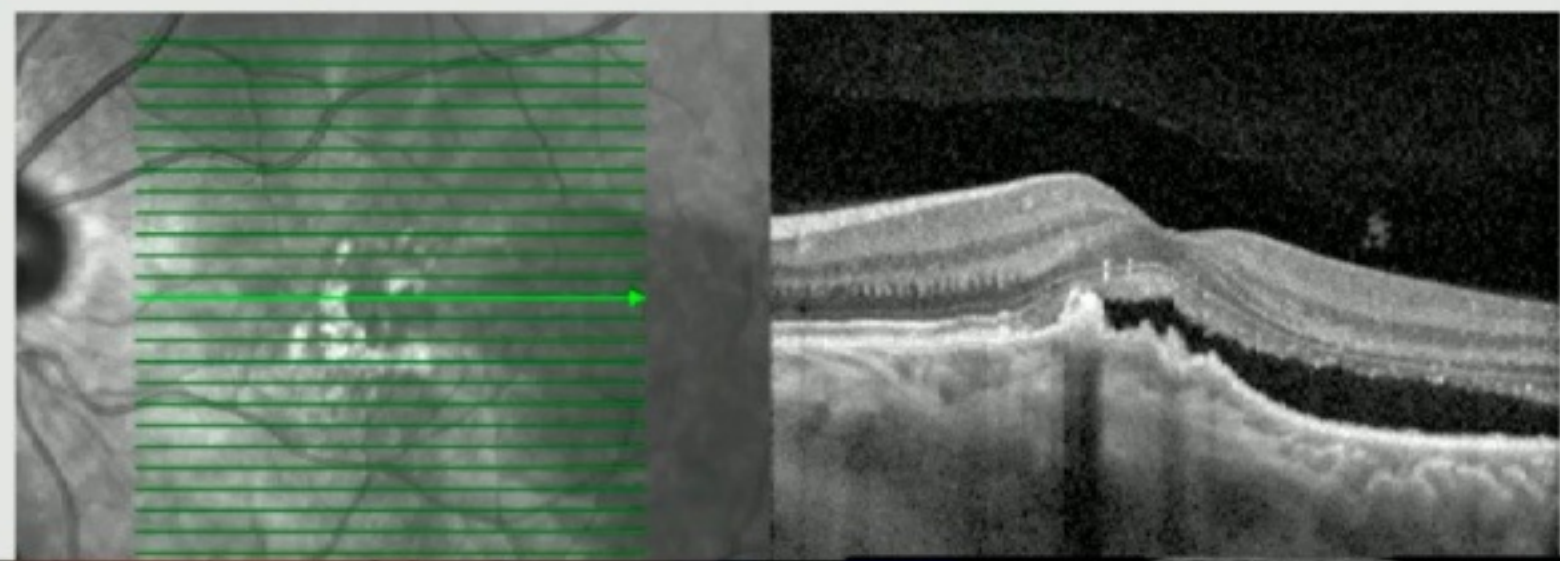


Van Dijk & Boon. Prog Ret Eye Res 2021
Van Dijk, ..., Boon. APJO, 2022
Ramtohol, Van Dijk, ... Boon, Freund. Retina 2023

New!
No. 2

#13

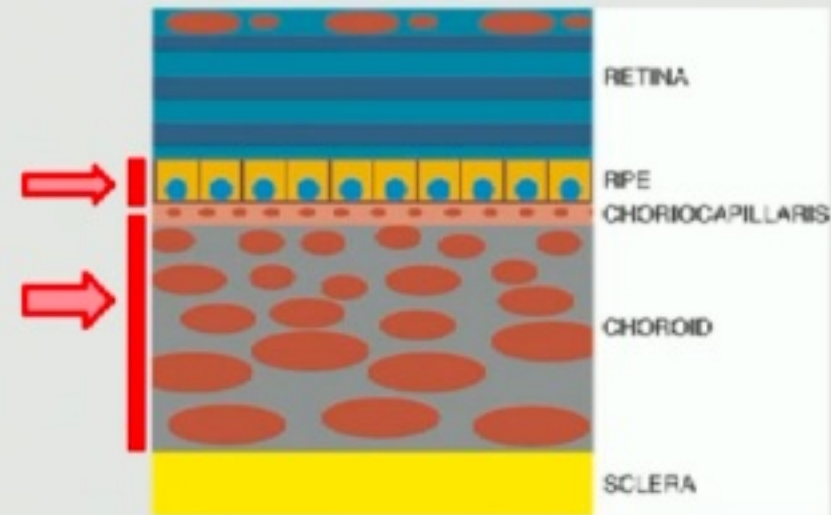
SMACH: stellate multiform amelanotic choroidopathy



Van Dijk & Boon. Prog Ret Eye Res 2021
Van Dijk, ..., Boon. APJO, 2022
Ramtohol, Van Dijk, ... Boon, Freund. Retina 2023

#13

1. Central serous chorioretinopathy
2. Neovascular conditions
3. Vitelliform lesions
4. Inflammatory diseases
5. Ocular tumours
6. Haematological malignancies
7. Paraneoplastic syndromes
8. Genetic diseases
9. Ocular developmental disorders
10. Medication- and toxicity-related conditions
11. Rhegmatogenous retinal detachment
12. Retinal vascular diseases
- 13. Miscellaneous: SMARPE, SMACH, drusen-associated**



Conclusions

- Due to its unique anatomical and functional characteristics, the macula is especially vulnerable to accumulation of SRF
- Despite this, visual acuity may be relatively preserved in several disease entities with macular serous SRF
- The differential diagnosis of macular serous SRF includes a broad spectrum of (at least) 13 disease categories
- These different entities can be distinguished well with thorough clinical examination

Conclusions

- Due to its unique anatomical and functional characteristics, the macula is especially vulnerable to accumulation of SRF
- Despite this, visual acuity may be relatively preserved in several disease entities with macular serous SRF
- The differential diagnosis of macular serous SRF includes a broad spectrum of (at least) 13 disease categories
- These different entities can be distinguished well with thorough clinical examination
- This differentiation has important therapeutic and prognostic consequences